

# **ASSESSING THE NEED FOR JUDGES AND COURT SUPPORT STAFF**

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## **Guidelines for Assessing the Need for Judges and Court Support Staff**

- Guideline 1**     *The need for judicial and court support staff positions should be assessed against (1) measures of demand for service, (2) statewide standards of judgeship needs, and (3) effective use of existing resources.*
- Guideline 2**     *The number of judgeship and court support staff positions required should depend upon satisfying preestablished criteria. The criteria should be established by the state court administrative office prior to the analysis of need in any particular locality and should include consequences to the public if not adding judges or court support staff.*
- Guideline 3**     *After a decision on judgeship and court support staff needs is made, the burden of proof for any modification should rest upon those advocating a contrary position, whether they be members of the judicial, legislative, or executive branches of government.*
- Guideline 4**     *Local courts should provide the data necessary to assess the need for judges and court support staff on a regular basis. Statutes or court rules should specify a clear set of definitions and the data elements required to produce the assessment measures.*
- Guideline 5**     *The best direct measure of demand for judges and court support staff is the number of weighted filings, tempered by qualitative considerations.*
- Guideline 6**     *Existing resources should be evaluated in terms of a standard year and full-time equivalent hours per day for judges and court support staff.*

- Guideline 7** *Before new judges or court support staff are requested, the current distribution of caseloads should be examined to ensure the existing judges and court support staff are allocated equitably among jurisdictions.*
- Guideline 8** *The need for judges, quasi-judicial officers, and court support staff should be assessed together if at all possible, because addition of one type of court personnel may affect the overall need for resources. Without the proper type and level of support, judges may be forced to perform some tasks that could be delegated to qualified support staff.*
- Guideline 9** *A single set of case weights for judges and for court support staff within a state is preferable. Weighted caseload studies, however, should evaluate differences in time requirements or case mix across courts of different sizes to determine if separate weights are needed.*
- Guideline 10** *Simulation can be used in concert with other criteria to determine how to make the best use of existing judges and court support staff.*
- Guideline 11** *One necessary step in assessing the need for judges and court support staff should be an independent review of whether a court appearing to need additional judges could reduce or eliminate the apparent need through operational changes. Part of that review should include opportunities for input from local judges, members of the bar, local elected representatives, and citizens knowledgeable about the operations of that court.*
- Guideline 12** *Qualitative adjustments to quantitative criteria used to assess the need for judges and court support staff should themselves be evaluated. If criteria require frequent adjustment after the on-site review, the quantitative criteria may need to be changed.*



# Chapter I

## Framework for a Resource Need Assessment

### INTRODUCTION

How many judges, quasi-judicial officers, and court support staff does a court need to serve the public? According to Standard 4.2 of the *Trial Court Performance Standards*, “The trial court responsibly seeks, uses, and accounts for its public resources.”<sup>1</sup> The commentary to that Standard of Judicial Independence and Accountability notes that trial courts must use available resources prudently, even if those resources are inadequate, to address the multiple and conflicting demands placed upon them. But what options are available to examine the sufficiency of resources? Alternatives range from the subjective perceptions of a stress and overwork approach to highly sophisticated weighted caseload and simulation techniques. Objective, empirical information alone rarely determines a staffing decision, but in these times of scarce resources, it is also rare to obtain staff without strong empirical documentation of need. While it is still true that rising caseloads *inspire* many court managers to request additional personnel, the competition for limited funds increasingly requires that these requests be well substantiated.

### THE PURPOSE

This handbook is intended to acquaint state and local courts as well as legislative bodies with alternative methods of assessing the need for court judges and court support staff and to help decision makers evaluate these alternatives and choose those most appropriate for their situation. In sum, this handbook aspires to be a management and planning tool for state courts and legislatures to use to assess objectively how many judges and court support staff are needed to process the work effectively and efficiently.

The specific goals of this monograph are to:

- describe and evaluate current criteria for determining the need for judges and court support staff;
- develop a range of alternative approaches for determining the need for judges and court support staff;
- evaluate innovative methodologies used to determine the need for judges and court support staff;

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<sup>1</sup> Commission on Trial Court Performance Standards, *Trial Court Performance Standards with Commentary*, a joint project of the Bureau of Justice Assistance, U.S. Department of Justice, and the National Center for State Courts (Williamsburg, Va.: National Center for State Courts, 1990), p. 19.

- identify ways to lower costs and ease the burden of conducting judgeship needs and court support staff studies;
- identify the balance between quantitative and qualitative methods of assessment; and
- integrate the criteria used to assess the need for judges and the criteria used to assess the need for court support staff.

In 1982, the Task Force on Principles for Assessing the Adequacy of Judicial Resources [hereafter referred to as the Task Force] produced a thoughtful and coherent approach to the subject of judgeship needs. The Task Force Report<sup>2</sup> was endorsed by the Conference of State Court Administrators, the National Association for Court Management, the National Conference of Metropolitan Courts, and the National Council for Judicial Planning.

In the 13 years since that report was written, courts have continued to struggle with tighter budgets, to search for new methodologies to assess resource needs, and to experiment with increasingly sophisticated quantitative techniques. Moreover, the scope of resource needs assessment has greatly expanded. How should the assistance of quasi-judicial staff, such as magistrates and commissioners, be acknowledged? What impact does the presence or absence of court support staff have on the need for judges? This research follows the philosophy of the original Task Force, but updates and extends the methodology to include quasi-judicial officers and court support staff in the analysis.

## THE RATIONALE

The methods used to determine the need for judges and support staff vary widely across the country. The different practices reflect alternative decision-making techniques among court managers and different information requirements and demands by legislative funding bodies. However, with tightening budgets at all levels of government, requests for additional judges or other court staff come under increasing scrutiny. “Gut feelings” or rising caseloads in and of themselves are not sufficient to address issues such as: What are the best factors for determining whether a new judge or more court support staff are needed? Is weighted caseload necessary? Will less staff be needed if court procedures are streamlined or technology added? Questions like these fuel the search for objective, independent procedures—that will be understood and accepted by decision makers in all three branches of government—for determining the need for court personnel.

This volume emphasizes three overriding objectives for viewing the alternative methods discussed within and for helping to distinguish the strengths and weaknesses of competing approaches. The assessment of the need for judicial and court support staff should use techniques that are *rational, credible, and practical*. The concepts discussed in this handbook are summarized in 12 guidelines, of which the first four, adapted from the Task Force Report, are designed to help frame and inform an assessment to determine the need for judges and court support staff.

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<sup>2</sup> Task Force on Principles for Assessing the Adequacy of Judicial Resources, *Assessing the Need for Judicial Resources: Guidelines for a New Process* (Williamsburg, Va.: National Center for State Courts, 1983).

*Rational.* The assessment technique should be objective, coherent, and explained with sufficient specificity to be replicated. In this context, the first guideline is relevant.

**Guideline 1** *The need for judicial and court support staff positions should be assessed against (1) measures of demand for service, (2) statewide standards of judgeship needs, and (3) effective use of existing resources.*

*Credible.* The assessment technique should be persuasive to judges, legislators, executive agencies, and other decision makers as well as to the public. Guidelines 2 and 3 address the issue of credibility of assessments.

**Guideline 2** *The number of judgeship and court support staff positions required should depend upon satisfying preestablished criteria. The criteria should be established by the state court administrative office prior to the analysis of need in any particular locality and should include consequences to the public if not adding judges or court support staff.*

No method of determining the need for judges and court support staff will be successful unless it is credible to judges themselves and to the legislature or local funding bodies. It is simply a waste of money for courts to embark upon a sophisticated methodology, such as weighted caseload or simulation, unless those decision makers are willing to accept the results of that analysis. That is why criteria must be established *before* any results are announced. Indeed, to be most effective, the methodology should explicitly include criteria that measure the impact of the *lack* of judgeships or court support staff on the public. For example, sparsely populated areas may need a judge and two court support staff, even if caseload figures do not fully justify the positions, just to provide reasonable access to justice.

**Guideline 3** *After a decision on judgeship and court support staff needs is made, the burden of proof for any modification should rest upon those advocating a contrary position, whether they be members of the judicial, legislative, or executive branches of government.*

*Practical.* Data and other information necessary to complete the analysis should be available as a part of normal case processing. Special data collection efforts should be minimized, and those that are deemed necessary should be cost-effective. Guideline 4 addresses the issue of practicality.

**Guideline 4** *Local courts should provide the data necessary to assess the need for judges and court support staff on a regular basis. Statutes or court rules should specify a clear set of definitions and the data elements required to produce the assessment measures.*

This guideline underscores the need for balance between the benefits of obtaining “all the data” that might be required to complete a valid assessment and the cost and burden of making the data collection onerous. The need for an awareness of parsimony in choosing a set of data elements is obvious, as is the need for having the data elements uniformly defined. Consequently, periodic audits of the data need to be incorporated into the judgeship needs determination process.

The approach recommended in this volume relies upon a quantitative analysis of the need for judges and court staff combined with a qualitative component. The quantitative criteria should *approximate* the need for judges and court support staff, and then these estimates should be tempered with more qualitative, court-specific factors that may differentially affect the need for judges and court support staff. In other words, a model should not be designed to include a large number of specific or unusual circumstances. No model, for example, could be expected to take into account the different work habits and styles of individual judges. In states where prisons or mental institutions are found in only one or two districts, the presence of prisons becomes an exception requiring adjustment rather than a permanent part of the general methodology. Criteria should be included in the model only when they become applicable to a large proportion of courts.

This framework realizes that *no statistical model in itself will provide definitive, incontrovertible results*. First of all, data must be interpreted to be useful.<sup>3</sup> Secondly, data must be interpreted within its social, cultural, and political context. Project staff, and especially members of the Project Advisory Committee, are not so naive as to believe that political judgments will not be important to the determination of judgeship and court support staff needs. For example, by what criteria can you deny a judgeship to the home district of the Speaker of the House? The approach recommended here, however, will provide ammunition to those who want to encourage a more rational and objective process of determining where judges and court support staff are most needed to serve the public.

One common way of undercutting the use of objective methods of determining judgeship and court support staff needs is to hold them to a higher standard of performance than other criteria. The fact that no methodology can determine with perfect accuracy the need for judges and, by extension, quasi-judicial officers, court support staff, prosecutors, and public defenders does not imply that judgeship needs models lack validity. This fact is mentioned at the outset to caution the reader against using *perfection* as the standard for evaluating methodologies discussed here, because by that standard, any approach will fall short. The standard used should be the extent to which any combination of quantitative and qualitative criteria is an improvement over the current methods for determining

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<sup>3</sup> In Kritzer’s words, “Data seldom speak unless asked.” Herbert M. Kritzer, “The Nature of Interpretation in Quantitative Research,” *American Journal of Political Science*, Vol. 40 (February 1996), p. 4.

judgeship and court support staff needs. By this method of continuous, incremental improvement, the level of service to those who use the courts will improve.

## Chapter II

### Current Criteria for Assessing the Need for Judges and Court Support Staff

States use a variety of criteria to assess the need for judges. Measures range from work to do (filings) to work already completed (dispositions) to factors that are thought to produce future work (population). Far less thought and experimentation have occurred in developing measures to assess the need for court support staff. This chapter provides an overview and critical summary of the factors currently used to determine the need for judges and introduces the dilemma of extending the analysis to include court support staff.

#### CURRENT MEASURES OF JUDICIAL NEED

Table 1 shows the criteria each state used to determine judgeship needs in 1995.<sup>4</sup> Criteria used most frequently are not necessarily the best. In some instances, the use of multiple criteria, though having the aura of objectivity, are so flexible that they do not provide sufficient guidance to decision makers.

#### Case-Related Indicators

##### *Case Filings*

Filings represent the need for court services directly because they are least likely to be affected by the current allocation of judges.<sup>5</sup> As filings increase beyond a certain level, additional judges will be required if the current level of service is to be maintained. Almost all states use filings in some form as an indicator of the need for judges (see Table 1). Forty-five states use raw case filings as an indicator of the need for judgeships, 40 states use filings per judges, and eight states measure filings per population. Accordingly, only three states do not explicitly use filings in their measures of judgeship needs.

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<sup>4</sup> For a summary of the factors used previously in the states, see p. 55 of the Task Force Report. This survey was updated to 1989 by Kenneth G. Pankey, Jr., "Factors Used to Assess the Need for Judicial Resources" (IS 89.1919, November 14, 1989.) See also B. Hoffman, *Determination and Justification of Judgeship Needs in State Courts* (Courts Technical Assistance Monograph No. 4; American University Criminal Courts Technical Assistance Project, 1981), and C. Manning, *Judgeship Criteria: Standards for Evaluating the Need for Additional Judgeships* (Chicago: American Judicature Society, 1973).

<sup>5</sup> This assumes, of course, that cases are counted in a uniform and consistent fashion.

### ***Active Pending Cases***

One direct measure sometimes used as a criterion to determine judgeship needs is the inventory of pending cases. Twenty states use the total number of cases pending as a criterion (Table 1). Actually, instead of all cases pending, cases that are *actively pending* and require judicial attention should be the criterion, because the former includes situations in which the defendant has not been located, is in prison, is in a hospital or mental institution, or is otherwise unavailable for court. Growth in the active pending caseload may indicate a need for additional resources, but not necessarily, because judges have some control over the size of their court's active inventory of pending cases. An inventory of active pending cases can increase if judges have too much work, but also if judges are not managing their available time effectively.

Variations on the measure of pending cases include cases pending per judge (14 states), the number of cases filed and pending per judge as a measure of the total caseload faced by judges (13 states), and cases filed and pending per population (Pennsylvania and Utah). All together, 20 states use pending cases in one form or another to determine the need for judges.

Twenty-one states use case backlog as an indicator of the need for judges, and 12 of these use backlog in conjunction with cases pending. One measure of backlog is simply the difference in the number of cases pending at the beginning and at the end of each reporting period. This measure indicates a growth or decline in caseload inventory.

### ***Number of Dispositions***

Dispositions suggest the amount of work being done by judges now on the bench. If the disposition rate increases, however, is it the result of more work done by judges, additional efforts by the bar to settle cases, "docket cleaning" done by clerical staff, or a combination of all three? Similarly, one cannot necessarily attribute decreases in dispositions to decreased judicial activity as opposed to other factors; for example, changes in procedures or an influx of more complex cases that require greater amounts of judicial time.<sup>6</sup> Because of these ambiguities, dispositions do not offer clear guidance on the need for judgeships.

Perhaps for that reason, 18 states have ceased to use dispositions or dispositions per judges as indicators of the need for new judgeships, while only one state has added dispositions as an indicator in the ten years since the Task Force Report was written. Nevertheless, dispositions are often used in combination with other measures to determine the relative need for judges within states. Table 1 reveals that 28 states use dispositions as an indicator of the need for judgeships. Moreover, 23 states use dispositions per judge and four states use dispositions per population to measure the relative need for judges within states. Taken together, 28 states use either dispositions or dispositions per judge as an indicator of the need for judges.

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<sup>6</sup> Task Force Report, op. cit., p. 14.

**Table 1: Use of Case-Related Indicators to Determine Judgeship Needs\***

States	Weighted Caseload	Cases Filed	Filings/ Judge	Dispo- sitions	Dispos./ Judge	Case Backlogs	Cases Pending	Case Types	Number of Jury Trials	Time Stds. Not Met	Pendings/ Judge	Jury Trials/ Judge	Filings & Pends./ Judge	Case Types/ Judge
Alabama	D	x	x	x	x		x	x	x		x			x
Alaska	D	x	x	x	x	x		x	x		x			
Arizona						x								
Arkansas	D	x	x					x	x	x		x		x
California		x		x		x	x	x	x	x				
Colorado	W	x	x						x			x		
Connecticut		x				x	x	x	x	x				
D.C.		x	x			x								x
Delaware		x	x	x	x	x	x			x	x		x	
Florida	D	x	x	x	x	x	x	x	x	x	x	x		
Georgia	D		x			x					x	x		x
Hawaii		x		x	x	x	x	x	x	x		x	x	
Idaho		x	x	x	x		x			x				
Illinois														
Indiana		x	x	x		x	x		x			x		x
Iowa		x												
Kansas		x	x	x	x	x			x				x	
Kentucky		x	x	x	x									
Louisiana	D	x	x			x		x	x	x		x		x
Maine		x	x	x	x	x							x	
Maryland		x	x	x	x		x				x			
Massachusetts		x												
Michigan		x	x	x	x			x	x			x		x
Minnesota	W	x		x				x						
Mississippi			x			x							x	
Missouri	W	x	x	x				x						
Montana		x	x											
Nebraska	W	x	x	x	x			x	x			x		x
Nevada														
New Hampshire		x	x											
New Jersey		x	x	x	x	x	x	x		x	x		x	
New Mexico	W	x	x					x						
New York		x	x	x		x	x			x	x		x	
North Carolina	D	x	x					x						x
North Dakota		x	x											x
Ohio		x	x		x		x		x		x	x	x	
Oklahoma		x	x	x		x	x		x	x	x			
Oregon		x	x	x	x			x					x	
Pennsylvania		x	x	x	x	x	x	x	x		x	x	x	x
Rhode Island		x				x	x			x				
South Carolina		x	x	x	x		x			x				
South Dakota		x	x	x	x				x					
Tennessee		x	x	x	x		x				x		x	
Texas		x	x				x					x		
Utah		x	x	x	x	x	x	x	x	x	x	x	x	x
Vermont		x	x											
Virginia		x	x	x	x		x	x	x		x	x		
Washington	W	x	x	x	x									
West Virginia		x	x	x	x	x		x						x
Wisconsin		x												
Wyoming			x										x	
<b>Number of States Using Indicators</b>		45	40	28	23	21	20	20	19	14	14	14	13	13

\*Indicators used by fewer than ten states are not shown on this table.

Key: Weighted = W Delphi = D



### ***Manner of Disposition***

Obviously, jury trials require more judge time than dismissed or settled cases. Nineteen states use the number of jury trials as one indicator of judgeship needs, and 14 determine the relative need for judges within states by using jury trials per judge. (Utah also considers jury trials per population.)

### ***Case Processing Time***

The time it takes to process cases is clearly an important measure of court performance. Case processing time standards have been established for most types of cases by both the American Bar Association (ABA) and Conference of State Court Administrators (COSCA).<sup>7</sup> Because these time standards provide an objective goal for courts to use in assessing court workload, it is not surprising to see measures of court delay used in judicial needs assessment.

Case processing time is defined as the time between the filing of a case and its disposition. There is intuitive appeal to the notion that additional judges will decrease the average time it takes to dispose of a given caseload. By directly linking the number of judges to a court performance outcome, policy makers can decide how to balance the benefits of faster case processing times against the costs of additional judges. To estimate judgeship needs, Maryland uses a combination of case processing times for criminal, civil, and juvenile cases (along with other measures, such as the ratio of filings to judges, population to judges, and attorneys to judges). Fourteen states use the number of cases exceeding established standards as a measure of delay and consequently as a manifest indicator that more judges are required (see Table 1).

The Task Force Report included explicit recognition of case processing time.

Statewide standards against which need is tested should include the following:

- a. median and 90th percentile time in days or months from the initiation of a proceeding to its conclusion,<sup>[8]</sup> with separate standards for different case types;
- b. median and 90th percentile number of days between a request for trial, or other indication of readiness for trial by the parties, and the start of trial, by case type;
- c. number of cases and percent of the total active pending caseload, by casetype, in which more than *X* months or years have elapsed since initiation;
- d. ratio of dispositions per year to filings per year; and

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<sup>7</sup> “National Time Standards for Case Processing” brochure. Also reported by Frederic Melcher, “Setting Time Standards,” *The Judges’ Journal*, Vol. 23, No. 1 (1984), p. 48.

<sup>8</sup> Initiation of a proceeding is usually filing, but some courts do not open a file on the case until an “at issue” memo or certificate of readiness is filed. See Barry Mahoney et al., *Changing Times in Trial Courts* (Williamsburg, Va.: National Center for State Courts, 1988), p. 14.

- e. number of months required to dispose of the active pending inventory of each case type.

Courts whose data indicate an increasing need for new positions should be able to demonstrate that their need is increasing despite implementation of administrative and procedural changes designed to reduce or avoid the need for new judgeships.<sup>9</sup>

Furthermore, Standard 2.1 of the Trial Court Performance Standards Project of the National Center for State Courts (NCSC) suggests the use of “recognized guidelines for timely case processing” as one of the key measures of court performance.<sup>10</sup>

Case processing measures are attractive because they are concerned with the impact on the public served by courts. The California Administrative Office of Courts uses this as a guideline: “A court needs additional judgeships when the efficient use of available resources cannot meet demand in a timely manner.”<sup>11</sup>

There is some need for caution however, when using case processing time as a criterion for determining judgeship need. First, time to disposition may not improve as much as expected after new judges are added, especially if the added time available is used to improve the quality of decision making rather than to decide more cases.<sup>12</sup> Second, the effort expended by each judge on the bench can affect the pace of litigation in their court. Unless all judges are working with the same intensity, pace need not be a direct measure of the need for judgeships. For these reasons, this handbook urges caution in using case processing times to determine the need for new judges directly, but acknowledges that additional judges may result in improved case processing time. Note that the additional judgeships need not be permanent. If the existing number of judges are able to dispose approximately as many cases as were filed each year, perhaps senior judges, or judges transferred from neighboring districts, can be used to clear the backlog of cases.

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<sup>9</sup> Task Force Report, op. cit., Guideline 6, p. 6.

<sup>10</sup> *Trial Court Performance Standards with Commentary*, op. cit., pp. 2-3.

<sup>11</sup> Advisory Committee on Court Profiles, “Proposed New Judgeship Needs Determination Methodology,” unpublished report (San Francisco: Administrative Office of the Courts, February 1993), p. 11.

<sup>12</sup> Task Force Report, op. cit., p. 16; L. Sipes et al., *Managing to Reduce Delay* (Williamsburg, Va.: National Center for State Courts, 1980), pp. 123-27; T. Church, Jr. et al., *Pretrial Delay: A Review and a Bibliography* (Williamsburg, Va.: National Center for State Courts, 1978), pp. 22-24; J. Goerdt et al., *Reexamining the Pace of Litigation in 39 Urban Trial Courts* (Williamsburg, Va.: National Center for State Courts, 1991). See also J. Goerdt, *Examining Court Delay: The Pace of Litigation in 26 Urban Trial Courts, 1987* (Williamsburg, Va.: National Center for State Courts, 1989), which also found that filings and dispositions per judge were not related to case processing time.

## Non-Case-Related Criteria

Several states consider criteria for determining the need for judgeships that are not directly case-related (see Table 2). These criteria are attractive precisely because they are not based upon measures that can be affected by judicial actions, but are strong indicators of increasing workload or are closely tied to the future flow of work entering the courts.<sup>13</sup>

### *Use of Outside Judicial Assistance*

Fifteen states examine a court's use of retired judges or judges from other localities to determine whether new judges are needed. If assistance is required because of an extended illness, the assignment of other judges may not be significant. However, the regular use of outside assistance is a possible indicator of the need for judges. In the years since the first Task Force Report, 20 states have dropped the use of senior judges as a criterion for determining the need for judgeships.

### *Population Size or Growth*

Population is an attractive indicator of judgeship need because it is objective and easy to understand. With more people, there are more cases. On the other hand, this indicator lacks precision. Courts with similar populations may have very different caseloads because of differences in economic conditions, court-related legislation, or court procedures (e.g., use of alternative dispute resolution techniques). Thirty-seven states use population as a criterion for judgeship determination. Of the 34 states that consider population size when determining the need for judges, 28 consider population growth and ten use population density as well. (Three states consider population growth but not population size.) In Iowa, for example, one judgeship is allocated per 550 combined civil and criminal filings in judicial election districts containing a city of 50,000 or more people. Other districts are entitled to one judgeship per 450 filings or 40,000 people. The Arizona constitution contains a formula that authorizes the Superior Court, the court of general jurisdiction, to one judge per 30,000 residents. Typically, the relationship between population size and court case filings is so close that they are indeed surrogates for each other. Nevertheless, even with this close relationship, estimates of filings based on population vary enough to change the rank order of some judicial circuits or districts.<sup>14</sup> The potential of combining filings with population to produce a combined index of judgeship needs is discussed in Chapter IX.

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<sup>13</sup> The Task Force Report called these surrogate measures, except for the use of outside judicial assistance, which was called an indirect indicator of the need for judges.

<sup>14</sup> See, for example, Victor E. Flango, "Assessment of Judicial Needs in West Virginia," unpublished report (Williamsburg, Va.: Southeastern Regional Office, National Center for State Courts, January 30, 1991).

**Table 2: Use of Non-Case-Related Criteria to Determine Judgeship Needs\***

States	Population Size	Population Growth	Judges' Travel Time	Use of Re- tired/ Senior Judges	Number of Attorneys	Population Density
Alabama	x	x	x		x	x
Alaska	x	x				
Arizona	x					
Arkansas		x	x			
California						
Colorado	x	x	x	x	x	
Connecticut	x	x		x		x
D.C.						
Delaware					x	
Florida			x	x		
Georgia	x	x		x	x	
Hawaii	x					
Idaho	x	x	x		x	
Illinois	x	x	x			x
Indiana	x	x	x			x
Iowa	x					x
Kansas	x					
Kentucky	x	x	x			
Louisiana			x			
Maine	x	x			x	x
Maryland	x	x		x	x	
Massachusetts						
Michigan	x	x	x			
Minnesota			x			
Mississippi	x	x				
Missouri	x	x	x			
Montana	x		x			
Nebraska	x	x	x			
Nevada						
New Hampshire	x					
New Jersey			x			
New Mexico	x	x	x			x
New York		x			x	
North Carolina	x					
North Dakota	x	x	x			x
Ohio	x	x	x**	x	x	
Oklahoma	x	x	x	x		
Oregon		x	x	x		x
Pennsylvania	x	x		x	x	
Rhode Island						
South Carolina	x	x		x		
South Dakota	x	x	x			
Tennessee	x	x	x	x		
Texas	x		x	x	x	
Utah	x	x	x	x	x	x
Vermont						
Virginia	x			x		
Washington						
West Virginia	x	x	x	x		
Wisconsin						
Wyoming						
<b>Number of States Using Indicators</b>	34	28	25	15	12	10

\*Indicators used by fewer than ten states are not shown on this table.

\*\* Ohio appellate only.

### *Number of Attorneys*

The number of attorneys correlates highly enough with both population and with total case filings to be yet another surrogate measure of need for judicial services. Attorney data may substitute for data on filings or population only if these data are unavailable or unreliable. Twelve states use number of attorneys as one of the criteria for determining the need for new judgeships.

### *Travel Time*

Twenty-five states use the time it takes to travel to court as one criterion for judgeship needs, but the use of this criterion is declining. A judge that must spend an hour and a half of the business day on the road traveling between courts does not have the same time available to dispose of cases as a judge who works solely in one court. Travel time may be even longer during the winter months. One way to adjust for travel time is to subtract it from the judge time available to hear cases (see Chapter III).

## **WEIGHTED CASELOAD**

This handbook recommends weighted caseload as the best method for assessing judicial need. The importance of this topic warrants a separate discussion in the chapters immediately following this one. Colorado, Minnesota, Washington, and Wisconsin have a history of developing case weights by measuring the time it takes to complete discrete activities for each type of case. This approach was recently adopted by New Mexico and Nebraska in the development of their weighted caseload systems. A hybrid of the traditional weighted caseload approach uses the Delphi technique to estimate the time it takes to complete specified case activities (see Chapter VII for a complete discussion of the technique). Delphi requires judges (or other experts) to estimate the amount of time various cases take rather than actually measuring time spent on each activity. States using the Delphi method of determining judgeship needs are Alabama, Arkansas, Georgia, Louisiana, Maryland, and North Carolina (limited jurisdiction courts only). Delphi is also used in Florida, but only as one of the aggravating or mitigating factors, not as the primary method of determining judgeship needs. Washington state is currently experimenting with a simulation model to be used in tandem with weighted caseload.<sup>15</sup> California, the originator of the weighted caseload methodology, has moved away from this technique in favor of a simulation methodology that uses a larger number of variables to measure judicial need and incorporates continuous data collection through sampling.<sup>16</sup>

## **INDICATORS IN COMBINATION**

States use measures in combination to assess the need for judges. Louisiana, for example, relies upon a Delphi-based weighted caseload system (see Chapter VII), but uses it with other indicators—namely, case delay (when the requests for a trial must be placed on the docket eight months in ad-

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<sup>15</sup> See Chapter VIII for a discussion of simulation models used in California and Washington.

<sup>16</sup> Advisory Committee on Court Profiles, “Proposed New Judgeship Needs Determination Methodology,” unpublished report (San Francisco: Administrative Office of the Courts, February 1993).

vance) and the amount of judicial effort (as measured by a peer review and the number of judge days worked). Georgia also uses a Delphi-based weighed caseload to establish a “threshold” (1,500 weighted caseload filings) of need for Superior Court judges.<sup>17</sup> If this threshold is met, additional criteria are used to determine whether judges are requested. These additional criteria include: filings per judge, growth rate of filings per judge, open cases per judge, backlog per judge, populations served per judge, population growth, number and types of supporting courts, availability of senior judges, number of resident attorneys. Finally, responses to letters to legislators, county commissioners, presidents of local bar associations, district attorneys, and clerks of superior court are considered. Utah relies not only on caseload indicators and population growth projections, but also on local opinions to determine severity of need. These opinions can be confirmed by such measures as how far into the future hearings and trials are set. Colorado considers an increase whenever a district passes a threshold based upon weighted caseload. After the threshold of 90 percent need for one full-time judge is passed, other criteria are considered, including case mix, number of jury and court trials, use of senior or visiting judges, number of active attorneys per judge, population per judge, and other special circumstances that might affect workload.<sup>18</sup>

## **CURRENT MEASURES OF COURT SUPPORT STAFF NEEDS**

Judicial productivity, and hence the need for new judges, depends substantially on the effectiveness of trial court support staff. Without the proper type and level of support, judges may be performing some tasks that could be delegated to qualified support staff or may be performing other tasks less efficiently. The newly revised ABA Standards Relating to Court Organization state: “The importance of capable and efficient professional assistance for an effective court system is second only to the importance of having competent judges.” Despite this need, a 1989 NCSC management review found:

Workload standards used to assess the need for non-judicial employees have been underdeveloped in courts throughout the United States. Workload standards have also consumed considerable time in their development when attempted by the courts and too often have been deemed to be obsolete upon completion or implementation.<sup>19</sup>

Little has changed since then.

An accurate estimate of the need for new judgeships, not to mention a credible assessment of overall court resources, must take the availability of court support staff into account. Without a methodology for assessing explicitly the need for support personnel, the criteria for creating or allocating judicial positions may be misleading, especially if the criteria for measuring judge need are *different*

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<sup>17</sup> Private correspondence from Holly K. O. Sparrow, Assistant Director for Research, Administrative Office of the Courts, provided policy of the Judicial Council of Georgia, dated February 20, 1996.

<sup>18</sup> The State Court Administrator's Committee on Weighted Caseload Goals, “Assessing the Need for Additional Judges in Colorado,” unpublished report (Williamsburg, Va.: National Center for State Courts, July 19, 1991), p. 14.

<sup>19</sup> Frederick G. Miller et al., *Management Review of the Clerk's Office, Circuit and County Courts, Eleventh Judicial Circuit of Florida* (Williamsburg, Va.: National Center for State Courts, September 1989).

from the criteria for determining the need for court support personnel. An accurate measure of resource need should integrate the work of judges and support staff. For example, an optimal methodology would distinguish between the creation of one new judicial position in the family division that requires the addition of four new clerks and the creation of another judge in the felony division that requires no new support personnel. In short, to be most effective, the methodology should determine the need for judgeships and the need for court support staff together.

This is no easy task. In a very real sense, it is not possible to separate court support staff from what courts do. Steadman and Murphy remark that “adequate staff levels tend to promote, and inadequate staff levels tend to impede, high levels of court performance” because the services of court support staff benefit not only judges, but the bar, litigants, and the public as well.<sup>20</sup>

Given this handbook’s emphasis on examining the relationship between the need for judges and the need for court support staff, it is encouraging to note that Arkansas, Colorado, Michigan, Ohio and West Virginia take the number of court support personnel into account when assessing the need for judgeships.

Without an objective method of determining the need for court support staff, personnel are allocated on the basis of staffing requests, often to meet short-term needs. In time, lack of stated criteria can lead to discrepancies between staffing needs and allocations across courts and court divisions. Validated standards based upon workload indicators must be consistently applied within states to promote equity in the allocation of resources. This is especially critical in a time of scarce resources and high public demand for performance and accountability.

## **RELATIONSHIP BETWEEN JUDGESHIP NEEDS AND COURT SUPPORT STAFF NEEDS**

Criteria used to measure the need for trial court judges are often inappropriate measures of the need for support staff. Indeed, the relationship between the need for judges and court support staff may be inverse, that is, increased filings of some types of cases may require additional judges but no new support staff, and vice versa. In some types of cases in which information is supplied to judges by advocates for each side, increased caseloads translate directly into a need for additional judges. In other types of high-volume cases, increased caseloads require more support staff but no additional judges. Moreover, support staff work has different components than work done by judges. For example, clerks and support staff must maintain records, record testimony, and conduct other activities that have no judicial equivalent. Courts in small counties may require a minimum number of staff just to keep the court open, regardless of caseload. Conversely, courts in large counties may require supervisory positions to handle the larger staffs required by larger caseloads.

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<sup>20</sup> Steven R. Steadman and Kathleen M. Murphy, “Analysis of Court Support Staffing Levels in Wisconsin,” unpublished paper submitted in partial fulfillment of Court Executive Development Program requirements of the Institute for Court Management (May 17, 1991), p. 4.

While some thought has been given to criteria needed to assess the need for judges, no comparable methodology has been available to determine the optimal blend of court support staff necessary to make case processing most efficient and judges most productive. Few states have explicit criteria for determining the need for court support staff,<sup>21</sup> but latest practices are discussed in Chapters VI and VII. This research picks up the challenge of finding the proper combination of judges and court support staff that best addresses different types of cases and makes optimal use of court resources to serve the public.

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<sup>21</sup> For exceptions to this rule, see the California Administrative Office of the Courts, *1981 Nonjudicial Weighted Caseload Study for Municipal and Justice Courts* (1983). Carroll Edmondson of the North Dakota State Court Administrator's Office developed evaluation criteria for assessing nonjudicial personnel needs in an April 1986 report prepared to fulfill certification requirements for the Institute for Court Management's Court Executive Development Program. See also *New Jersey In-Court Personnel Survey* (Williamsburg, Va.: National Center for State Courts, 1984), Section IV.



## Chapter III

### Overview of Weighted Caseload

#### CASELOAD TO WORKLOAD: ADVANTAGES OF WEIGHTED CASELOADS

Concern with financial and resource accountability at all levels of government is a strong stimulus to develop systematic methods for assessing the need for judges and support staff. The traditional—and arguably most valid—approach for assessing personnel needs is a weighted caseload study. Weighted caseload is essentially a technique for determining how much time is required to process a given court’s caseload from filing to disposition. The allure and promise of weighted caseload has led numerous courts to experiment with various approaches over the years and has resulted in varying levels of success. The purpose of this section is to draw upon the lessons learned over the past 30 years, the successes and shortcomings, and to outline an efficient, workable process for conducting a weighted caseload study.

Simply stated, weighted caseload is used to translate court caseload into workload. Cases vary in complexity, and different types of cases require different amounts of time and attention from judges and court support staff. Weighted caseload has several advantages over other methods to assess need for resources. First, weighted caseload analyzes the “mix” of case filings rather than the total number of filings. Merely summing the total number of cases filed is not a good indicator of the amount of time it will take to dispose of that caseload. In the absence of explicit case weights, *all* cases, whether uncontested divorces, felonies, product liability suits, or traffic offenses, are counted equally, or, in other words, given a weight of one. Focusing on case counts without assessing the differences in work means that 1,000 uncontested traffic cases are equivalent to 1,000 felony cases. Yet, it is universally acknowledged that some types of cases (e.g., asbestos cases and other mass tort actions) are just more burdensome than other cases. Because unweighted cases are not directly tied to workload, they offer only minimal guidance for estimating the need for judges and court support staff. Therefore, an estimate of the amount of work to be done is a precondition to estimating the need for resources. Weighted caseload provides an explicit process for shifting the emphasis from caseload to workload.

Raw case counts offer little help in distributing the workload equitably among judges, quasi-judicial staff, and court support staff. Court managers know that a serious felony case will typically require more judge time than a minor traffic violation and that a medical malpractice jury trial demands more judge time than a small claims case. But how much more? What if quasi-judicial staff are used to handle all or part of particular cases in some locations, but not in others? The workload information provided through weighted caseload offers an effective means to allocate cases (and work) evenly among all court staff.

This benefit of weighted caseload is less important for courts whose constrained jurisdiction means that they hear an equivalent mix of cases. For example, certain courts of limited jurisdiction

may have little variability in the complexity of their cases. In those courts, case mix is, in effect, held constant and the raw, unweighted measures of caseload distribute the workload rather equitably. Courts with jurisdictions that range from ordinance violations to product liability cases, however, need some sort of weighting scheme both to estimate the amount of time necessary to clear the dockets and to equalize the workload among judges and court support staff.

Judges can legitimately disagree on the “proper amount of time” that should be spent on a case. Is an hour on a minor misdemeanor about right? too long? too short? Weighted caseload figures provide the springboard for identifying practices that affect case processing time. The weights also offer valuable baseline information for “quality of justice” discussions. For example, knowing how long an initial appearance actually takes is a central ingredient for (1) determining how much additional judicial time would be required to expand the process or (2) assessing the merits of reading of rights to an individual accused versus reading rights to a group of people.

Furthermore, weighted caseload provides an objective means to measure relative need for judges and court support staff in judicial districts of different sizes. In addition to differences in the mix of cases, the weighted caseload approach can help account for other workload-related factors, such as the amount of time available each day to hear cases, that may vary between courts within a given state. For example, judges in rural, multi-county circuits may have to spend an hour or more per day in travel, which reduces the time available to hear cases. Urban judges may have their case processing time availability reduced by their administrative responsibilities. The size of courts may also affect the types of practices and procedures that economies of scale make possible.

Finally, weighted caseload offers a way to integrate measures for assessing the need for decision makers other than judges. Indeed, this handbook will illustrate how the weighted caseload technique can be used to determine the optimum mix of judges, quasi-judicial officers, and court support staff necessary to meet the demands of caseload.

In sum, this handbook considers weighted caseload to be a singularly valid means to estimate the need for new judgeships and court support staff. This view is consistent with the perspective advanced in Guideline 5.

**Guideline 5**     *The best direct measure of demand for judges and court support staff is the number of weighted filings, tempered by qualitative considerations.*

## **LIMITATIONS OF WEIGHTED CASELOADS AND POSSIBLE REMEDIES**

If the weighted caseload technique has so many advantages, why are not all states using this method for determining the need for judgeships? While many states have experimented with weighted caseload, some approaches have failed for reasons including inadequate data, expense, and problems with keeping the weights current. Being cognizant of these potential difficulties at the outset improves the likelihood that countermeasures can be developed and implemented. The criticisms outlined below are the ones most often noted and the ones most applicable to weighted caseload techniques in general.

### **Data Collection Is Burdensome**

Obtaining the cooperation necessary to accurately track time is at the heart of weighted caseload. To be blunt, conducting a time study requires an additional layer of effort for judges and staff who may already feel overworked. Also, a common preconception is that judges resent having to “account” for their time and may also fear that the data will be used improperly. Therefore, a critical first step for garnering judicial and staff support is to clearly articulate at the outset the process and benefits of weighted caseload. Cooperation increases directly with perceived benefit.

Every effort should be made, however, to reduce the burden of data collection. The object is to gather just enough information to make valid estimates of workload—but not more will be used in the analysis. For example, minimize the period that judges or staff are asked to record their time. As discussed in the next chapter, this requires measuring the time it takes to process the primary events that make up particular cases (e.g., arraignments in felony cases). By monitoring the time logs on a regular basis, the analyst will know when sufficient data has been collected on each event and, of equal importance, when the participants can stop tracking their time on particular activities. Samples of high-volume events (such as preliminary hearings in misdemeanor cases) can be obtained quickly, leaving judges or support staff to complete time logs on only the rarer events (e.g., jury trials). For judges who do not want to account for how each day is spent, this approach offers the associated benefit of monitoring only samples of selected events, rather than accounting for how judges spend their days.

Another technique for judges in high-volume courts is to track time directly on the docket sheets rather than separate data collection forms. For example, if a judge is working from a docket that lists 20 arraignments, only the total time, say two hours, needs to be recorded. An additional possibility arises in states, such as Alaska, that use audio recording and can therefore measure the time spent per case activity from the audio tape. Additional shortcuts to reduce the burden of data collection are discussed in Chapter X.

### **Weights Are Difficult to Keep Current**

Once weights have been established, it is critical that the weights be adjusted and updated to ensure that they continue to accurately represent workload. There is no faster way for hard-won credibility to erode than for the weights to be viewed as obsolete. Keeping the weights current, however,

means expense. Given the cost and effort necessary to initially establish the weights, updating must not imply redoing the study from scratch. Instead, the updating process should, to the largest extent possible, be based upon low-cost data collection techniques. The best approach is the periodic monitoring of weights through samples of case events. Very small samples can be taken, primarily to determine if there are any significant changes in the time it takes to obtain specific case activities. Only if there has been a dramatic change will it be necessary to conduct a full sample from a representative set of counties; even then the sample can be confined to a specific set of activities. There would be no implication that all cases and activities were being tracked. Indeed, for states with automated systems, specific screens could be developed for collecting time information on particular events and case types. These screens could be “masked” the vast majority of the time, appearing only when an update is underway. Further, if these periodic updates are conducted only on selected case events in only a few courts at a time and are rotated around the state the burden of data collection could be greatly reduced.

### **Case Weights Enshrine Inefficiency**

An underlying goal of case weights is to measure not just workload, but work done in an efficient manner. From this perspective, case weights should be realistic and, to a degree, aspirational. If the weights simply codify current practice, whether it be sound or not, the weights lose credibility. One response to the criticism that weights merely enshrine inefficiency is to collect data from only the most productive courts (as defined by the state court administrator’s office) and well-managed courts (those whose case processing times are above the statewide average). Again, the caveat must be made that efficiency be consistent with the fair and just resolution of cases. The goal is to encourage the most expeditious resolution of cases consistent with justice.

### **Weights Are Based on Inaccurate and Inadequate Data**

Complaints about invalid data are to be expected. Consequently, it is necessary to build audits into the system to ensure that individuals tracking the time it takes to complete particular activities are measuring the same thing. Those conducting the weighted caseload study should visit each participating site to explain the process and answer questions. These site visits are also an opportune time to determine whether the participating courts count cases the same way and use similar terminology (e.g., an initial appearance means the same thing in each court). A complete set of written instructions should be prepared and reviewed with participants in each court prior to the study.

Inevitably the weights will be criticized because the case types used are not specific enough to determine the exact number of judges needed to stay current with caseloads. However, no quantitative model on its own can accomplish this goal. Instead, the posture adopted here is that quantitative criteria should approximate the need for judges or staff, and then the estimates should be tempered with more qualitative, court-specific factors that may differentially affect the need for resources. In the real world, there must be a balance between accuracy of data required for decision making and the cost of data collection.

## **Pending Cases Are Not Considered**

Unless existing pending caseloads are included in a weighted caseload system, courts will not receive the judgeships needed to eliminate the backlog, and so the court is never current. There is no statistical reason not to apply weights to the pending caseload, and then bring in the temporary judicial support necessary to clear the backlog. Of course, all the caveats discussed in Chapter II related to use of pending cases would be relevant.

## **Statewide Averages Are Unfair to Small Counties**

As noted above, case weights reflect the typical or average time necessary to process a given case. In California, a serious criticism was that the averages are driven by practices of the Los Angeles courts, because any sample of cases will include a large number of cases from the state's largest city.<sup>22</sup> One solution to this problem has been to use a separate weight for the largest city in the state. A better solution is to determine exactly where the differences lie and whether they are significant enough to merit separate case weights related to size. By selecting courts of different size (e.g., small, medium, and large) to participate in the development of case weights, the analyst can explore the extent of differences based on court size. In many instances there will be essentially no differences among the groups, while some form of weighted average may suffice when significant differences do occur. This process is discussed in more detail in Chapter V. Another option may involve adjusting the judge time available for non-case-related administration or travel.

## **Fractional Judgeships May Result**

Weighted caseload, as well as most statistical models of the need for judges or court support staff, results in estimates of a need for fractional judgeships. For example, what if the best estimates show that a one-judge court needs the equivalent of one and one-half judges to efficiently process existing caseloads? The impact of a chronic fractional shortfall will be more severe for smaller courts because they cannot distribute the work among many judges. The solution to the problem may be to develop a sliding threshold based on court size. For example, the one-judge court that is estimated to need 1.5 judges will receive priority over the six-judge court that is estimated to need 6.5 judges. Other options include increasing the use of senior or retired judges, making better use of quasi-judicial officers and court support staff, or assigning judges temporarily across districts.

## **CONCLUSION**

If this review of the rationale for and the limitations of the weighted caseload technique has had the desired effect, the reader's appetite for learning more about the strengths and weaknesses of this technique has been stimulated. The next chapter will discuss how to conduct a weighted caseload study to determine the need for new judgeships, while Chapter V looks at some techniques to integrate quasi-judicial officers into the analysis and to evaluate whether courts of different sizes require

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<sup>22</sup> Administrative Office of the Courts, *Proposed New Judgeship Needs Determination Methodology* (San Francisco, Calif.: February 1993).

different weights. Chapter VI applies weighted caseload techniques to assessing the need for court support staff, and Chapter VII discusses the Delphi technique of weighting caseload.

## Chapter IV

### Weighted Caseload Study for Judges

This chapter offers a step-by-step introduction to conducting a weighted caseload study. The discussion focuses on determining the need for judges, because this is the area where weighted caseload is most highly developed. Adaptation of the technique to accommodate quasi-judicial officers and court support personnel is discussed in Chapters V and VI.

A weighted caseload study is essentially the response to these two questions:

1. How much judge time, on average, is required to hear each type of case?
2. How much time does a typical judge have available for hearing cases?

In a nutshell, the number of judges required is determined by dividing the amount of judge time needed to hear all cases by the time judges have available to hear cases.<sup>23</sup>

#### THE PROCEDURE

The following steps outline the process for conducting a weighted caseload study.

1. Select the sample of counties, cases, and case events to include in the study.
2. Determine the number of court events required to process each type of case.
3. Calculate the average amount of judge time per event.
4. Determine the average frequency of occurrence for each event in each type of case.
5. Multiply the average amount of judge time per event by frequency of occurrence to create a “task weight” for each type of case.
6. Multiply the number of each type of case filing by their respective weights to arrive at the total amount of time spent on filings.
7. Determine the amount of judge time available to process cases.
8. Divide the total amount of time required to process the anticipated number of case filings by judge time available.

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<sup>23</sup> Harry O. Lawson and Barbara J. Gletne, *Workload Measures in the Court* (Williamsburg, Va.: National Center for State Courts, 1980), p. 51.

## Step 1: Select the Sample

The confidence in conclusions drawn from any research depends on the adequacy of the sample taken. If chosen properly, a sample will closely approximate the information derived from a study of all cases from all counties.

### *Sampling Sites*

Sample selection involves selecting a set of courts, court districts, or circuits for analysis and then determining the variety of case types and case events. Obviously, the most straightforward strategy would be to draw a random sample from all courts, but this is expensive and unnecessary. It is possible to get the same results as a statewide sample, at a much lower cost, by choosing a representative sample that is stratified to ensure that large, medium, and small counties are represented.

Some criteria for site selection include the following.

***Geographic diversity.*** The types of cases filed in court are likely to differ in rural and urban areas. A weighted caseload study should determine whether urban counties have a different case mix than smaller, more rural counties and whether the differences are sufficient to justify separate weights. Indeed, it may be necessary to have courts in some rural areas, where filings alone may not demonstrate the need for a full-time judge, just to provide the local population reasonable access to courts. Moreover, it may be that judges in urban courts spend their time differently than judges in more rural areas. Finally, case processing procedures may vary between large and small courts.

***Size of court.*** Closely related to geographic diversity, size is operationally defined here as number of judges. Multi-judge courts may require judges to spend more time on administrative and coordination activities, whereas single-judge courts in rural areas require judges to spend more time traveling. Stratification by size of court ensures that all courts are represented in the sample, and thus permits the results of this research to be generalized to the entire state.

***Case processing time.*** One recurring criticism of weighted caseload systems is that they simply institutionalize inefficiency by documenting the status quo. The average time required to process cases will be greater in inefficient courts; consequently, weights derived from these courts will overestimate the need for judges. Integrating procedural efficiency as a criterion for selecting courts to participate in the weighted caseload study would ameliorate this problem.

While efficiency is a frequent topic of discussion among court managers, research in the area of judicial administration has found few (if any) universally accepted efficiency procedures. A successful procedure in one court may be a cause of inefficiency in another. Other factors being equal, however, case processing time is an acceptable means for ranking courts in terms of the efficient use of judicial time.

***Quasi-judicial officers.*** Courts that make efficient use of quasi-judicial officers (whether they are called commissioners, magistrates, masters, or referees) should require fewer judges than other courts. For that reason, use of quasi-judicial officers who complete any task that would otherwise be done by



judges should be included as a variable in any weighted caseload study. (Chapter V shows how quasi-judicial officers can be incorporated into a weighted caseload study.)

***Automation.*** Courts that make use of automated information systems may be gathering the type of information that enhances management and operational control of the court. Particularly well-run courts are likely to be more efficient and effective than others and should be strongly considered for inclusion in the weighted caseload study. In addition, automation holds the promise as a ready source for the detailed caseload information required by the weighted caseload technique. A related point is that automation encourages data to be collected in a consistent and comparable manner throughout the state, thus making court-by-court comparisons possible and equitable.

### ***Sampling Case Types***

The question of how many case types to include in a weighted caseload study is one of balance. The more case types used in the study, the more detailed and precise a weighting scheme will be. The more case types included, however, the larger the sample size, and hence the larger the burden and cost of the weighted caseload study.

All major case types should be included in an initial weighted caseload study, and then the weights examined to determine if any case types can be combined. For example, if the first study determines that it takes an equivalent amount of time and resources to dispose of a misdemeanor offense and a driving under the influence offense, those two case types may be combined in the sample taken for subsequent weighted caseload studies. Another criterion for evaluating the need for case types is the variation in caseload composition among circuits or districts. If a particular type of case is distributed relatively equally among districts or circuits, it may be considered for elimination from analysis on the grounds that the case type impacts all courts proportionately and so will not affect the overall weighting scheme.

Table 3 shows a wide range in the number and types of cases used in the states that employ weighted caseload to assess the need for judgeships.

**Table 3: Case Types and Weights Used for General Jurisdiction Courts in Selected States**

<u>Minnesota</u>		<u>Wisconsin</u>		<u>Washington</u>		<u>Colorado</u>	
<b>Criminal</b>		<b>Criminal</b>		<b>Criminal</b>		<b>Criminal</b>	
Serious Felony	664	Felony	116	Person	395	Criminal	113
Other Felony	120	Misdemeanor	30	Property	113	Homicide	492
Gross Misd/DWI	56	DWI	29	Criminal Appeal	87	Felony 1	529
Gross Misdemeanor	42			Other Crimes	82		
5th Degree Assault	20						
DWI	11						
Nontraffic Misdemeanor	5						
Petty Misdemeanor	1						
Parking	.1						
<b>Civil</b>		<b>Civil</b>		<b>Civil</b>		<b>Civil</b>	
Malpractice	737	Injury/Property Damage	116	Adm. Law/Rev	217	Civil	110
Employment	571	Other Civil	21	Tort	172	Probate	65
Wrongful Death	335	Formal Estate	21	Civil Appeals	145	Mental Health	41
Personal Injury	292	Other Probate	11	Commercial	76	Rule 120	13
Property Damage	254	Contract/Real Estate	32	Property/Condemn	42		
Commitment	227	Small Claims	25	Other Civil	42		
Condemnation	211			Mental Illness	24		
Contract	189			Probate	13		
Trust	143						
Guardian/Conservator	126					<b>Water Rights</b>	76
Conciliation Appeal	113						
Other Civil	109						
Special Administration	93						
Implied Consent	72						
Supervised Administration	43						
Harassment	31						
Unsupervised Admin.	26						
Other Probate	25						
Unlawful Detainer	10						
Conciliation	5						
Informal Administration	4						
Default Judgment	4						
Transcript Judgment	2						
<b>Domestic</b>		<b>Domestic</b>		<b>Domestic</b>		<b>Domestic</b>	58
Other Family	217	Divorce	58	Domest/Paternity	51		
Dissolution w/child	182	Protective Action	19	Guardianship	37		
Dissolution w/out child	63	Other Family	16	Adoption	12		
Support	45	Paternity	35				
Other Juvenile	45						
Domestic Abuse	37						
Adoption	22						
<b>Juvenile</b>		<b>Juvenile</b>		<b>Juvenile</b>		<b>Juvenile</b>	69
Term Parental Rights	150	Juv. Delinquency	47	Juv. Dep/ARP	119		
Dependency/Neglect	149	Juv. Ordinance	15	Juv. Offender	47		
Delinquency Felony	59	Juv. Chips	158				
Truancy	55						
Delinquency under 10	46	<b>Traffic</b>					
Delinquency Gr. Misd.	38	Traffic	15				
Runaway	29	Ordinance	16				
Delinquency Misdemeanor	26						
Status Offense	12						
Juvenile Traffic	5						

### ***Sampling Case Events***

The units of analysis in a weighted caseload study are not the cases, but the case events—the set of activities that comprise a case. All potential judicial activities associated with a particular type of case are classified into a set of “event” categories. In a felony case, for example, these events include the initial appearance, preliminary hearing, arraignment, jury trial, sentencing hearing, etc. Note that these are all *potential events*, regardless of whether they occur frequently (e.g., initial appearance) or rarely (e.g., jury trial). Once the individual events are identified, a sample of each event is examined to determine the average amount of time required to accomplish each phase of the case. Because trials are such a small proportion of caseload, a separate sample of trials is often necessary.

Persons conducting a weighted caseload study may decide to separate administration related to processing of specific cases from general administration, including answering correspondence. Likewise, they may decide to separate administration from travel time.

### ***The Problem of Sample Size***

The discussion of sampling inevitably raises the question of how large a sample should be. The answer to this question is complex enough to consume a significant part of college courses on statistics. Some common sense ideas about sample size are addressed here.

***Variation in the activity being measured.*** First, if processing time for certain case events (e.g., frequency of arraignment, length of time for a preliminary hearing) do not vary much, the sample can be relatively small and still provide a good estimate. Conversely, if processing times vary dramatically, a larger sample is needed to obtain a reliable average. Second, to gather sufficient information on rarely occurring case events (e.g., tort jury trials), one would need a larger sample of tort cases. The alternative is to obtain a separate sample of rare case events, such as jury trials.

***Practical sample size.*** In most instances, a sample of less than 30 respondents will provide too little information to be useful, and usually experienced researchers regard 100 observations as the minimum sample size when the population is large. Under normal circumstances, the maximum practical sample size is about 1,000 observations.

It is seldom necessary to sample more than about 10 percent of the population to obtain adequate confidence that the sample represents the population being studied. Therefore, if the court handled about 1,000 felony cases per year, the experienced researcher would probably consider a sample of about 100 or so. For a population of 5,000 felony cases, the minimum sample size would be about 100 and the maximum about 400. For populations over 10,000, it is prudent to consider a sample between about 200 and 1,000 observations. As discussed below, however, it is seldom necessary to have more than 384 cases in the sample.

The following outlines one procedure for calculating the number of cases in a sample. We begin with this formula for sample size:

$$\frac{P_y P_n}{(\text{standard error})^2} = \text{Sample Size (N)}$$

$P_y$  and  $P_n$  refer to the proportion of cases answering “yes” or “no” to the question of whether a particular case event occurred. For example, if a preliminary hearing is held in 65 percent of all felony cases, then  $P_y$  is .65 and  $P_n$  is .35. Calculating  $(P_y)(P_n)$  is simply  $(.65)(.35) = .2275$ . In the real world, however, the probabilities are unknown, and so the values of  $P_y$  and  $P_n$  must be estimated, unless they can be taken from a prior weighted caseload study. Moreover, the goal is to choose a sample size that will allow one to determine the frequency of occurrence of all events within a given case, whether they are common (e.g., arraignment) or rare (e.g., jury trial). In the face of uncertainty about how often each event occurs, a conservative option is to estimate an event occurrence of 50 percent. This will guarantee the largest sample size. This choice means  $(P_y)(P_n)$  is equal to .25, and the equation becomes:

$$\frac{.25}{(\text{standard error})^2} = N$$

Once the values of  $P_y$  and  $P_n$  have been determined, the next step is to decide the level of accuracy desired for the results—the sampling error. A conservative choice is to gather enough information to provide results accurate within the range  $\pm 5$  percent (which means a confidence interval of 95 percent). This level is standard by convention, but is not the only choice that could be made.

With a 95 percent confidence interval, the standard error multiplied by 1.96 is equal to the sampling error. Therefore, dividing the sampling error chosen (i.e., .05) by 1.96 gives the standard error.

$$.05/1.96 = .0255$$

Squaring this number

$$(.0255)^2 = .0006502$$

provides the final piece in the equation for sample size:

$$\frac{.25}{.0006502} = N$$

$$\text{Sample Size} = 384$$

What this means is that a sample of 384 cases (e.g., felony cases) is sufficient to determine the frequency with which the different types of events occur with a confidence interval of 95 percent.

That is, 384 cases is the sample size necessary to ensure that the frequency of the observed event (e.g., preliminary hearings in felony cases) will be within  $\pm 5$  percent of the actual unknown occurrence.

Note that these numbers are not affected by case volume. A sampling error of  $\pm 5$  percent with a 50/50 estimate of occurrence will always yield 384 cases.<sup>24</sup> A sample of 384 cases will describe a population of 115,000 or 15,000,000 cases with virtually the same degree of accuracy.

***Maintain the size of subsamples.*** Once the sample has been chosen, the analyst may wish to examine particular events within a case. When that is true, the size of each subsample needs to be determined. For example, to build the case weight for felony cases, the researcher would need to compile information on the time needed to process each separate event, such as arraignments and sentencing hearings. Depending on the underlying distribution, the analyst may need between 200 and 384 observations on *each* event. This means that the sample of felony cases must be large enough to obtain adequate subsamples on each key event. Therefore, before the original sample is drawn, the researcher must anticipate the types of analysis that will be done and the number of subsamples that will be needed. In other words, to ensure that the sample is adequate to build each case weight with a sufficient degree of confidence, the researcher must use a sample large enough to generate a satisfactory amount of information on each case event.

***Selecting the sample.*** When the sampling frame consists of choosing a sample from, all the disposed felony cases, the most common method of selecting a random sample is to choose every “nth” file, where n is calculated by dividing the total number of felony filings by the number of cases to be included in the sample. If a sample of 400 were to be chosen from a population of 4,000, the sample interval is ten and every 10th case would be picked, but *not necessarily* starting from the first case. Otherwise, some cases would not have a chance of being included in the sample. In this example, the researcher should select the actual starting point of the sample interval at random, perhaps drawing the number from a hat or using a table of random numbers. If the number drawn is 6, the first file chosen would be the 6th one on the list, followed by the 16th, etc.

Another possibility for randomly selecting a sample is to use a random number generator available in many statistical software packages. The random number generator will produce a list of files to be sampled that can be sorted in sequence from lowest to highest.

***A word of caution.*** Constraints on the amount of time and money that can be spent on a judicial needs study sometimes mean that the analyst will need to compromise in such areas as sample size, acceptable error levels, and identifying sources of bias. Judgment is important because there are no strict guidelines for choosing the exact balance between accuracy and precision of the results, on one

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<sup>24</sup> This sample size, 384, is a conservative estimate of the cases needed. If occurrence in the population is known, the sample could be smaller. See Herbert Arkin and Raymond R. Colton, *Tables for Statisticians* (New York: Barnes & Noble, Inc., 1963), p. 145.

hand, and the burden of data collection and cost of the study, on the other. This reality about the science and art of sampling is coherently expressed below:

The researcher should be advised that there are statistical formulas for the computation of a specific sample size to yield a given level of confidence for a single variable. Unfortunately, they are of little value, even to experienced, practicing researchers, for several reasons. The computations require fairly accurate estimates of population variance, and that is seldom known in advance. In addition, most surveys include dozens or even hundreds of items or variables, and it would be virtually impossible to complete the calculations for each. If such computations were performed for each item and the largest required sample size were used for the survey, the sample would very likely be much larger than that required for all but a few survey items. Lastly, sponsors usually know and can verbally express the degree of confidence in the data and estimates that they desire, but rarely if ever will they be able to express these requirements numerically, in terms of confidence intervals.

While there are some scientific principles and procedures associated with sampling, the design of a sample and the selection of a sample size remain largely an art. The researchers designing survey samples should follow the guidelines and apply the recommendations, but ultimately they must be somewhat creative and willing to trust their own judgment.<sup>25</sup>

## Step 2: Identify the Number of Case Processing Events Required to Process Each Type of Case

The next step involves identifying the case processing events that occur in each of the separate case types. Table 4 provides a generic list of case event types, while Table 5 identifies a sample set of 12 case processing events that may apply to felony and divorce cases (see Step 3).

**Table 4: Comparison of Event Types Used in Weighted Caseload Studies for Selected States**

	Colorado	Minnesota	Wisconsin	Washington
<b>Pretrial</b>	<ul style="list-style-type: none"> <li>• Arraignment</li> <li>• Hearings/motions</li> <li>• Case conference</li> <li>• Signing motions/orders</li> </ul>	<ul style="list-style-type: none"> <li>• Ex parte hearing/case conference</li> <li>• Case research/hearing</li> <li>• Trial preparation</li> </ul>	<ul style="list-style-type: none"> <li>• Initial appearance</li> <li>• Preliminary hearing</li> <li>• Arraignment</li> <li>• Scheduling/conference</li> <li>• Pretrial hearing/motions</li> <li>• Defaults/plea acceptance</li> <li>• Bench warrants/orders</li> </ul>	<ul style="list-style-type: none"> <li>• Criminal hearings/motions</li> <li>• Civil hearings/motions</li> <li>• Juvenile hearings/motions</li> <li>• Jury selection</li> <li>• Warrants</li> </ul>
<b>Trial</b>	<ul style="list-style-type: none"> <li>• Court trials</li> <li>• Jury trials</li> </ul>	<ul style="list-style-type: none"> <li>• Awaiting jury verdict</li> <li>• In court</li> </ul>	<ul style="list-style-type: none"> <li>• Court trial</li> <li>• Jury trial</li> </ul>	<ul style="list-style-type: none"> <li>• Bench trial</li> <li>• Jury trial</li> </ul>
<b>Post-trial</b>	<ul style="list-style-type: none"> <li>• Sentencing evaluation</li> <li>• Post activity/trials</li> </ul>	<ul style="list-style-type: none"> <li>• PSI/sentencing review</li> </ul>	<ul style="list-style-type: none"> <li>• Disposition/sentencing</li> <li>• Post-judgment/hearing</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-sentence investigation</li> <li>• Post-trial jury activity</li> </ul>

Note: Some states measure and apply weights to non-case-related events (e.g., legal research). Other states take non-case-related time into account by adjusting the judge year.

<sup>25</sup> Pamela L. Alreck and Robert B. Settle, *The Survey Research Handbook* (Homewood, Ill.: Irwin, 1985), p. 93.

At this point, it may be appropriate for staff to visit each court that agrees to participate in the weighted caseload study to describe the benefits of the study, to describe the data collection instruments and procedures, and to answer any questions about the conduct of the study.

### **Step 3: Calculate Average Time per Event**

After selecting the particular events, one must next determine the average time spent on each of these case processing events. For example, how long does the average initial appearance take to process in a felony case compared to an initial appearance in a misdemeanor or traffic case? Event time data is collected through a time study. Judges are asked to monitor their time on and off the bench for a specified period of time.

#### ***Measuring Average Time***

Several options are available to the analyst for measuring average or typical time necessary to process each case event. The choice depends to a great extent on the underlying distribution of the data being examined. While the arithmetic mean is the most widely used of all averages, we know that the mean is heavily influenced by outliers. One or two exceptionally large or small values can change the mean dramatically. Moreover, the value of using the mean to represent a set of data depends on how close the data is to being normally distributed (i.e., a bell-shaped curve). If the data are highly skewed (as is sometimes the case with the data on event times), the mean may not be the most appropriate measure.<sup>26</sup>

A practical, straightforward alternative measure of central tendency is the median. The median is defined as the middle number—the value that divides a set of numbers into two equal parts. The median has several desirable properties, including that it is (1) an intuitive and straightforward measure of average time, (2) not affected by the size of extreme values, as is the mean, and (3) a better measure of average time than the mean when the distribution is uneven or skewed.

Although the median has definite advantages, it also has certain disadvantages. One disadvantage is that the mean, but not the median, has certain mathematical properties that are useful in calculating measures of dispersion such as the standard deviation. In addition, the mean can be used to test hypotheses about the significance of differences between samples. This will prove useful, for example, in testing whether the time taken by a quasi-judicial officer to perform a certain task is the same as that taken by a judge.<sup>27</sup>

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<sup>26</sup> Since the normal distribution is very important to statistical inference, time data gathered by event should be examined to determine whether it is indeed normally distributed. Many statistical packages (e.g., SPSS and SAS) allow the analyst to view the data against the normal distribution (i.e., normal probability plot) and to perform statistical tests of normality.

<sup>27</sup> If the data prove to be non-normal, there are nonparametric tests (i.e., tests that do not assume the data is distributed normally) that can be used to test whether the median times are different. While these tests are generally less powerful than their parametric counterparts, they do allow two or more independent samples to be compared and provide tests of significance similar to the t-test and analysis of variance.

A compromise between the mean and median is the trimmed mean. This estimator is obtained by “trimming” the data to exclude values that are far removed from the others. For example, a 10 percent trimmed mean excludes the largest 10 percent and the smallest 10 percent of the observations, leaving all statistics to be calculated on the 80 percent of the cases in the middle.<sup>28</sup> The trimmed mean has the primary benefit of the median in that it is not strongly influenced by extreme values. Likewise, it has the main benefit of the mean in that it is not based on a single value (like the median) and can be used in standard statistical hypothesis testing.

### ***Measuring High-Volume Events***

The longer, discrete events (operationally defined as those that were easily separable, for example, a jury trial or any event that took longer than 20 minutes to complete) should be tracked individually as separate entries on the time log. If an arraignment in a particular case took 20 minutes, then the case number for that case is recorded and the 20 minutes necessary to conduct the arraignment in that specific case is noted.

Repetitive, short case processing events may be measured by volume. For example, if a judge processed 20 arraignments in a two-hour period, this activity may be entered on the form as “20 arraignments—2 hours.” Therefore, data will be gathered in two forms: (1) actual event processing time data for specific, longer events and (2) average event processing time for a given volume of specific events connected to a specific type of case.

To calculate the “average” amount of time each event took to process, the analyst should transform all events gathered by volume (e.g., “20 arraignments—2 hours”) into individual events (e.g., 20 arraignments each taking 6 minutes).

Table 5 provides an example of the average times required to process potentially applicable events in felony and divorce cases. These two types of cases, one criminal and one civil, each with different processing events, are chosen to illustrate the case weighting process.

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<sup>28</sup> The amount of the trim (e.g., 5, 10, 20 percent) is up to the judgment of the analyst. A 50 percent trim mean is equivalent to the median.



**Table 5: Median Time to Process Felony and Divorce Events in a Hypothetical State**

Event Type	Felony Cases		Divorce Cases	
	Minutes to process	Number of events	Minutes to process	Number of events
Initial or First Appearance	5	350	30	268
Preliminary Hearing	17	262		
Arraignment	7	462		
Scheduling/Pretrial Conference	15	242	15	259
Pretrial Hearing and Motions	15	647	30	205
Default Judgment/Plea	15	322	15	195
Court Trial	47	43	30	132
Jury Trial	480	68		
Post-Judgment	15	116	20	722
Disposition/Sentencing	18	492	20	46
Bench Warrants/Orders	5	160	3	231
Appeal/Review	5	107	30	34

Note: Blank spaces indicate that the event type does not occur.

Definitions of each case processing event must be made clear and should be included as part of the data collection packets distributed to each participating court. Table 5 shows the median time required to process each particular case event, as well as the number of individual events on which the median time is based. For example, the average time taken for an initial appearance in a felony case is five minutes, based on data from 350 initial appearances. An initial or first appearance in divorce cases takes much longer to conduct than does an initial appearance in a felony case. This difference underscores the importance of examining event times for all the different types of cases involved in the study.

#### **Step 4: Determine Frequency of Case Processing Events**

The purpose of this step is to determine how frequently key case processing events occur in each of the case types being studied. How many pretrial hearings or motions occur in each personal injury case?

There are two primary sources for data on the frequency of case processing events. The first is the automated data collection system in each state. If data on event frequency is collected in a consistent fashion, the automated system will be a valuable source of critical information. It also opens the door for acquiring this information in a fast, cost-efficient manner. The frequency with which a particular event (e.g., an arraignment) occurs within a given case type (e.g., a felony) is simply the division of the total number of events by the total number of cases. For example, if 1,050 initial appearances were set in processing 1,000 felony cases, (perhaps because some defendants failed to appear at the first hearing), the frequency of initial appearances in felony cases would be 1.05. In other words, there is slightly more than one initial appearance per case, on average. Of course, some events (e.g., hearings) can be expected to occur more frequently, while others (e.g., jury trials) are expected to occur less frequently.

The second, and more typical, method for acquiring frequency of event information is through a sampling of case files. The overview of sampling discussed earlier outlines the process for choosing an appropriate sample size.

Accurate information on the frequency of event occurrence is as critical to the success of a weighted caseload study as is accurate information on time. In practice, accurate and reliable frequency of event information is one of the most difficult data elements to obtain in states with or without automated information systems. Sufficient time and money must be allocated in the weighted caseload project budget to ensure that frequency of event information is of high quality.

Table 6 illustrates an example of the frequency of case events for felony and divorce cases. The pattern of event frequency in the average divorce case is almost certain to be very different from that in the typical felony. A particularly noticeable difference in this example is that about one in every ten felony cases ends in a court trial, while only one in a hundred divorce cases are disposed of through court trial.

**Table 6: Event Frequency in Felony and Divorce Cases in a Hypothetical State**

Event Type	Frequency of Events	
	Felony	Divorce
Initial or First Appearance	1.05	0.05
Preliminary Hearing	0.63	
Arraignment	0.64	
Scheduling/Pretial Conference	0.03	0.44
Pretial Hearing and Motions	1.83	0.49
Default Judgment/Plea Acceptance	0.85	0.47
Court Trial	0.10	0.01
Jury Trial	0.05	
Post-Judgment/Verdict Hearings/Motions	0.18	0.05
Disposition/Sentence Hearing	0.73	0.61
Bench Warrant/Order	0.39	0.02
Appeal/Review	0.33	0.05

Note: Blank spaces indicate that the event type does not occur for this case type.

### Step 5: Calculate the Task Weight

Table 7 shows that 12 key events are used to calculate the weight for a felony case. If all 12 case processing events occurred in every felony case, then the total time of 644 minutes would be the best estimate of the judicial time necessary to handle a felony case. However, most felony cases do not require all 12 events for disposition. Jury trials, for example, occur in only 5 percent of the cases. But when a jury trial is required to dispose of a case, about 480 minutes of judge time, on average, is added to the case.

**Table 7: Constructing the Case Weights for Felony and Divorce**

Event Type	Felony			Divorce		
	Median Time (Min)	Event Frequency	Task Weight	Median Time (min)	Event Frequency	Task Weight
Initial Appearance	5	1.05	5.25	30	0.05	1.5
Preliminary Hearing	17	0.63	10.71			
Arraignment	7	0.64	4.48			
Scheduling/Pretial	15	0.03	0.45	15	0.44	6.6
Pretial Hearing/Motions	15	1.83	27.45	30	0.49	14.7
Default Judgment/Plea Acceptance	15	0.85	12.75	15	0.47	7.05
Court Trial	47	0.01	0.47	30	0.36	10.8
Jury Trial	480	0.05	24.00			
Post-Judgment/Verdicts	15	0.18	2.70	20	0.05	1.0
Disposition/Sentencing	18	0.73	13.14	20	0.61	12.2
Bench Warrant	5	0.39	1.95	3	0.02	0.06
Appeal/Review	5	0.33	1.65	30	0.05	1.5
Total	644		105.00	193		55.4

Note: Blank spaces indicate that the event type does not occur.

Final Case Weight	Case Weight
Felony Cases	105.0
Divorce Cases	55.4

Nine of the 12 case processing steps occur in divorce cases, and if all nine were used, an average divorce case would take about 193 minutes of judicial time to dispose. Like most cases, however, the vast majority of divorce cases are disposed with fewer than nine case processing activities.

Therefore, the time each event takes must be weighted by the frequency with which it occurs in the typical case to construct the case weights. Deriving each “task weight” involves multiplying the time an event takes by the frequency with which it occurs. That means that while plea acceptances in felony cases will take, on average, 15 minutes, they occur in only 85 percent of the cases. Multiplying 15 minutes by .85 provides a plea acceptance task weight of 12.75 minutes.

### Step 6: Sum Task Weights to Produce the Case Weight

Summing the individual task weights results in a final felony weight of 105 minutes. When the nine task weights that are applicable to divorce cases are calculated and totaled, the sum of 55.41 represents the divorce case weight. It is important to emphasize that these case weights are an average, and some cases will take much longer to process while others will be disposed more quickly.<sup>29</sup> When the volume of cases being processed gets large, however, the case weight should approach the average amount of judicial time being devoted to the particular type of case.

<sup>29</sup> The average accounts for the fact that judges with particular expertise in some areas of law or skills at reaching accommodation may be able to dispose of certain types of cases more quickly than other judges.

## Step 7: Determine Available Judge Time

Once the time necessary to dispose of different types of cases has been determined, the next step is to answer the second question posed in the introduction to this chapter: How much judge time is available to process cases? Determining available judge time is a two-stage process that entails calculating how many days per year are available to judges to hear cases, and then determining how many hours per day are used for case-related work. Multiplying these two measures together gives the “judge year.” The judge year is an estimate of the amount of time the “average” judge has to process cases during the year.

**Guideline 6** *Existing resources should be evaluated in terms of a standard year and full-time equivalent hours per day for judges and court support staff.*

(1) *Judge days available* reflects the number of days available for each judge per year to hear case-related matters. In establishing the “average” or “standard” judge year, one must accurately describe the various factors that reduce the days available for a judge to hear cases. To correctly portray a judge year, the number of days available to hear cases must take into account factors such as weekends and holidays and time related to illness, vacation, and judicial education.

The judge year may be measured in minutes, hours, or days, but regardless of the metric, calculating available judge time is an essential ingredient in determining how many cases can be processed in a year. Table 8 shows the factors considered by selected states when establishing a judge year, as well as the final judge year value.

**Table 8: Comparison of Judge Years for Selected States**

Time Expended for:	Wisconsin	Colorado	Minnesota	Washington
Weekends	104	104	104	104
Holidays	11	10	11	11
Vacation	25	21	*	30
Sick Leave	6	10	13	6
Workshops/Education	7	**	5	
Pro Tempore Days			30	
Meetings/Conferences	3			
Total Days Expended	156	145	163	151
Judge Year	209	220	202	214

\* Include in pro tempore.

\*\* Accounted for in judge day (see next section).

Most states estimate that there are between 200 and 224 available working days per year, although Nevada uses 240. The number of working days in a judge year in other states are as follows: Missouri and Kansas, 224; Delaware, 222; New York, 221; Florida, Georgia, Oregon, and Rhode Island, 220; Arkansas and Hawaii, 218; California, 216; New Mexico, 214; Connecticut, 213; Utah,

211; Louisiana, 209; Alabama and West Virginia, 200. In some states, the available working days in the year vary between courts of general and limited jurisdiction or by whether the court is located in an urban or rural community. Colorado, for example, uses a slightly different judge year depending on whether the county is classified as urban or rural.

Though easy to identify, factors affecting the time available may be hard to measure in practice. For example, sick leave may be difficult to calculate since many judges report taking “as much as they need.” In addition, many states have no formal provisions for leave time, making it difficult to accurately incorporate those days taken for vacation, educational leave, or holidays. In these states, court officials may use averages or estimates of time devoted to leave or non-case-related matters. In some states or jurisdictions, it may be wise to approximate a judge year by reviewing leave records or by surveying judges. States may also establish a committee or study group to guide a structured process for determining the factors that should be used for computing a standard judge year.

(2) *The judge day* is separated into two parts: the amount of judge time devoted to (a) case-related matters and (b) non-case-related matters. A judge may work a nine-hour day, but only part of the day is devoted to hearing cases.<sup>30</sup> Although judicial time available to process cases will vary daily, the *typical* day will include the number of hours in the workday minus deductions for:

- administrative time, correspondence, phone calls
- travel time
- docket management
- waiting or “dead” time
- public education
- civic activities
- general and legal research
- opinion writing
- judicial meetings

A straightforward approach for determining the amount of case-related time available each day is to define the number of hours in a workday (usually 8 or 9 hours) and develop a standard deduction for non-case-related activities. For example, Wisconsin begins with an 8.5-hour workday then deducts an hour for lunch to derive at a 7.5-hour workday. Other deductions include 88 minutes for court/calendar management (e.g., written orders, opinions, and correspondence), 47 minutes for legal research, and 48 minutes of unscheduled time (e.g., substitutions, travel, and temporary assignments). This results in four and a half hours of case-related time per day.

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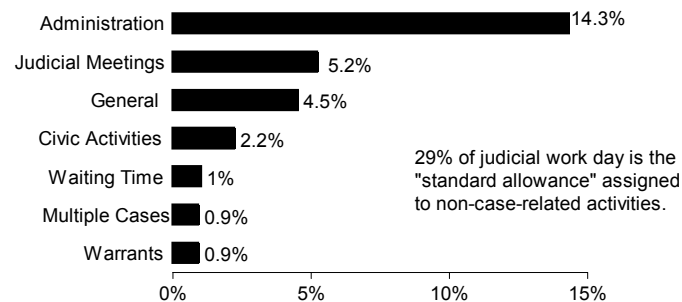
<sup>30</sup> Judges or courts that spend inordinate amounts of time on administrative matters should, as a general rule, be excluded from any formula used to calculate the judge day. However, accounting for these more extreme cases can be important in determining judgeship needs on a more local or individual level. Adjustments for these types of cases can be made *normatively*, that is, after the initial weights or judgeship needs have been assessed empirically. In this event, a series of policy decisions concerning special or additional judgeship needs must be made.

The state of Washington employs a “standard allowance” to account for the proportion of time needed to handle non-case-related judicial tasks. The standard allowance is set at 29 percent of the judicial workday. In addition, Washington reduces the eight-hour workday by 1.33 hours to accommodate lunch and other daily breaks. The standard allowance for judges is described in Figure A.

Colorado separates judge time into monthly hours spent on case-related and non-case-related activities. Non-case-related time is defined as time spent on judicial functions not directly related to case processing (e.g., docket management, travel, or meetings). The net amount of time available for case-related work is different depending on whether a judge is employed in an urban, rural, or county court (see Table 9).

(3) *The judge year* is then calculated by multiplying the number of judge days available by the number of case-related hours in the day. Judge years are not strictly comparable between states because some states include the time necessary for legal research, typically a nonbench activity, in a judge day, while others build these activities into the individual case weights. Therefore, case weights for similar types of cases may be smaller in some states than others depending on how nonbench activities are counted.

**Figure A: Washington’s Standard Allowance for a Judicial Full-Time Equivalent**



**Table 9: Comparing Available Judge Time in Colorado**

	Urban Courts	Rural Courts	County Courts
Total Hours Available (52.2 weeks x 40 hrs)	2,088	2,088	2,088
Vacation/Sick/Holidays (subtracted from above)	328	328	328
Base Hours Available	1,760	1,760	1,760
Hours devoted to non-case- related activities (per month):			
Meetings/Conferences	4	4	4
Travel		15	
Docket Management	2	2	1
Research/Reading	4	4	3
Phone Calls	12	10	10
Administrative	1.5	4	4
Other	2	3	1
Community Involvement	2	2	0.5
Education	3	2	2
Total	30.5	46	25.5
Yearly hours/non-case-related activities (Total x 12 months)	366	552	306
<b>Net hours available to judges</b>	<b>1,394</b>	<b>1,208</b>	<b>1,454</b>

**Step 8: Relate Case Weights to Judgeship Needs**

The primary purpose of case weights is to determine the need for judges in courts throughout the state. The use of case weights as the basis for estimating judicial need in any given county depends on the weights being applied to a large number of cases—typically a year’s worth of filings. Indeed, estimates of judgeship needs should be made on the basis of *projected* filings, to partially accommodate the time lapse between the request for judgeships and the allocation of judges.

Table 3 shows the case types and weights used for general jurisdiction courts in four states. Once total filings by case type are compiled for a given year, they can be multiplied by their respective case weights. Summing these “weighted filings” provides an estimate of the total amount of judge time required to process a given annual caseload.

## FINE-TUNING THE JUDICIAL NEED ESTIMATES

**Guideline 7** *Before new judges or court support staff are requested, the current distribution of caseloads should be examined to ensure the existing judges and court support staff are allocated equitably among jurisdictions.*

### Fractional Judgeships

Weighted caseload calculations normally result in estimates of judicial need that contain fractional judgeships (e.g., 1.5 judges). Fractional predictions have implications for the equalization of workload among counties, especially small counties. For example, County A currently has one judge, and County B has four judges. Assume the weighted caseload system shows that each needs an additional half of a judge: County A needs 1.5 judges and County B needs 4.5. County A is understaffed by 50 percent, whereas County B is understaffed by 12.5 percent. Therefore, one-half of a judicial position has a greater impact on a small county than a large one.<sup>31</sup>

Those responsible for conducting the weighted caseload should develop a procedure for rationally allocating fractional judgeships. One possible method is to round up or down to a whole judicial position using different rounding points for courts of different sizes. The rounding would not depend on the fractional part per se, but rather on the percentage of understaffing represented by the fraction.

The weighted caseload methodology should deal not only with the question of how many judges are needed ideally, but also with the very practical problem of how judges should be allocated optimally, when scarce fiscal resources prohibit obtaining all the judges that the methodology deems necessary. Weighted caseloads do not indicate whether the variations are extensive enough to justify reassigning judges from one circuit to another. Before new judgeships are requested, it is necessary to examine the current distribution of caseload among judges to determine whether currently existing judges could be assigned to areas of greater need.

### The Equal Proportions Method

NCSC uses the Equal Proportions, or Huntington Method, to determine the best way to allocate judges among circuits.<sup>32</sup> Professor Huntington of Harvard developed this method in 1920 to deter-

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<sup>31</sup> Only Georgia officially takes note of this phenomenon by setting different “thresholds” for judgeship need based on number of judges in the Circuit. A one or two judge court would become eligible for consideration of a new judgeship whenever the weighted workload measures sufficient work for 1.5 FTE judges, whereas judgeship needs for a 3-judge circuit would be considered when the caseload per judge exceeded 1.33 FTE judges. See Chapter II for a discussion of criteria used by Georgia.

<sup>32</sup> See Victor E. Flango, “Formula Can Help Allocate Judges,” NCSC *Report*, Vol. 4 (July 1982). A complete discussion of the Equal Proportions Method may be found in Laurence Schmeckbier, *Congressional Apportionment* (Westport, Conn.: Greenwood Press, 1976).



mine how a fixed number of seats should be assigned in the House of Representatives after a new census was taken.<sup>33</sup> Because absolute equity in distribution of workload is not possible in practice, the goal should be to reduce disparity among judicial workloads. The current distribution of judges should be examined as a baseline to determine how states can make the best use of the judges it has. The procedure will permit states to suggest realignments of circuit or district boundaries, if necessary.

Like all modern methods of computing apportionment, the Equal Proportions Method uses a priority list to assign successive seats to states or judges to judicial districts. If the number of judges to be assigned exactly matched the number of judicial districts, or if each district contained approximately the same caseload and mix of cases, there would be no allocation problem. An equal number of judges could simply be added to each district.

The Equal Proportions Method is employed as follows:

1. One judge is assigned to each district.
2. The measure of workload for each district (weighted caseloads, ideally, but case filings otherwise) is divided by the geometric mean of successive pairs of numbers (by the square root of [1x2], [2x3], [3x4], etc.) to establish each district's priority.<sup>34</sup>
3. Priority claims for all districts are arranged by size, starting with the largest.
4. Remaining judges, that is, the total number to be assigned minus those assigned in step 1, are allocated to the districts in order of priority claims, starting with the largest, until all judges have been assigned.

To illustrate this process, an example will be given on how to allocate 44 judges in a state with 21 districts.

Following the steps outlined above, one judge is assigned to each of the 21 districts; then the remaining 23 judges are assigned, according to each district's priority claim. Eight districts are assigned three judges each, seven districts are assigned two judges each, and the remaining six districts are assigned one judge each, as shown in Table 10. The table also shows that if a new judgeship were created, that judge should be assigned to the eighth district since its priority number (5,457) is higher than any other. The twenty-fifth judge would be assigned to District 15 and the twenty-sixth judge to District 5.

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<sup>33</sup> Edward V. Huntington, "A New Method of Apportionment of Representatives," *Quarterly Publication of the American Statistical Association*, Vol. 17 (1920), pp. 859-70.

<sup>34</sup> The geometric mean is a method of averaging ratios so that the geometric mean (c) of two numbers (a) and (b) may be expressed as follows:

$$\frac{a}{m} = \frac{m}{b}, \text{ or } m^2 = ab, \text{ or } m = \sqrt{ab}$$

Thus the geometric mean of 4 and 16 is  $\sqrt{4 \times 16}$  or  $\sqrt{64}$  or 8. Schmeckbier, op. cit., p. 22.

The Equal Proportions Method cannot help court managers and legislators determine *how many* judges are needed in a particular state. It can assist, however, in allocating a fixed number of judges to districts or circuits so that the workload is most equally divided among the judges. The formula can also be used to identify which districts are next in line to receive additional judges when new judge-ships are created. Of course, the results of the allocation are only as good as the data upon which the allocation is based.

**Table 10: Allocating Judges Between Districts Using the Equal Proportions Method**

District	Weighted Caseload/ Case Filings*	Cases Filings Divided By			Total Judges Allocated
		$\sqrt{1 \times 2}$ (1.414)	$\sqrt{2 \times 3}$ (2.449)	$\sqrt{3 \times 4}$ (3.464)	
5	18,201	12,870 (1)	7,431 (12)	5,254	3
2	17,435	12,328 (2)	7,118 (13)	5,033	3
9	16,363	11,570 (3)	6,680 (16)	4,724	3
6	15,967	11,290 (4)	6,519 (17)	4,609	3
4	15,894	11,239 (5)	6,489 (18)	4,588	3
10	15,809	11,179 (6)	6,465 (19)	4,564	3
13	15,254	10,786 (7)	6,227 (20)	4,403	3
17	14,488	10,245 (8)	5,915 (22)	4,182	3
21	11,845	8,376 (9)	4,836		2
16	10,882	7,695 (10)	4,443		2
14	10,756	7,605 (11)	4,391		2
7	9,749	6,894 (14)	3,980		2
11	9,728	6,879 (15)	3,971		2
3	8,494	6,006 (21)	3,468		2
20	7,763	5,489 (23)	3,169		2
8	7,718	5,457			1
15	7,699	5,444			1
12	6,513	4,605			1
19	5,456	3,858			1
1	4,752	3,360			1
18	4,320	3,055			1

\* In descending order.

Note: The allocation process proceeds in this fashion: all 21 districts are assigned one judge and additional judges are then assigned to the courts with the greatest relative need measured by the size of the numbers in columns 3, 4, and 5. The numbers in parentheses refer to the priority of each district to receive an additional judge. For example, in column 3, the first 11 additional judges are assigned to districts where weighted filings range between 12,870 and 7,605. The next highest number is 7,431 in column 4, so that District 5 would be slated to receive the 12th remaining judge and District 2 (with 7,118 weighted filings) would receive the 13th additional judge. In this way, judges are assigned to the districts with greatest relative need until all judges are allocated.

## Qualitative Aspects

Although the quantitative criteria suggested above provide a baseline from which to establish the need for judges, no set of statistical criteria will be so complete that it encompasses all contingencies. Each circuit or district will have peculiarities in caseload caused by differences in demographics and other factors. Indeed, many court observers agree that the administrative responsibilities of the judges, the location of correctional facilities, and the location of state institutions, including hospitals and educational institutions, are legitimate, mitigating factors to consider when judgeships are being allocated. Given the difficulty of taking all contingencies into account within a statistical model, some provision should be made for local exceptions to the established criteria. Otherwise, the judgeship needs criteria established would have to be nearly as complex as the real world and more costly to produce than the added precision would justify.

The weighted caseload estimates establish the baseline criteria for receiving additional judicial resources. In addition to the statistical information, however, individual characteristics of the courts must be examined before any new judicial positions are recommended.

The outline below describes the general procedure recommended to examine the judicial needs of each court. Begin with an examination of the weighted caseload estimates to determine whether a court meets the empirical criteria for an additional judgeship. If so, a *qualitative* assessment should be undertaken in the following areas:

1. Determine whether the judges and administrative staff of the particular court believe they need additional judicial resources through a systematic procedure to solicit local opinion. Input should also be sought from the district court administrator, members of the bar, and other local leaders. A procedure should be established to obtain local input in writing.
2. Examine caseload trends over time to determine whether caseloads are increasing, decreasing, or remaining steady whether observed fluctuation are short or long term. Attention should also be paid to whether the court has an unusual caseload mix.
3. Examine court organization to ensure that the court is structured and managed to make the most effective use of the additional resources.
4. Explore options that will address concern over judicial workload without increasing the number of permanent, full-time judges. Options include (1) using quasi-judicial staff for certain types of hearings; (2) hiring retired or senior judges on a part-time or contractual basis; and (3) sending more cases to alternative dispute resolution.
5. Keep in mind that judicial productivity, and hence the need for new judges, also depends on the effectiveness of court support staff. Without the proper type and level of support, judges may be performing some tasks that could be delegated to qualified support staff.

## Chapter V

### Accounting for Quasi-Judicial Officers and Courts of Different Sizes

#### INTEGRATING RESOURCES: JUDGES AND QUASI-JUDICIAL OFFICERS

All decision makers, both judges and quasi-judicial officers, should be part of a single, comprehensive weighted caseload scheme. Since quasi-judicial officers perform a wide variety of essential case processing tasks, it is important to explicitly include the work of both judges *and* quasi-judicial staff (commissioners, magistrates, and referees) when estimating the need for “judicial” resources. Indeed, the typical quasi-judicial officer does work that, in his or her absence, a judge would do. The assessment of judgeship needs will be incomplete, and therefore inaccurate, to the extent that the contributions of these quasi-judicial officers are not considered in the weighted caseload design.

**Guideline 8**     *The need for judges, quasi-judicial officers, and court support staff should be assessed together if at all possible, because addition of one type of court personnel may affect the overall need for resources. Without the proper type and level of support, judges may be forced to perform some tasks that could be delegated to qualified support staff.*

How can the case weighting technique be adapted to integrate the work of quasi-judicial officers into the assessment of judgeship needs? Can case weights calibrated for judges be applied to quasi-judicial officers, or is the calculation of separate case weights needed? The answer lies in isolating, measuring, and comparing the time it takes for judges and quasi-judicial officers to process the same case events. The difficulty arises because quasi-judicial officers may not be involved in a case from start to finish, but handle only specific stages of case processing. These case events, however, can be measured separately by the weighted caseload technique. This technique can be easily adapted to determine the proportion of total workload being handled by quasi-judicial officers.

#### Distinguishing the Work of Judges and Quasi-Judicial Officers

Three conditions distinguish the work of quasi-judicial officers from that of judges. Quasi-judicial officers:

- are found almost exclusively in larger courts;
- tend to specialize in particular types of cases (e.g., traffic, family); and
- usually handle particular stages of case processing (e.g., initial appearances, but not jury trials).

Accounting for the work performed by both judges and quasi-judicial officers, however, need not mean a doubling of the size of the judicial needs study. To the extent that the use of quasi-judicial officers fits the profile above, the analysis necessary to assess differences between the types of judicial officers can be structured to reduce cost and effort. First, the comparison of judge time to judicial officer time can be restricted to urban courts, where the vast majority of quasi-judicial officers serve. Second, because quasi-judicial officers are used primarily for certain case types, it may be possible to limit the comparison to fewer case types than the complete weighted caseload study. Quasi-judicial officers are commonly employed to help process high-volume cases such as misdemeanor, traffic, divorce, small claims, and many juvenile actions. Third, because they typically process particular types of case events within a certain case type, the analysis need only examine the time a particular case event takes.

The goal, remember, is to determine the amount of “judicial” workload in the court. No inference about the *quality* of justice is implied by comparing the speed with which case events are processed by different types of judicial officers. If it takes longer to process a case event because the judge or quasi-judicial officer must explain procedures to a pro se litigant or because a litigant has difficulty understanding the English language, that extra time taken might improve the quality of justice rendered. It is simply a reality that important and necessary work is performed by both judges and quasi-judicial staff. Distinguishing this work in no way supports the notion that the use of quasi-judicial officers is a form of second-class justice and an implied message to litigants that their cases are not worth the attention of a full-time judge. Rather, it is simply a matter of matching appropriate work to the appropriate decision maker.

There are many reasons why the time necessary to process cases will vary among judges and quasi-judicial officers. Because the work of quasi-judicial officers is clearly circumscribed, they have the opportunity to specialize in and become very proficient at particular types of case events, and therefore to process case events faster than a judge, without any sacrifice in quality. On the other hand, this specialization may allow quasi-judicial officers to devote more attention (and time) to each case, so that litigants leave the courthouse feeling they have been given sufficient time to present their case. Either argument may be valid. Differences in time taken by judges or quasi-judicial officers should not be a criterion used to distinguish the quality of performance. The criterion should not be speed of processing, but rather what case events can quasi-judicial officers legitimately handle to ensure every litigant receives the same quality of justice that would be given had a judge handled the same event.

## Task Weights for Judges and Quasi-Judicial Officers

The first step is to identify the specific case processing events that are processed by quasi-judicial officers. Courts that use both judges and quasi-judicial officers to process these events, as well as courts that are generally well managed, provide the most desirable opportunity for comparison.

Does the “average” time taken by a judge to complete an event differ from the “average” time taken by a quasi-judicial officer to handle the same event? When the average event times from the two groups are compared, they will almost certainly be different, but are the differences large enough to be practically meaningful or statistically significant? The first step in answering these questions is to determine which measure of central tendency—the mean or the median—is most appropriate to the data being analyzed. As discussed in the section on measuring average time in Chapter IV, it is important to examine whether or not the data is normally distributed. If the data is close to being normally distributed, the mean may be used to measure average time and standard tests of statistical inference may be used. For example, an “equality of means” test compares the means of two groups and determines the probability that a difference of that magnitude is likely to have occurred by chance.<sup>35</sup> If this probability, called the observed significance level, is large enough (the standard convention is greater than 5 percent), the conclusion is that the differences of that magnitude are not significant and could have occurred by chance.<sup>36</sup>

If the analyst is concerned that the data is distributed in an irregular fashion, nonparametric tests can be used that make only minimal assumptions about the underlying distribution of the data. For example, the “two-sample median” test compares the median event times for judges and quasi-judicial officers. The test examines whether the median times are the same for the two groups of decision makers.<sup>37</sup>

Past research has found that when judges and quasi-judicial officers both perform a particular event with high frequency (e.g., initial appearances, arraignments, and pretrial hearings and motions in felony cases), it is not unusual to find that the differences in time are comparatively small.<sup>38</sup> Table 11

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<sup>35</sup> The equality of means test is fully explained in many basic statistics books. Most statistical packages (e.g., SPSS and SAS) perform this test as a standard routine.

<sup>36</sup> As discussed in Chapter IV in the section on choosing an appropriate sample size, the observed significance level is assessed against a threshold selected by the analyst. An observed significance level greater than  $\pm .05$  means that in 19 out of 20 cases the observed difference in the sample means is too small to have occurred by chance.

<sup>37</sup> The two-sample median test is one of many nonparametric tests. Some statistical packages (e.g., SPSS and SAS) perform this test as a standard routine.

<sup>38</sup> Whether one performs the differences in means test or the two-sample median test, some statistically significant differences will likely emerge even in cases where the average event times are very similar for the two groups. The analyst should use these statistical findings in concert with a visual inspection of the absolute differences in average event time to form a conclusion of whether the differences are large enough to warrant separate weights.

**Table 11: Comparing Hypothetical Felony Event Processing Times for Judges and Quasi-Judicial Officers**

Events	Median Time Spent by Judges	Median Time Spent by Quasi-Judicial Officers
1. Initial Appearance	5	5
2. Preliminary Hearing	23	13
3. Arraignment	7	7
4. Scheduling/Pretial Conference	15	
5. Pretial Hearing/Motions	15	
6. Default Judgment/Plea Acceptance	15	
7. Court Trial	47	
8. Jury Trial	600	
9. Post-Judgment/Verdict Hearing	15	
10. Disposition/Sentencing Hearing	20	14
11. Bench Warrant	5	4
12. Appeal/Reviews	15	

Note: Blanks indicate that quasi-judicial officers do not perform these tasks.

**Table 12: Using Task Weights to Distinguish Between the Work of Judges and Quasi-Judicial Officers in Felony Cases**

Events	Median Times Used to Develop Task Weights*	Felony Task Weights
1. Initial Appearance	5	6
2. Preliminary Hearing	17	10
3. Arraignment	7	8
4. Scheduling/Pretial Conference	15	3
5. Pretial Hearing/Motions	15	24
6. Default Judgment/Plea Acceptance	15	17
7. Court Trial	47	1
8. Jury Trial	600	30
9. Post-Judgment/Verdict Hearing	15	3
10. Disposition/Sentencing Hearing	18	9
11. Bench Warrant	5	2
12. Appeal/Reviews	15	4
Felony Case Weight		117

\* Median times for judges and quasi-judicial officers combined.

compares median event times for judges and quasi-judicial officers and highlights the type of events that are typically handled by both types of decision makers (e.g., initial appearances) and by judges only (e.g., jury trials). Larger differences tend to occur when either the judge or the quasi-judicial officer rarely performs a certain activity. In this case, the best approach is to use the time from the group of judicial officers who actually perform the majority of the particular case event. What should be done, however, if large, statistically significant differences in time are found? Several approaches are possible.

If quasi-judicial officers are found to take longer when handling certain case events, it still might behoove the court to rely upon their services simply because quasi-judicial officers are available and judges are occupied with matters that only they can handle. Another option is to weight case events differently depending upon whether judges or quasi-judicial officers are handling the activity. Finally, a third option is to construct a single task weight by using the average of judge and quasi-judicial officer weights, regardless of who processes the case event. This third choice is illustrated in Table 12, which displays an overall median (calculated by combining both groups shown in Table 11) and a theoretical set of task weights for felony cases.

Task weights, the building blocks of case weights, can be used to distinguish between judges and quasi-judicial officers in terms of event processing time, and even to separate the workloads between the two. Although judges can hear all matters coming before the court, quasi-judicial officers are restricted in the range of case processing events they are allowed to hear. Consequently, it is not possible to develop complete case weights for quasi-judicial officers simply because they do not hear all aspects of a case. To estimate the time necessary to process a particular court's caseload in a county that uses both judges and quasi-judicial officers, one must separate weights into their component parts, so that the contributions of quasi-judicial officers used in conjunction with judges can be assessed.

Case weights are derived by summing individual task weights. To explicitly account for the work being performed by quasi-judicial officers, one must identify the particular tasks they handle. For example, quasi-judicial officers may have responsibility for initial appearances, preliminary hearings, and arraignments in felony cases, while the judge handles all other case events. The individual task weights for a felony case (see Table 12) show that the initial appearance, preliminary hearing, and arraignment account for 24 minutes of the total felony weight of 117 minutes. Subtracting the weights for the tasks handled by the quasi-judicial officer means that the judge need only spend, on average, 93 minutes ( $117 - 24$ ) on each felony case. Thus, the felony case weight can be separated into the judge segment and the quasi-judicial officer segment.

Adjusted case weights (obtained by subtracting the task weights of the tasks handled by quasi-judicial officers) can be used to calculate the number of judges needed to handle a caseload of a set size. In the example above, the total number of felony filings would be multiplied by 93 (rather than 117) to estimate the total amount of judge time needed to process the felony caseload. Of course, the total amount of quasi-judicial officers' time required is obtained by multiplying the number of felony filings by 24.



If judges and quasi-judicial officers share responsibility for processing particular events, task weights are still helpful. For example, the quasi-judicial officer may handle all initial appearances and arraignments in felony cases, yet only process one-half of the preliminary hearings. In this situation, the quasi-judicial officer weight would be calculated by summing 6 minutes (the initial appearance task weight), 8 minutes (the arraignment task weight), and 5 minutes (one-half of the preliminary hearing case weight), leading to a quasi-judicial officer weight of 19 minutes.

Finally, individual task weights can facilitate experiments using various combinations of judges' and quasi-judicial officers' time. For example, would it be profitable for a one-judge court to hire a part-time quasi-judicial officer to handle preliminary hearings and pretrial hearings and motions in juvenile delinquency and Children in Need of Protective Services (CHIPS) cases? Specific task weights for the cases and events in question make it possible to quickly estimate the amount of quasi-judicial officer time required and the concomitant effect on the judge's available time for other matters.

## **INVESTIGATING THE IMPACT OF COURT SIZE**

Should established case weights be applied to the entire states, or do larger courts require a separate weighting scheme? This question plagued California because the county of Los Angeles is so large that Los Angeles cases significantly affect the weights of the entire state. This question has been answered differently by the states that currently employ weighted caseload. Minnesota, New Mexico, and Washington use a single weighting scheme for the state. Wisconsin has historically calculated separate weights for Milwaukee; the recent NCSC review of case weights recommended that this distinction be eliminated. Colorado uses different weights for urban, rural, and county courts.

**Guideline 9** *A single set of case weights for judges and for court support staff within a state is preferable. Weighted caseload studies, however, should evaluate differences in time requirements or case mix across courts of different sizes to determine if separate weights are needed.*

### **Court Size and Event Processing Time**

Does event processing time vary according to court size? For example, is the average time required to complete an initial appearance in a felony case comparable throughout the state, or does time necessary to complete a case activity vary by court size? The empirical guide developed here for determining whether the size of the court affects the time required to conduct each hearing and appearance begins with the separation of courts into different sizes in a hypothetical state. One method is to compare event times in the state's largest court (e.g., Los Angeles, Milwaukee) with the rest of the state. Another approach is to make a finer distinction in court size by grouping courts into several

categories based on the number of judges (e.g., single-judge courts, multi-judge courts, and very large courts).

The average time to process each case event is then calculated separately for each size of court and a statistical test is used to determine whether case processing varies systematically by size of court.<sup>39</sup> Obviously, the average times to process case events are not expected to be identical among any set of courts, regardless of how chosen. Statistical analysis, however, answers the question of whether the differences are significant enough to justify separate weights.

Alternative statistical techniques are available depending on whether or not the data is normally distributed. If one assumes a normal distribution, then the analyst may wish to use analysis of variance or dummy variable regression to test whether the event processing times for each event are similar among the groups.<sup>40</sup> Assigning a separate variable for each group (called a dummy variable) allows differences in event times by group to be easily seen and evaluated statistically.

If the data appears to be distributed non-normally and you wish to distinguish between more than two groups, a k-sample median test may be used. Table 13 shows, for example, how the median event processing time for selected events in felony cases varies between courts of four different sizes in a hypothetical state. If the observed significance level is fairly large (e.g., greater than .05), the chi-square test suggests that there are no real differences in the median times. In this example, statistically significant differences are noted by a check mark. Note that some median times are quite close even though the chi-square test shows that there is a statistically significant difference between the courts (e.g., initial appearance). On the other hand, some differences in event times that appear “large” will not be statistically significant. For example, although the average time to conduct a preliminary hearing varies from 17 minutes in large courts (Group 3) to 30 minutes in single-judge courts, the differences were not statistically significant. The statewide average of 17 minutes is a good estimate for all four groups.

It is important to remember that these statistical tests are best viewed as *guides* to analysis, not straitjackets. A variation could be large enough to be statistically significant without making any practical difference to decision makers.

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<sup>39</sup> As discussed earlier in this chapter, the appropriate statistical test should be chosen based on an examination of the underlying distribution of data.

<sup>40</sup> Analysis of variance is the traditional method for determining whether differences among groups are statistically significant. This statistical technique is designed to determine whether or not a particular classification of data is meaningful. The total variation in the dependent variable (i.e., event time) can be expressed as the sum of the variation between groups and the variation within each group. This information is used to construct an F-test to test if variation in event times *among* the groups is much larger than the variation in event times *within* groups. If dummy variable regression is used, the coefficients turn out to be the group means and the analysis of variance F-test is equivalent to asking whether or not the dummy variable coefficients are significantly different from each other. The main advantage of the dummy variable approach is that it provides estimates of the magnitudes and significance of group variation. For example, rather than simply learning from the F-test that there is disparity among the groups, it is possible to examine which group(s) is most different.

Where differences do occur, it is often in situations in which the number of event times within a given group is small and a few outliers can strongly affect the results. In other instances, an event time that is significantly lower for one group may highlight a situation in which case pressure is forcing judicial personnel to process particular events too quickly. One benefit of periodically updating the case weights is to build in adequate time to properly handle each event. Finally, some of the biggest differences in event times come in events that occur infrequently in all courts, particularly trial time. Because typical event time is weighted by the frequency of occurrence, a state average for event time can often be used without significantly affecting the case weight.

This same technique can be used to test for the relationship between court size and frequency of occurrence of case events. If event frequency information is available statewide, however, it may be better to use statewide averages rather than event frequency data from just the courts participating in the study. Statewide averages make use of data from throughout the state to calculate the overall frequency of event occurrence. Therefore, extreme values from any one court will not have undue influence in the final calculation.

**Table 13: Comparing Median Felony Event Processing Time Across Courts of Different Sizes**

Events	Median Time to Process Event in Minutes (Number of Events)					Significant Chi-Square at .05 Level
	Single Judge Courts	2-8 Judge Courts	9-16 Judge Courts	Metropolitan Court	Statewide Median	
Initial Appearance	6 (38)	5 (118)	5 (161)	6 (33)	5 (350)	✓
Preliminary Hearing	30 (20)	20 (46)	17 (181)	21 (15)	17 (262)	
Arraignment	20 (3)	9 (58)	4 (105)	8 (296)	7 (462)	✓
Scheduling/Pretrial Conference	15 (7)	10 (19)	15 (21)	15 (195)	15 (242)	
Pretrial Hearing/Motions	15 (25)	10 (107)	15 (132)	12 (383)	15 (647)	
Default Judgment/ Plea Acceptance	15 (5)	15 (35)	15 (117)	15 (165)	15 (322)	
Post-Judgment/Verdict Hearing	30 (7)	15 (23)	15 (54)	15 (32)	15 (116)	
Disposition/Sentencing Hearing	15 (29)	18 (44)	15 (189)	20 (230)	18 (492)	
Bench Warrant		10 (26)	3 (59)	5 (74)	5 (160)	✓
Appeal/Reviews		15 (6)	3 (69)	11 (32)	5 (107)	✓

## **Chapter VI**

### **Weighted Caseload for Court Support Staff**

The reasons and basic principles for using a weighted caseload system for judges applies with equal force to court support staff. The smooth functioning of a court depends on the court support staff having adequate time to complete their workloads. A weighting procedure allows a court to account for the work required of court support staff explicitly. Moreover, the process of conducting a weighted caseload study for court support staff is beneficial because it provides people throughout the courthouse with a much clearer understanding of the scope and content of the work performed by these employees.

This chapter will outline a weighted court support staffing model based on case filings. If support staffing criteria are linked to a “case-based” workload assessment, variation in caseload can be used to determine the need both for court support staff and for judges.

#### **DEALING WITH COMPLEXITY**

Developing a useful, workable means for assessing the need for court support staff is a complex, multifaceted endeavor. As Nobel laureate Herbert Simon (1981:195) noted: a complex system is “one made up of a large number of parts that interact in a nonsimple way.” Simon’s central thesis was that it is possible to “defeat” complexity and thereby understand the workings of complex systems only if we can describe the complex system in a relatively simple manner. This process involves creating a conceptual framework for examining the work of court support staff that focuses attention on the key areas of work and the most important interrelationships for court support staff.

This chapter illustrates one possible way to develop a weighted caseload system for court support staff. While many steps are similar to the weighted model discussed earlier for judges, applying the technique to court support staff introduces a number of additional considerations. A critical first step is to develop a solid understanding of the scope and content of work carried out by the particular court support staff being examined. While an answer of “everything but adjudication” may be close to the truth, the nature of the work must be defined specifically.

#### **THE PROCEDURE**

The steps involved in undertaking a weighted caseload study for court support staff are basically the same as those used in the judicial weighted caseload technique:

1. Identify court support functions and positions.
2. Select the sample of participating courts.
3. Develop a clear and detailed understanding of the work of court support staff.

4. Choose the types of cases to be examined.
5. Build the weights.
6. Interpret the final task and case weights.
7. Determine the amount of support staff time available.
8. Determine the number and type of court support staff needed.
9. Institute procedures to keep the weights current.

Determining the multitude of specific tasks and activities that characterize court support staff workload is a relatively complex task. The issue becomes one of determining the level of detail necessary to cover the basic tasks involved in case processing. The following procedure offers a basic framework for building a staffing needs assessment and shows how to augment the information collected to allow for greater specificity.

### **Step 1: Identify Court Support Functions and Positions**

The quality of a court support staff weighted caseload study depends greatly on the initial investment in framing the study, defining the staff involved, and specifying the activities to be measured. Several factors should be taken into consideration.

#### ***Court Organization and Jurisdiction***

Most state trial court systems are divided into two court levels—courts of general jurisdiction and courts of limited jurisdiction. Which court level is the support staffing model geared toward, and who does the work? State statutes typically authorize the creation of the courts at both the general and limited jurisdiction levels and help frame their specific structure, their operation, and the types of cases heard. A review of the court's authority (in statute) helps build a working knowledge of the scope of work handled by the court and serves to alert the analyst to any recent (or pending) legislative changes that may impact the work of court support staff.

Beyond evaluating the statutes, though, it is important to be clear about actual practice. At the general jurisdiction level, for example, the functions of the court may be divided up among (1) the county clerk's office, (2) the court administrative office, and (3) other offices (e.g., juvenile or family service offices). Further, the functions performed by these groups may vary between courts in a particular county or throughout the state. For instance, some jurisdictions will not have a formal court administrative office, so the clerk's office will perform the functions otherwise handled by a court administrator. Likewise, in some jurisdictions, probation services are provided by the court, while in others they are an executive agency responsibility.

### ***Comparability of Procedures***

At an early stage in the study, the analyst needs to develop a working knowledge of the similarities and differences in how courts process cases. Relevant differences in clerical procedures and the level of service across courts are likely. A critical challenge to using weighted caseload for court support staff is assessing the comparability of procedures and developing a means for dealing with differences. For example, one court may accomplish a particular task by following ten steps in a particular order, while another court completes the same task by substituting some procedural steps with others and performing these steps in a different order. The challenge is to develop ways to assess the specific differences encountered and to draw conclusions about the quality and speed with which the tasks are performed.

### ***Position Classification***

Building a profile of the work done by support staff requires an understanding of the responsibilities of each position. Determining which individual staff position is responsible for a particular job may be a more difficult task than determining the functions performed by the judge. Adjudication is typically handled by someone called a judge (with quasi-judicial officers, such as commissioners, magistrates, or other well-understood title performing specified judicial tasks). At the court support level, though, similar uniformity of position title may not exist. Individuals with titles such as clerk, clerk 1, legal clerk, or deputy clerk may all be doing a similar job in some courts and different jobs in others. An early goal of a court support staffing study should be to clarify which positions do which jobs in the court and to compare position titles with associated duties and responsibilities. More similarity may exist between administrative (e.g., court administrator or court clerk), specialized technical (e.g., court reporter or MIS director), and professional (e.g., counselor) positions. An existing job classification system may provide guidance by providing job descriptions, discussing levels of responsibility, and distinguishing between different job levels. Remember, though, the purpose of this phase of the study is to delineate clearly what each staff member actually does, not what they might theoretically do. For this reason, position classification systems should be used with care. Position analysis is needed to provide a uniform terminology for discussing duties assigned to each position and a clear and orderly method for grouping court support activities by function.

## **Step 2: Select the Sample of Participating Courts**

The information to construct a weighted court support staffing model should be gathered from a representative sample of courts. As was discussed in more detail in the chapter on judicial weighted caseload, the sampling goal is to obtain information from a variety of courts, both large and small, that can be generalized to all courts in the county or state. Three criteria are highlighted below:

### ***Geographic Diversity***

Possible differences in case mix, local legal culture, and available resources in all areas of the county or state should be included in the sample.

### *Use of Automation*

Courts vary significantly in their use of automated systems for tracking court activities, including case maintenance, calendaring, and money received from fees, fines, and restitution. Access to information that details the frequency with which court support staff perform their primary duties is critical to the success of a weighted caseload system for court support staff. The easier it is to gather time and frequency data, the better. To the extent that this information can be drawn from the court's existing management information system—rather than manual files or a Delphi technique—a primary cost and source of difficulty can be reduced.

### *Court Size*

The demands on court support staff time may vary according to the size of the court. The manner in which a court is organized may vary by size, leading to, for example, differing degrees of consolidation between court administration and the county clerk. For example, one National Center study showed that a court using a team approach to case management could reduce the number of employees in a clerk's office.<sup>41</sup> In addition, the size of the court may be related to certain economies (or diseconomies) of scale in the use of staff. Finally, larger and more congested courts may have an extensive backlog of pending cases or a more serious mix of cases that require a different configuration of court support staff, or more need for supervisors.

Once the courts have been selected for participation in the study, it is necessary to choose a time frame for the data collection and hold an orientation session for participating staff. It is recommended that a time period be chosen that represents a court's regular processing cycle during the year. Collecting data over a four- to six-week period is usually more than sufficient, although a shorter period of data collection may be appropriate.

A time study is complex. Orientation sessions should be held to acquaint staff with the process and data collection procedures and to answer questions.

### **Step 3: Develop a Clear and Detailed Understanding of the Work of Court Support Staff**

Court support staff can be divided into two basic areas: case processing staff in the clerk's (or administrative) office and courtroom staff to support judges. Staff in the clerk's office perform a range of general functions such as accepting court documents, assisting the public, record keeping, and the collection and accounting of fees and fines. Staff in the courtroom are responsible for handling activities that are directly generated by courtroom events. This work includes recording minute entries, managing the judge's calendar, and monitoring jury summoning and assembly. The analyst must identify and track changes in those mandated functions in workload arising from legislative or court rules.

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<sup>41</sup> Lorraine Moore Adams, Cynthia Eusterling-Smith, and William Popp, "Case Management by Teams," *State Court Journal* (Fall 1979), pp. 15-20.

One workable technique is to survey a set of court support staff, court administrators, and judges to develop a matrix of duties that must be performed by court support staff. Who, for example, manages the judges calendar? In some courts it may be the “judge’s secretary” or “administrative assistant,” while in other courts this person is called the “court coordinator” or “courtroom clerk.” An existing position classification system provides one place to start. Determining and structuring what court support staff do in a clear and coherent fashion is a major phase of the overall project.

The next stage is to determine what functions and activities are handled by the court being examined. This requires that the analyst clearly and explicitly account for all important tasks and duties performed.

The following draws on a classification scheme that was used in Washington state for information system planning. It is a highly useful starting point for *any* court wishing to conduct a weighted court support staffing study. The classification distinguishes between nine primary areas of work common to all courts. Of course this list should be adjusted for the full range of specific tasks conducted in each particular court. This scheme distinguishes between “characteristic” and “noncharacteristic” functions of the courts. “Noncharacteristic” functions are those basic to all organizations, public or private, such as budget and finance, personnel management, and facilities management. A “characteristic” function applies specifically to the courts. A simplifying decision is to examine and document only characteristic functions of the courts. While perhaps not an optimal design, it keeps the focus on court support staff and still leaves plenty of work to do. Moreover, it avoids the need to involve local government executive agencies that have a large stake in the finance, personnel, and facilities of all government agencies. But if dealing with court budgets, for example, is a central part of the job, this task should be included in the weighted analysis.

The basic (characteristic) functions of court support staff are summarized below.<sup>42</sup>

Case processing:	Filing, docketing, and case-person indexing; assisting litigants regarding conditions of case or documents; updating the case record (e.g., minutes); providing summaries of financial transactions; duplicating documents; transmitting documents to other courts; notifying department of licensing about judgments related to motor vehicle and traffic cases
Calendar management:	Scheduling cases, assigning cases, and handling notifications of hearing dates; screening records’ completeness and consistency; screening cases for procedural compliance prior to proceeding; scheduling events
Records management:	Maintaining cases and exhibit records; managing file storage, archiving, and destruction; managing file checkout and security; designing, inventorying, and distributing forms
Financial management:	Managing the receipt and disbursement of money; handling bail, child support accounts, time payments, and installments; formulating budgets, negotia-

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<sup>42</sup> The major function areas outlined in this section are drawn from the *Data Administration Functional Model*, Office of the Administrator of the Courts, Olympia, Washington, 1986.



	tions with state or local funding agencies
Courtroom support:	Maintaining courtroom files and minutes of proceedings; handling in-court exhibits and security; empaneling juries; court reporting, maintaining responsibility for sound and video equipment, court interpretation services, secretarial support, and the law library
Monitoring and enforcement:	Monitoring compliance with such matters as garnishments, appeals, probation reports, child support payments, fee collections; monitoring compliance with court orders and treatment requirements
Jury management:	Listing all upcoming jury trials; managing juror list and summons; overseeing assembling of jurors on trial day; assisting with empaneling
Social work:	Aiding the court in evaluating and making appropriate decisions about clients; assisting clients under court supervision to comply with court orders
Other:	Attending conferences and receiving training; traveling between courts; down time, vacation, illness

Meeting the needs of every client and case that enters the court will require court support staff to complete some or all of these activities. The weighted caseload technique is designed to measure how many court support staff are necessary to provide each case with the appropriate amount of time and attention. The weights make explicit the full range of activities that must be undertaken to move a case from filing to disposition. Like the judgeship needs model, the court support weighted caseload model is built around case activity. The model articulates the activities necessary to process each type of case, and then the analyst provides estimates of the time each activity typically takes and measures the frequency with which each activity occurs. Pulling this information together in a similar fashion to the judicial model creates the case weights. Multiplying the case weight by the total number of raw filings provides an estimate of the amount of court support time needed to process the quantity of each case filed.

#### **Step 4: Choose the Case Types to Be Examined**

Case types selected should represent the full spectrum of cases processed by the court. The statistical reporting categories found in many automated and manual systems are often refined enough to serve this purpose. Table 14 shows the case types employed by three jurisdictions that have experimented with a weighted court support staffing model: the general jurisdiction courts of California, the limited jurisdiction courts of King County in Washington, and the general jurisdiction courts of Missouri.<sup>43</sup>

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<sup>43</sup> For more information on the California and King County models, please see Arthur Young and Company, *Non-Judicial Staffing Study, Final Report Prepared for the Judicial Council of California* (Sacramento: Arthur Young and Company, 1974) and Department of Budgeted Program Development, "Northeast District Court, Clerical Work Management System," unpublished study (March 1978).

**Table 14: Case Categories for Court Support Staff in Selected States**

<b>California Superior Court (General Jurisdiction)</b>	<b>King County District Court (Limited Jurisdiction)</b>	<b>Missouri Circuit Court (General Jurisdiction)</b>
Criminal	Domestic violence/antiharrassment	Civil
Juvenile delinquency	Civil and impound hearings	<ul style="list-style-type: none"> <li>• Associate civil</li> </ul>
Juvenile dependency	Small claims	<ul style="list-style-type: none"> <li>• Small claims</li> </ul>
Probate	Parking	<ul style="list-style-type: none"> <li>• Circuit civil</li> </ul>
Family law	Infraction (non-parking)	<ul style="list-style-type: none"> <li>• Domestic relations</li> </ul>
PI/PD and other civil complaints	All criminal and DUI	<ul style="list-style-type: none"> <li>• Child support</li> </ul>
Mental health	Inquests	<ul style="list-style-type: none"> <li>• Juvenile</li> </ul>
Appeals	Felony: preliminary hearings	Criminal
Juvenile traffic		<ul style="list-style-type: none"> <li>• Traffic/municipal</li> <li>• Misdemeanor</li> <li>• Felony preliminary hearings</li> <li>• Felony</li> <li>• Watercraft/conservation</li> </ul>
		Probate
		<ul style="list-style-type: none"> <li>• Probate estates</li> <li>• Mental health petitions</li> <li>• Probate abr. matters</li> </ul>

## Step 5: Build the Weights

The utility of the court support staffing model depends on an accurate segmenting of each type of case into its key events and activities. Much of the difficulty and expense of conducting a court support needs assessment revolves around the level of detail used to describe case processing. The models developed in California, Washington, and Missouri provide three examples that show the range of detail possible and the trade-offs involved.

This step involves three major aspects of the weighted caseload study:

1. Define the activities necessary to process each type of case.
2. Calculate average amount of staff time per event and average frequency of occurrence.

*Measuring time per event.* After the procedures/events to be studied have been chosen, the time each event requires can be directly measured by staff or observer or can be estimated through a Delphi approach. If an observer is used, he or she should measure the same procedure several times to ensure a reliable estimate of typical time necessary to complete the activity. Either all personnel who normally accomplish the activity or a representative sample of regular employees should be used in the study. People who do not normally perform the task could unduly affect the times recorded.

As discussed in Chapter IV, discrete events (those that can be easily separated and measured) may be tracked individually on time logs. Repetitive, short case processing events may be measured by volume. For example, the time spent preparing for and monitoring a court trial may be measured as a separate event. On the other hand, an hour spent filing 60 docket cards could be measured as “60 minutes—60 docket cards filed,” or an average of one minute per filing.

*Frequency of event.* The newest automated case management systems hold the greatest promise for gathering frequency of event information in an ongoing, cost-effective manner. As this handbook goes to press, however, few automated systems are being used to their potential as a foundation for building a court support staffing system. For the most part, counts of procedural activities still must be collected manually from statistically valid samples of disposed case files. Different sources of information (which may vary by court) should be used to complete this difficult task. Generally, docket cards or ledgers of case activity provide a good source for this information, while other documents within the case file can also be used.

If the task of gathering frequency of event information is proving overly burdensome because of the varying completeness of court dockets and file documents, event data collection may be limited to a subset of the courts participating in the study. To make sure that the study remains representative, the researcher should make every effort to keep small, medium, and large courts in the analysis.

### 3. Construct the task weights and final case weights.

When gathering information on time per event or frequency of event, the most care should be directed to ensuring that accurate measures are obtained for events that have a significant impact on the case weight. That is, pay particular attention to activities that either require the most time or those that occur with the greatest frequency. Recognizing the importance of these “high impact” activities—and not obsessing about the infrequent or very short activities—is one approach to help get the most out of a limited budget for a court support staffing study.

#### ***The California Approach***

***Activities.*** The California Judicial Council pioneered the use of weighted caseload for court support staff just as they pioneered its use for judges. The California design initially involved applying ten case-related activities and 14 non-case-related activities to each of the principal case types handled by each court level.<sup>44</sup> These 24 activities for the Superior Court of California are shown in Table 15.

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<sup>44</sup> To show a range of alternative designs for building a weighted staffing model, this discussion focuses on the California model introduced in 1974. Case weights for municipal and justice courts were updated in 1983 for ten case types and nine categories of indirect case-related time. The process was simplified by measuring

One quickly notes that these activities are quite general. They are little different from the broad categories of court support work outlined in Step 3. In completing their daily “time/activity report” during the time study, the California court support staff were asked to classify the time spent on every separate activity into one of a handful of broad categories. There is no attempt made to distinguish, for example, the different types of calendaring activities and circumstances that may be present for a criminal case. For instance, setting a hearing for a criminal case (e.g., locating the file, scheduling date with the attorney/defendant, entering date into computer) may take less time when the parties are present than when the parties are not present (i.e., the latter will require additional time for phone calls). In addition, calendaring a criminal motion hearing may take more time than calendaring a continuance. Finally, it may be necessary to set a hearing with an interpreter in some instances, but not others.

**Table 15: Activities Measured by California’s Weighted Caseload Study of Court Support Staff**

<b>Case-Related Activities</b>	<b>Non-Case-Related Activities</b>
Case Initiation, Document Acceptance, and Counter Activities	Court Administration/Indirect Supervisions/Administrative Support
Preparation of Finished Minutes, Orders, Judgments, and Issue Writs	Judicial Secretary/Steno and Other Judicial Assistance
Notification of Court Actions	Other Secretarial/Stenographic, Receptionist, Correspondence, and Communications
Register of actions, recordkeeping, and case maintenance	Accounting Activities (Non-Case-Related)
Calendaring Activities	Juror Qualification
Investigation, Counseling, and Probate Examination (Including “OR” Investigation)	Juror Summoning
Legal Research—Case-Related	Juror Assembly Room Supervision and Records Maintenance
Courtroom Activities (Excluding Traffic Hearing Officer)	Judicial Council and Other Statistical Report Preparation
Direct Supervision—Related to Above Activities	Personnel/Payroll Services
Juvenile Traffic Adjudication Activities (Traffic Hearing Officers Only)	Conference Attendance/Training
	Travel Between Courts
	Vacation
	Illness/Lost Time/Absence
	Non-Court-Related Activities (County Clerk’s Office)

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the total time spent performing all activities cumulatively within case categories, rather than measuring time spent on each individual activity. These case activity totals were supplemented by four categories of non-case-related time: conference attendance/training, vacation, illness/lost time/absence, and non-court-related activities.

**Table 16: Criminal Case Weights for Court Support Staff in the California Superior Court**

	Los Angeles Superior Court			California Without Los Angeles Superior Court		
	Average Time	Frequency of Event	Task Weight	Average Time	Frequency of Event	Task Weight
Case Initiation, Document Acceptance, and Counter Activities	87.8	1.0	87.8	62.1	1.0	62.1
Preparation of Finished Minutes, Court Orders, Judgments, and Warrants	7.9	12.1	95.3	17.1	7.5	128.0
Record Keeping, Case File, and Register of Actions Maintenance	188.0	1.1	204.9	144.1	1.1	154.2
Notification of Court Actions	16.6	1.9	30.8	16.6	1.8	30.2
Calendaring Activities	15.2	3.7	56.6	10.2	8.3	84.8
Own Recognizance Investigation and Processing	200.4	1.3	266.6	214.4	.1	19.6
Courtroom Activities	282.2	1.1	307.6	219.7	1.1	235.1
Jury Services	755.2	.1	64.6	1,462.2	.1	128.4
<b>SUBTOTAL</b>			1,114.2			842.4
Legal Research			3.0			12.9
Direct Supervisions			73.2			37.4
<b>TOTAL FILING WEIGHT</b> <b>(Minutes per Filing)</b>			<b>1,190.4</b>			<b>892.7</b>

Taken from *Non-Judicial Staffing Study, Final Report Prepared for the Judicial Council of California* (Sacramento: Arthur

**The weights.** Table 16 shows the task weights and final case weight for criminal cases in the Los Angeles Superior Court. By accounting for all calendaring activity, for example, in one broad category, the California approach makes data collection easier. On the other hand, by not distinguishing between different types of calendaring activity (e.g., hearings, motions, continuances), the approach is not able to fine-tune the court support weights. Calendaring activities have an average time of 15.2 minutes per setting, and there are 3.7 calendaring events per criminal case.

### ***The Washington State Approach***

The King County District Court is implementing a far more comprehensive and detailed court support staffing model. The goal of the model is to provide court managers and funding agencies with an accurate measure of the work performed by court support staff by isolating nearly 120 separate procedural events. This is a complex, but highly functional design.<sup>45</sup>

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<sup>45</sup> The Clerical Work Management System began in Northeast District Court in 1978. The Northeast Study itself went into incredible detail—220 separate activities were measured. For example, the time it took to handle incoming or outgoing telephone calls was itself separated into 23 categories, with the most time allotted for calls necessary to schedule an arraignment (9 minutes) and the least amount of time allotted to transfer a call (.5 minutes). The other categories of telephone calls were classified by type of person in the conversation (police, juror, judge, trial court administrator, prosecutor, or probation staff), by nature of the case (small claims, civil case, or warrants), or type of activity (set a magistrate hearing or conversation with defendant or attorney re-

**Activities.** As is evident from the sample of ten case activities taken from the nearly 120 activities described in the King County study, displayed in Table 17, determining and defining the primary activities performed by court support staff consumed a significant amount of time and staff resources. The King County District Court also drew on the knowledge and expertise of the individuals who will be affected by the court support staffing study.

The activities described in the King County study are all case-related. In addition to direct, measurable activities, the final weights incorporate an overhead factor to account for indirect, administrative time. Activities related to the daily operation of the court that are not case-related need to be added to the workload generated by the filings. Some examples include handling a general contact at the counter (except those to set a trial or arraignment date or to accept monetary payment), the daily closing of the cashier windows, opening and delivering mail, and other miscellaneous errands. These overhead factors may be calculated for each specific type of case.

Target times for each separate activity were developed through observation of typical employees in an average working situation. The target times are the average amount of time it actually took to perform each activity under normal circumstances. An additional check on validity is provided by having the times reviewed by court and administrative office staff. Questionable time or frequency information must then be verified and/or adjusted by court staff. The detailed description of each activity used in the King County study helps ensure that the time measurement is clearly tied to a discrete and defined event. The average time and frequency of occurrence of the overhead factor was determined through the use of a Delphi exercise with administrators. Calculating the overhead factor requires a blend of observation, file research, and expert opinion.

**The weights.** The King County District Court staffing model is based on case filings. Once the general set of activities is defined, the goal is to allocate to each specific case type all activities applicable. To keep the weights current, court staff periodically review the activities included in the weights and reexamine the times and frequency of occurrence data. Table 18 shows the measured activities used in the King County model to process a parking case in (a) the current model (established in 1989) and (b) the model of revised activities being developed to update the parking weights in 1996.

Note that the parking weight of 10.3 minutes derived in 1989 is calculated by developing a task weight for each activity. Because the complete 1996 weights have not yet been determined, Table 18 shows only the revised and expanded set of activities that will be used to build the new parking weight. Average times have been calculated for some, but not all, activities, while frequency of event information and the final task weights await completion.

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garding jury trials). Since 1978, the King County District Court Clerical Staffing Study has been updated twice. The first update of the workload study conducted in 1989 pared the number of events in addition to management activities to 126. Court personnel are updating and revising the study again in 1996. Outdated and inaccurate activities are being rewritten, while obsolete activities are being deleted and similar activities are being combined when appropriate. The reconfigured set of activities are now being applied to all appropriate case types.

**Table 17: Sample Activities and Descriptions Used in the King County Study**

1. **Receiving and sorting infractions, citations, parking, and investigations**  
Receive bundle of tickets. Separate parking, infractions, investigation infractions, and criminal citations. Date stamp all but criminal citations and give to input clerk. Give criminal citations to prosecutor's office.
2. **Receiving criminal complaint from prosecutor and setting arraignment**  
Receive bundle of citations and file stamp. Review complaint for amended charge. Set arraignment court dates. Calendar arraignment date, time, and courtroom number. Make docket entry and list miscellaneous paperwork filed.  
  
Go to appropriate/bail screen, order summons/bail notices. Go to appropriate screen and order labels. Call up summons/bail screen, order print. Remove paper from printer, get forms, thread into printer. Align printer, print dummy form to check alignment. Print.
3. **Setting, entering, and mitigating contested hearing date**  
Take letters requesting dates and green copies of citations. Pull citation. Take these and calendar to terminal. Check open date or requested date on calendar and assign hearing date. Note on citation and on request letter. Enter case in system; call up hearing screen and enter kind of hearing (e.g., mitigation), date, time, courtroom number, and judge's name. Check address, and change if incorrect.
4. **Running and sending notices for mitigation and contested hearings**  
Go to terminal, enter appropriate hearing data, and order hearing notices to be printed. Go to printer, remove paper, thread in hearing notice strip. Print dummy notice, check paper alignment and correct if necessary. Print hearing notices. Remove hearing notice strip from printer, thread in regular paper. Collect notices. Delete order from computer. Go to desk and burst notices. Sort by city, by state, and by hearing time. Get file appropriate for hearing date and take to desk. Remove citations and alphabetize. Take out envelopes. Stuff copy of notice in envelope (yellow copy for contested hearing, green for mitigation). Paper clip or staple white copy to citation. Discard unneeded copies. Double-check names, address, hearing date, and time. Handle any special circumstances as necessary. Set stuffed envelopes aside for mailing.
5. **Setting bench/jury trial, sending subpoena**  
Look up date of filing on docket screen, write on trial-setting slip. Schedule trial date using information available on police officers' schedules. Note hearing date on officer's card and in log book (also enter citation number, name, and charge in log). Enter date, judge, courtroom, and time on calendar screen, and enter names of witnesses to be subpoenaed on witness screen.
6. **Setting hearing criminal/civil (parties not present)**  
Pull file. Telephone attorney to set date and time, consulting master calendar for open times. In cases involving contract attorneys, set date and time appropriately as available on master calendar. Enter hearing date and time in computer.
7. **Setting motion hearing (criminal, infraction)**  
Call up docket screen. Set hearing date within constraints (e.g., continuance for 90 days) with judge who has previously heard case. Prepare and print summons, and send copy to defendant. Send subpoena to officer, and witnesses, if appropriate.
8. **Receipting time payment into system**  
Call up appropriate screen and identify case in computer. If multiple cases are located and payment is on a specific case, remove case from time pay account. Enter amount paid and name of payor. Make sure case number is on check. Print receipt. Put case back on time pay if appropriate. When account is paid in full, pull file and return to desk. Close on case disposition screen if appropriate.
9. **Manual receipting**  
When computer is unavailable for receipting, receive payment and retrieve manual receipt book. Complete manual receipt with appropriate information. Burst receipt and give payor original.
10. **Posting bail/bond**  
Pull file, receive money, and receipt bail into system. Assign court date, give defendant date and courtroom number, notify attorney. Enter court information into computer, amend calendar, note date and courtroom information on outside of case file. Recall warrant if appropriate. Refile file and return to desk.

**Table 18: Building the Weight for Parking Cases in King County:  
Comparing the Weight in 1989 with the Revised Weight in 1996\***

1989				1996	
Activity	Average Time	Freq. of Event	Task Weight	Activity	Average Time
1. Enter citation.	1.6/citation	100.0	1.6	1. Receive and sort infractions, citations, parking, and investigations.	1.9/citation
20. File citation in file.	0.2/citation	100.0	0.2	9. Enter parking infraction.	NYC**
2. Set, enter mitigation or contested hearing date.	2.3/hearing set	6.7	0.2	11. Set, enter mitigation or contested hearing date.	2.3/Hearing Set
3. Run, send notices for mitigation and contested hearings; print calendar.	3.4/calendar item	67	0.2	12. Run, send notices for mitigation and contested hearings.	3.4/Hearing Set
79. Mitigation hearing (court time).	4.5/occur.	6.6	0.3	13. After court work, contested or mitigation hearing.	3.8/Hearing Set
80. Contested hearing (court time).	3.9/occur.	1.7	0.1	14. Set show-cause hearing (infractions).	3.0/Hearing Set
4. After court work, mitigation or contested hearing.	3.8/hearing heard	8.3	0.3	16. Mark cases for collection.	NYC
12. Set hearing (all other).	4.5/occur.	1.0	-	19. Set hearing criminal/civil (parties present).	4.2/Hearing Set
75. Close out unpaid parking citation.	3.8/occur.	40.3	1.5	20. Set hearing criminal/civil (parties not present).	8.1/Hearing Set
95. Process forfeiture.	5.1/forfeit	48.9	2.5	21. Set motion hearing (criminal, infraction).	4.5/Hearing Set
97. Process parking	4.7/ procedure	4.0	0.2	29. After court work, review hearing.	3.9/Hearing Held
82. Other participatory hearing (court time).	4.6/occur.	1.0	-	37. Prepare criminal/civil/infraction appeal	NYC
31. Prepare, transmit appeal.	45.0/appeal	2.3	1.1	38. Process case remanded from Superior Court.	8.0/Remand
116. Close case.	3.6/case	59.7	2.1	40. Receipt time payment into system.	1.5/Payment
<b>Parking Case Weight</b>			<b>10.3</b>	42. Manual receipting.	NYC
				43. Process forfeitures (infraction, parking, and forfeitable criminal).	5.1/Forfeiture
				44. Posting bail/bond.	17.5/Citation
				46. Bail/bond forfeiture.	NYC
				47. Clerical reviews.	NYC
				48. Destruction of records (infractions).	NYC
				49. Mitigation hearing (court time).	4.5/Hearing Held
				50. Contested hearing (court time).	NYC
				57. Other participatory hearing (court time).	4.6/Hearing Held
				95. Prepare, order, and print all calendar types by day, week, etc.	NYC
				96. Pull files for calendar.	NYC
				97. Prepare files for calendar.	1.2/Case
				98. Process papers for cases previously filed.	2.7/Case
				99. Arrange for interpreter.	3.4/Hearing Set
				100. Docket court action after court.	5.6/Hearing Held
				101. Prepare cost bill for witness fees/interpreter voucher.	3.4/Invoice
				102. Prepare tapes.	12.3/Request
				103. Prepare change of venue/order of transfer.	20.0/Order
				104. Close case (file folder and in computer).	3.6/Case



\* As this report goes to press, the 1996 revised weights are not yet complete. While the revised set of activities have been determined, the individual task weights have not yet been calculated.

\*\* NYC: Not Yet Completed

### ***The Missouri Approach***

Missouri, a pioneer in using weighted caseload to measure need for court support staff, uses a less detailed and comprehensive alternative to the Washington approach.<sup>46</sup> Missouri has defined court support staffing weights for 14 specific types of cases within three general case categories (displayed in Table 14). During the time study, court support staff were asked to report how they spent their time in 15-minute blocks throughout the work day. Staff assigned each 15-minute “work period” to a particular type of case and to one of four “case activity categories” (shown in Table 19).

For example, a phone conversation with an attorney discussing an adoption case would be recorded as 15 minutes of “processing activity” in a “juvenile case.” This information on the time and frequency of each activity is used to build the court support staffing weights. The strength of the Missouri model is in its simplicity. The number of activities being measured is kept to a minimum and measuring activity’s time using 15 minutes work periods eases the burden of data collection on staff.

**Table 19: Case Activity Categories in Missouri**

Filing Activity	Receive petition, application; assist pro se petitioners; assign case number, prepare case file; prepare index record, prepare docket sheet; collect deposit, security, bond; issue initial summons, warrant; other case filing activity
Processing Activity	Make docket entries after initial filing and before disposition; prepare, send notices; file motions, pleading, correspondence; schedule hearings, trials; prepare for court; perform courtroom duties on pretrial matters; perform jury-related work; complete financial activity prior to case disposition, bank reconciliations; issue first notice on dismissal dockets; other case processing activities  For probate cases: process appraisal, inventory; audit, process, file annual settlements and status reports; process claims against estate, prove will; prepare for, process sale or lease of property; process homestead, living allowance, exempt property
Disposition Activity	Perform courtroom duties on pleas, uncontested matters and trials, preliminary hearings; prepare and send case file to another court/judge; make judgment entries, notify parties; prepare cost bill; receive, disburse costs and fees; issue final notice on dismissal docket; opening and processing Traffic Violations Bureau payments received; other case disposition activities  For probate cases: process final settlement, abatement, distribution, discharge; process compensation for attorney, personal representative, conservator, guardian
Post-Disposition Activity	Process post-judgment motions, pleadings; perform courtroom duties on post-disposition matters; prepare record on appeal, handle appeal-related activity; process execution, garnishment; receive, disburse costs, fees, and restitution; prepare delinquency notices for fines and costs; microfilm disposed case

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<sup>46</sup> Private correspondence with Linda Hope, Evaluation Specialist, Office of the State Court Administrator, Missouri, November 30, 1995.

records; other post-disposition activities

## **Step 6: Interpret the Final Case Weights**

However the weights are calculated, the reliability of the weighted court support staffing study depends on the standards being applicable to courts throughout the county or state. As the final weights are being calculated, it is necessary to assess:

- whether the procedures in the courts that will employ the standards are roughly similar and, where dissimilar, methods are available to take these differences into account, and
- whether the time taken to complete case procedures in the sample courts being used to build the weights approximates the procedures and times in all courts that will use the standards.

In compiling the weights, the analyst may find that there are potentially important differences in the time required and the frequency of specific case activities. One source of differences is that the courts participating in the study may vary in how complete and timely they are in carrying out their record-keeping activities, based on the courts' interpretation of the requirements imposed by statute or court rule. There may be differences, for example, in the volume of notices prepared, calendar management policy, minute book maintenance, or records storage and destruction procedures. While some differences are to be expected and subsumed within the final case weights, some procedural variation can be accounted for by fine-tuning individual task weights.

The strength of the Washington approach relative to the California or Missouri approach clearly emerges when it is necessary to use task weights to adjust the case weights for differences in court policy or staffing requirements. Using parking cases as an example (shown in Table 18), some jurisdictions may not print and send notices for contested hearings or a court may require some additional documentation in the file. Moreover, a large, congested court may require more time to pull and prepare files for the calendar than the target time. Such differences in procedure can be accommodated by removing or adding specific task weights within the overall case weight or by adjusting target times based on specific activities performed.

In addition to specific procedural differences in how cases are processed, there are several other reasons that court staffing requirements may vary somewhat between courts.<sup>47</sup>

### ***Responsibility for Administrative Functions***

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<sup>47</sup> These factors are discussed in more detail in the *Non-Judicial Staffing Study, Final Report Prepared for the Judicial Council of California* (Sacramento: Arthur Young and Company, 1974).

In some locations, administrative support activities are provided by the executive branch, while in other locations, the functions are handled by the administrative office of the court or the clerk's office. Earlier referred to as noncharacteristic functions, these activities include personnel services, statistical analysis, and data entry.

### ***Specialized Technical and Professional Support Services***

Because of court rule, policy, or statute, some jurisdictions provide specialized personnel to assist in improving the administration of justice. These services include mental health counseling, legal research, and courtroom interpreting.

### ***Variation in the Level of Service to the Public***

Some jurisdictions may provide services to litigants, attorneys, and the public that exceed statutory requirements. These additional services may save what would otherwise be wasted time to the parties and ultimately to the court itself. Examples of services provided by some courts but not others include thorough document review at the counter, assistance to pro se litigants, and the timely response to questions by litigants and attorneys.

### ***Minimum Staffing Requirements***

In some low-volume courts, one full-time and one part-time clerk will be needed to run the court regardless of whether workload considerations suggest that fewer staff are required. The logistics of covering the office may simply require two people whether the weighted need provides a justification or not. Therefore, in low-volume courts, the result of a time study should not be used in place of a more common sense approach to assessing court support staffing need.

## **Step 7: Determine the Amount of Support Staff Time Available**

The staff year value represents the total time (in minutes) that is available per court support staff for case-related work. The staff year value is calculated by multiplying the number of minutes available each day for court-related work by the number of available working days in the year.

### ***The Staff Year Value***

The number of available staff days is calculated much the same way as described earlier for judges. A hypothetical example is shown below:

Days per year:		365
Deduct:	weekends	104
	holidays	13
	vacation	14
	illness	7
	conferences	2
Days available:		225

### ***The Staff Day Value***

The number of minutes available each day for case-related work must also be calculated. A key decision is to determine whether non-case-related time (e.g., court administration, secretarial) will be built into case weights as an overhead factor or deducted from the staff day value.

### **Step 8: Determine the Need for Court Support Staff**

Once all the relevant case weights have been developed and available staff time determined, the two measures can be combined to produce an estimate of court support staffing need. Assume a staff year value of 98,775 minutes, based upon a 225-day year multiplied by 439 minutes per day spent on direct and indirect case-related matters. An illustration of the way the need for court support staff is determined, using hypothetical data, appears in Table 20.

**Table 20: Weighted Caseload and the Need for Court Support Staff**

Type of Proceeding	Statewide		Weighted Units
	Filing Weight	Filings	
Felonies	234	1,500	351,000
Group A misdemeanors	158	5,300	837,400
Group B misdemeanors	118	2,500	295,000
Nontraffic infractions	89	1,000	89,000
Group C misdemeanors	199	3,700	736,300
Group D misdemeanors	86	4,600	395,600
Traffic infractions	22	65,000	1,430,000
Parking	3	103,500	310,500
Small claims	74	6,000	444,000
Other civil	123	5,500	676,500
Total weighted units			5,565,300
Divided by clerk year value			98,775
Estimated court support staff needed			56.3

### **Step 9: Institute Procedures to Keep the Weights Current**

Once weights have been established, it is critical that the weights be adjusted and updated to ensure that they continue to accurately represent workload. There is no faster way for hard-won credibility to erode than for the weights to be viewed as obsolete. This periodic updating is necessary to reflect changes in case processing event times that may result from increased efficiency, statutory changes, or case management initiatives. The major cost components in updating a weighted caseload system are the same as those for creating a weighted caseload system: the collection of time and frequency information for all judicial tasks and the analysis of that information.

The following outlines a strategy for keeping the case weights up to date in a cost-effective manner.

1. Monitor the precision of the weights in a small number of courts. Purposively choose the courts to test any major concerns being raised about the weights: to what extent are the activities used to build the weights similar across courts (and to what extent does dissimilarity pose a problem), and for those activities that are similar, to what extent does performance time vary. If the activities used to process cases vary somewhat between courts, the analyst may wish to choose a court that has similar procedures to the model and one that is different. Focus on a small number of courts on a rotating basis.
2. Selectively choose activities for ongoing monitoring that have a significant impact on the case weight for assessing the need for court support staff. That is, focus on activities that have the highest frequency of occurrence and/or require the largest amount of time to conduct.
3. Choose a comprehensive sample. Select a sufficient number of activities to ensure that activities occurring in every type of case are covered.
4. Introduce procedures that allow court support staff to request and receive a review of procedures in their offices and identify areas of substantial difference from the standards adopted by the weighted caseload model. Create a means for staff to identify areas that are grossly different from the standard. The impact of any major change in administrative practice or new legislation should be checked.
5. Consider incorporating some level of individualized, court-specific time standards into the model to account for unique or highly different procedures across courts.

A highly detailed approach to assessing staff need (such as the one used in Washington) requires a maintenance or audit program, but so do the alternative approaches characterized by California and Missouri. Court procedures are dynamic, and the activities that underlie them are constantly changing. Consequently, staff functions need to be reassessed at periodic intervals and target times need to be reviewed periodically (every one or two years) to maintain accuracy.

## Chapter VII

### The Delphi Technique

The burden and cost of data collection is one of the most serious limitations of the weighted caseload technique listed in Chapter III. Determining the amount of time necessary to hear each case type requires a serious commitment by judges and court support staff. Moreover, compiling accurate frequency of event information is often a daunting (and expensive) task. Yet, this information is needed to construct the case weights. This chapter examines the merits of using expert opinion to construct case weights rather than the standard time study approach described in Chapter IV.

#### THE DELPHI TECHNIQUE FOR JUDGES

An alternative to conducting a full weighted caseload study is to have judges *estimate* the amount of time various cases take, without directly measuring time spent on each case activity.<sup>48</sup> This approach to building case weights can be done in two ways: focusing on case types or case events. The first method involves asking judges to estimate the time it takes to process specific *case types* from start to finish, that is, using expert judicial opinion to estimate the total case weight. This technique bypasses the need to compile data on case event times and event frequencies because the individual task weights are not used.

#### The Case Type Approach

Estimates of the time necessary to process each case from filing to disposition are gathered from the participating judges. The results are tabulated, averages (and ranges) calculated, and returned to each participant with a request to adjust their original estimates in light of the information provided by their colleagues. Initially, it is unlikely that the judges will agree on the proper amount of time to spend on each individual case. For example, is an hour spent on a minor misdemeanor too long or not long enough? If the estimates are widely disparate, the process is repeated through several rounds until consensus is achieved. Once agreement has been reached among judges as to the length of time required for specific cases, it is a relatively simple matter to calculate how many judge days (or hours) are required to process the caseload.

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<sup>48</sup> The Delphi technique was first developed by the Rand corporation in 1964 (O. Helmer, "Convergence of Expert Consensus Through Feedback," Rand Corporation, 1964) and applied to courts in Michigan by David P. Doanes, "The Effect of Case Weights on Perceived Court Workload," *Justice System Journal*, Vol. 2 (Spring 1977), p. 270.

After the first iteration, some states calculate ranges (either medians and percentiles or means and standard deviations) and use these ranges as guides for the second iteration of the questionnaire. For example, the question could be completely open ended or closed ended like this example for tort cases:

Tort Cases	1	//	//	//	//	//	//	//	//	10
	Hours	2	3	4	5	6	7	8	9	Hours

Note that even with closed-ended questions, judges may select times outside the set ranges.

The Delphi technique depends upon judges' estimates to determine the amount of time required to dispose of various types of cases. Using those estimates in conjunction with projected caseload and the number of days or hours each judge has available per year can permit a forecast of judicial need, without the need to actually measure time spent on each activity. Obviously, it is less costly to have estimates of case weights done by judges directly than to measure the time it takes to process each case activity. Moreover, having judges and court support staff participate in the creation of case weights gives the weights more credibility, because judges and court staff know how they were derived.

On the other hand, it is a human tendency to remember the unusually long or complex cases. Precautions must be taken, then, to control the likelihood that time required to process cases will be orchestrated and the need for judges exaggerated. Even when judges reach consensus on the times required to process various case types, the estimates may differ significantly from actual processing time as recorded by impartial observers, or even the times recorded by judges themselves.

## The Case Event Approach

A more rigorous approach to developing case weights using the Delphi technique is to ask judges to estimate the time necessary to process specific *case events* within each case type. The event time data is then matched with frequency of event information to calculate task weights. These task weights are then assembled to build the complete case weight.

### *How to Conduct a Delphi Weighted Caseload Study*

The procedure for conducting a standard weighted caseload study was described in Chapter IV. That procedure will be reviewed here with modifications identified.

1. ***Select the sample of counties, cases, and case events to include in the study.*** This step is still necessary with the Delphi technique. The sample may be stratified by population (urban-rural), size of court, or type of jurisdiction. The number of case types and case events to be included in the study must be chosen as well. Most studies using the Delphi technique limit the number of case types to be included in the study and restrict the number of case events considered. Georgia, for example, estimates weights for seven case types (felony, misdemeanor, probation revocation, general civil, domestic relations, juvenile, and unified appeal) and three disposition types (jury trial, bench trial, and nontrial). Professor Doanes, in the

Michigan survey, used 31 circuit court judges as his panel of experts and developed weights for six case types: breaking and entering jury trials, contract cases, automobile negligence jury trials, divorce cases involving minor children, divorce cases involving property, and murder cases with jury trials.<sup>49</sup> However, an experiment in Pennsylvania used a panel of 22 judges to make estimates on 24 specific case types.<sup>50</sup> Maryland used a panel of 30 judges to evaluate 50 different case activities ranging from pretrial events to dispositional hearings.<sup>51</sup>

2. ***Determine number of events required to process each type of case.*** In the Delphi technique this step is often not conducted separately, but rather is part of choosing the case types and case events to be included in the sample (Step 1).
3. ***Calculate the average amount of judge time per event.*** With the Delphi technique, judges estimate the amount of time spent on each case event. In the words of McDonald and Kirsch:

Briefly stated, the Delphi Method of case weighting is a way of developing case weights by using estimates generated by a panel of experts. Initially, experts are asked to estimate the amount of time that they believe is necessary to dispose of various types of cases in their jurisdictions. Their responses are then averaged and this average is shown to them in a second round of questioning. Experts will either adhere to their initial response or modify them to more closely approximate the group average. This process can be repeated until a group consensus emerges as to the average amount of time spent disposing of each of the various types of cases.<sup>52</sup>

The standard deviation is a way to measure the amount of agreement among judges on the various rounds of questionnaires to determine if panelists are approaching consensus.

4. ***Determine the average frequency of occurrence for each event in each type of case.*** This step of obtaining frequency of occurrence is necessary in the Delphi technique.
5. ***Multiply the average amount of judge time per event by frequency of occurrence to create a “task weight” for each type of case.*** The Delphi weighted caseload technique typically distinguishes between far fewer case events than the traditional weighted caseload method. In a felony case, for example, the Delphi technique may estimate the time for (1) “pretrial activity” (rather than distinguishing between first appearance, preliminary hearing, arraignment, pretrial motions, etc.), (2) jury trial, (3) court trial, and (4) “post-trial” activity (including post-judgment activity, sentencing, and appeals).

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<sup>49</sup> Ibid.

<sup>50</sup> Report from the Administrative Office of Pennsylvania Courts, “Use of the Delphi Study as a Means of Assessing Judicial Manpower Needs: A Selected Survey of Pennsylvania Judges,” unpublished paper (October 1977).

<sup>51</sup> Peter J. Lally, “The Delphi Approach and Its Application in Determining Judicial Personnel Needs at the Circuit Court Level in Maryland,” unpublished paper.

<sup>52</sup> H. Graham McDonald and Clifford P. Kirsch, “Use of Delphi Method as Means of Assessing Judicial Manpower Needs,” *Justice System Journal*, Vol. 3 (Spring, 1978), p. 314.



Another approach used in Georgia is to distinguish cases solely on the basis of how the case is disposed. The weight given to each felony case, for example, would be based on whether the case is disposed by jury trial, court trial, or “other disposition.”

6. ***Multiply the number of case filings by weight to arrive at the total amount of time spent on filings.*** This step must be completed in the Delphi technique as well.
7. ***Determine the amount of judge time available to process cases.*** The “judge year” is as important to the Delphi version of weighted caseload as it is to the standard weighted caseload methodology. The procedure for determining judge year was discussed in Chapter IV.
8. ***Divide the total amount of time required to process the anticipated number of case filings by judge time available.*** This step is also common to all methods of case weighting.

Note that it is possible to analyze Delphi data by size of court if the panel of experts is large enough to produce variation in estimates. In the Maryland study, Lally divided time estimates into rural and urban categories. Incidentally, he found much agreement in time for criminal pretrial motions (47 minutes, rural; 51 minutes, urban), arraignments (12 minutes, rural; 11 minutes, urban), guilty pleas (26 minutes, rural; 25 minutes, urban) and several other types of case events.<sup>53</sup> Differences between estimates made by rural and urban judges did occur over the trial categories, especially with estimates of criminal jury trial time.

Because gathering estimates from judges is time-consuming, most states that use this version of the Delphi technique have judges estimate weights for a relatively small number of case types. Using only a few case types streamlines the process of determining case weights, but may produce categories that are too broad. For example, Alabama uses a weight of 15.32 hours per civil jury trial, which incorporates the average jury trial times of numerous types of civil cases together with the less frequent, but more lengthy, jury trials for medical malpractice or product liability cases. Georgia similarly averages the criminal trial weight of 12 hours for the more numerous robbery cases as well as for the less frequent, but much more lengthy, capital murder cases. It may be that these differences “average out” over a large number of cases and thus present a reasonably accurate picture of the time it takes to process them, but there is no way of knowing for certain without measuring actual times required to complete each activity.

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<sup>53</sup> Lally, op. cit., pp. 19-20.

## **Keeping the Weights Current**

Once some version of the Delphi technique has been used to create the case weights, it is critical that the weights be adjusted and updated to ensure that they continue to accurately represent workload. The credibility of weights suffer if they become obsolete. This periodic updating is necessary to reflect changes in case processing event times that may result from increased efficiency, statutory changes, or case management initiatives. The major cost components in updating a weighted caseload system are the same as those for creating a weighted caseload system: the collection of time and frequency information for all judicial tasks and the analysis of that information.

### ***Complete Weighted Caseload Study***

One method of ensuring accurate weights over time is to conduct a complete weighted caseload study periodically. This has the advantage of completely validating case weights and the disadvantages of being costly and burdensome to judges who must complete the activity logs.

### ***Periodic Sampling***

Periodic sampling may be a more cost-effective alternative to redoing the weighted caseload study completely. Given that the first step in any weighted caseload procedure is to draw samples and that sample size is one of the largest components in the cost of a weighted caseload study, this alternative should be examined closely.

***Limit the jurisdictions to be examined.*** A simple random sample would give each jurisdiction a chance to participate in the weighted caseload study, but a case has already been made to stratify the sample on the basis of court size. It may be possible for some states to extend this principle further. In states with large rural populations, courthouses, and therefore judges and court support staff, may be necessary to afford the public access to a court without having to travel long distances. In these situations, public access to the courts is the primary determinant of the need for resources, not caseload. In those states, it may be possible to include only the single-judge jurisdictions with the largest caseloads in the pool from which the sample is drawn. These are the jurisdictions that will most likely require a second judge. Reducing the number of jurisdictions in the sample will reduce the cost and burden of conducting a weighted caseload study.

***Review case types used.*** Another modification is to reduce the number of case types used, thus reducing the sample. Even if some case categories are legally distinct, they may have similar processing steps and therefore require similar court resources. To the extent that case categories can be combined, the cost and burden of conducting a weighted caseload study is reduced. Case types that are distributed proportionately within court jurisdictions do not need to be included in the study because they affect all courts equally. Weights do not need to be adjusted for travel time or administrative time because adjustment to the judge year can compensate for those differences.

***Review case events.*** The Delphi method is used to estimate case event times and these estimates must be examined periodically to determine if they are still valid. One suggestion is to monitor sam-

ples of those case events that exert a strong influence on the overall case weight: events that take a large amount of time or occur with high frequency. These samples need not be large enough to accurately establish case weights, but rather to serve as trip wires to alert court officials of possible changes in event times. If specific “high-impact” case event times appear to be changing, it may be worthwhile to take a statistically valid sample of the questionable event to determine whether or not the task weight should be adjusted. To the extent that automated systems can be modified to collect data on judge time per event or specialized dockets permit the calculation of elapsed time for specific case events, data collection will be easier.

In sum, the suggestion is to sample case types and case events periodically from a rotating sample of court jurisdictions, and then to update only those case event times within specific case types that have changed significantly. In other words, it is not necessary to continuously monitor all case events for all case types. Time and money can be saved if a credible review process is instituted that tracks only the most critical case events and corresponding case weights.

## **THE DELPHI TECHNIQUE FOR COURT SUPPORT STAFF**

### **Maryland**

Maryland has used the Delphi approach to provide baseline data on the nature of work in clerks’ offices and on how that work is distributed. In place of questionnaires to describe work processes and to estimate the average time to complete each activity, Broccolina and Weber gathered this information by in-depth interviews.<sup>54</sup> Workload included tasks performed from filing to termination of cases, as well as tasks associated with customer services, management, and other non-case-related duties.

For example, interview data revealed that the task of indexing land records into a database required an average time of .46 minutes. Obviously, estimates varied among the nine employees questioned, and just as clearly some individuals were able to enter data faster than others. Examination of the data revealed that one employee’s estimate was much higher than the others and significantly affected the totals. Broccolina and Weber decided to include outliers, which they defined operationally as estimates more than two standard deviations from the mean. Excluding that one outlier changed the estimate of data entry time to .33 minutes.<sup>55</sup> Indexing 123,695 cases in 1992 therefore required 40,819 minutes of work time. Of course this is only one activity performed by court support staff. To arrive at an estimate of total clerk workload, one must determine the time necessary to complete *all* activities.

Once an estimate of total clerk workload is obtained, the next task is to determine how much time clerks have available to accomplish these activities. Broccolina and Weber used a clerk year of 217.97 days and an average of 375 minutes per day to arrive at a clerk year value of 81,738.75 min-

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<sup>54</sup> Frank V. Broccolina and George N. Weber, Jr., “Management Note: Cutback Management Revisited: A Statistical Approach to Determining Workload Measures in Clerks’ Offices,” *Justice System Journal*, Vol. 16 (1994), p. 95.

<sup>55</sup> Broccolina and Weber, *op cit.*, pp. 96-97.

utes. The interesting feature of this formula is not how they calculated the number of days in a year (which is similar to the way other states calculate a judge year), but the way they calculated time available per day. They assumed that of the 480 minutes available in an eight-hour day, 51 minutes would be spent on customer service, 6 minutes on the telephone, and 48 minutes on breaks, leaving the 375 minutes for duties related to case processing. It is desirable to have the time spent in serving court customers explicitly acknowledged in the formula.

The primary concern with the Delphi technique is how estimates of the amount of time spent on specific activities compare to actual measurements of time. Perhaps the use of bar coding technology would be unobtrusive enough to reduce the authors' concern with the Hawthorne effect, a distortion that occurs when employees realize they are being studied.<sup>56</sup> A close correspondence between estimated and actual time measures would increase confidence in the case weights.

### South Dakota

South Dakota uses "clerk's indices" to evaluate comparative caseloads of counties.<sup>57</sup> Table 21 summarizes the procedures. First, criminal and civil caseloads for each county are divided into case types and then "weighted" by a factor determined by a committee of clerks of court. An "average" case is given a weight of one and all other weights are a multiple of that. For example, a serious misdemeanor or a felony preliminary hearing is assigned a weight of 1; a guilty plea, 2; a court trial, 3. A jury trial is assigned a weight of 20 for misdemeanors and 25 for felonies. The weighted caseloads from civil and criminal cases are combined to produce a total weighted caseload.

Next, counties are sorted based upon number of staff and divided into subgroups by size, and counties with unusually high caseloads per FTE (full-time equivalent) staff are screened out.<sup>58</sup> The target caseload is the average of caseloads from the five highest counties in the subgroup. The formula calculates a caseload standard from a common target caseload. For example, the 1.5 FTE staff in Bon Homme County processed 6,874 cases in 1995, while the formula suggests these staff should be able to handle 7,005 cases ( $1.5 \times 4,670$ ). The difference between 7,005 cases and actual caseload in 1995 ( $7,005 - 6,874$ ) is 131. The index column shows the net difference between the actual FTE clerks and FTE calculated using the target caseload calculation. From this index, the relative staffing of each office is determined. Table 21 shows that staffing for Bon Homme County is just right, but that Minnehaha County is understaffed by 2.77 staff.

**Table 21: Calculation of Clerk's Indices, South Dakota, 1995**

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<sup>56</sup> Broccolina and Weber, *ibid.*, p. 94. The "Hawthorne Effect" was first described in F. J. Roethlisberger and W. J. Dickson, *Management and the Worker* (Cambridge: Harvard University Press, 1939) and is a standard illustration in social science works, such as Leon Feslinger and Daniel Katz, *Research Methods in the Behavioral Sciences* (New York: Holt, Rinehart, and Winston, 1966), p. 101. Note that bar coding has been used in Missouri to measure the time necessary to complete case activities.

<sup>57</sup> *Clerks' Index Narrative* (1995), provided by Dan Shenk, then State Court Administrator of South Dakota.

<sup>58</sup> Unusually high is defined operationally as 1.5 times the average.

<b>Cir #</b>	<b>Counties</b>	<b>1995 Total Caseload</b>	<b>1996 Staff (FTE)</b>	<b>Caseload/ Staff</b>	<b>Target Caseload</b>	<b>Formula*</b>	<b>Index**</b>
1	Bon Homme	6,874	1.50	4,583	4,670	131	0.03
1	Charles Mix	15,762	3.10	5,085	8,311	10,002	1.20
1	Clay	18,872	2.80	6,740	8,311	4,399	0.53
1	Douglas	2,366	1.17	2,022	3,454	1,675	0.48
1	Hutchinson	5,052	1.50	3,350	4,670	1,980	0.42
1	Lincoln	18,259	2.50	7,304	8,311	2,519	0.30
1	Turner	7,836	1.50	5,224	4,670	(831)	-0.18
1	Union	28,717	4.00	7,179	8,311	4,527	0.54
1	Yankton	31,267	4.00	7,817	8,311	1,977	0.24
11	Circuit Total	134,978	22.07	49,303		26,379	3.58
2	Minnehaha	302,306	26.15	11,560	10,454	(28,934)	-2.77
3	Beadle	30,722	3.75	8,193	8,311	444	0.05
3	Brookings	34,215	4.50	7,603	8,311	3,185	0.38
3	Clark	4,579	1.29	3,550	3,454	(123)	-0.04
3	Codington	35,515	4.31	8,240	8,311	305	0.04
3	Deuel	5,858	1.50	3,785	4,670	1,147	0.25
3	Grant	8,861	1.75	5,063	4,546	(906)	-0.20
3	Hamlin	4,020	1.25	3,216	3,454	298	0.09
3	Hand	4,624	1.72	2,688	4,546	3,195	0.70
3	Kingsbury	6,269	1.50	4,179	4,670	736	0.16
33	Circuit Total	134,483	21.57	46,518		8,281	1.43
4	Aurora	3,481	1.33	2,617	4,670	2,730	0.58
4	Brule	8,297	1.52	4,998	4,670	(1,199)	-0.26
4	Buffalo	406	0.41	990	2,724	711	0.26
4	Davison	29,579	4.03	7,320	8,311	3,914	0.47
4	Hanson	3,246	1.21	2,666	3,454	933	0.27
4	Jerauld	2,783	1.21	2,300	3,454	1,396	0.40
4	Lake	14,405	2.03	7,096	5,834	(2,562)	-0.44
4	McCook	5,544	1.57	3,531	4,670	1,788	0.38
4	Miner	4,238	1.20	3,532	3,454	(93)	-0.03
4	Moody	10,502	2.41	4,358	5,834	3,558	0.61
4	Sanborn	2,905	1.13	2,571	3,454	998	0.29
44	Circuit Total	84,586	18.05	41,979		12,175	2.55

\* Formula = Target Caseload x Number of Staff (FTE), minus Total Caseload.

\*\* Index = Formula column divided by Target Caseload.

## SUMMARY

Determining the amount of time necessary to dispose of each case event or case activity is the most burdensome part of a weighted caseload study. The Delphi technique has judges and court support staff estimate the time required to process each case type or case activity rather than conduct an actual time study. They then participate directly in the process of weight creation, which gives the case weights credibility. The downside of the approach is that weights arrived at by consensus may not be good estimates of the time necessary to process cases; consequently, weights should be validated independently.

One way to do this is to conduct a full weighted caseload study and then update the weights in the interval between full studies by the Delphi technique. A quick and cost-effective, but less accurate, method of testing the weights is to apply the case weights to a previous year's filing data to determine whether or not the number of judges could have processed the cases they did. The Delphi weights receive support to the extent that the estimated workload approximates the actual number of cases disposed.

## Chapter VIII

### Simulation Models for Judges and Court Support Staff

#### INTRODUCTION

Some states see simulation as the next wave in assessing the need for judges and court support staff. The purpose of simulation is to allow courts to examine proposed changes to resources and procedures before the actual changes are introduced. Simulation models provide a tool for assessing the flow of cases through a court, or they can be expanded to estimate resource need across the entire criminal justice system. The primary benefit of simulation is that it allows decision makers to study processes and experiment with new ideas before they are actually implemented. Because real-world experiments are often expensive, disruptive, and difficult, simulation provides a means to:

- analyze systems that cannot otherwise be analyzed;
- think about our business in a clear, concise, and possibly different way; and
- conduct “what if” experiments before committing to change.<sup>59</sup>

Developing a workable simulation model in the court environment requires the analyst to come to terms with the complexity of courts as institutions. There is a direct relationship between the degree of precision used to clarify how cases progress from one court event to another and the utility of the results obtained from the simulation “what if” scenarios.

This chapter will focus on two types of simulation models: those based upon aggregate data and those based upon individual case data. Versions of the aggregate model (CJSSIM or JUSSIM) are currently being used in Santa Clara and San Diego Counties, California, and Dade County, Florida, and are under development in several other localities. The administrative office of the courts in California and Washington are developing queuing models using individual case data. An interesting hybrid is being used in the Riverside County courts to assess the need for court support staff.

#### DISTINGUISHING BETWEEN AGGREGATE AND INDIVIDUAL CASE SIMULATION MODELS

Aggregate simulation models use historic case filing data with general information on case processing time and workload to estimate the progression of cases from one case processing point to another. These types of models are also referred to as “deterministic” models because the results come from mathematical formulas that determine outcomes for given input. For example, to simulate the

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<sup>59</sup> These points are taken from *The Trial Court Caseflow Simulation System*, State of Washington, Office of the Administrator of the Courts (December 1993). See this report for a more in-depth discussion of these issues.

movement of a criminal case from arraignment to trial, one would multiply the aggregate number of arraignments for a given time period by the historic arraignment-to-trial rate to determine the number of cases that proceed to trial. In this sense, aggregate models are similar to weighted caseload in that the calculation of judge need is based on a mathematically determined relationship between caseload and workload.

By contrast, models based on queuing theory focus on individual cases and the amount of time necessary to move from filing to disposition. In the real world, a case may require several proceedings and be subject to continuances and time lags before it is eventually disposed. To simulate actual practice in a particular court, these individual case models make use of detailed information on caseload, the prevalence of specific case events, the pattern of continuances, and the time needed to move between events. As a case runs through the model, it reaches discrete events where the outcome (e.g., hearing held, hearing continued, case disposed) is determined by random selection from a probability distribution of outcomes that reflect current practice in the court. If the case is not disposed at the event, the model then sets the date and location of the next scheduled proceeding (e.g., set for courtroom A in three weeks). Moreover, cases are run through the queuing model randomly; particularly litigious cases are no more likely to be run “first” through the model than faster cases. In this manner, queuing models simulate how filings might be received in the clerk’s office.

The results of the two types of simulation models are also different. Aggregate simulation models use historic data and estimated workload requirements to determine appropriate judge and court support staff levels as an *output*. The main criteria or outcome being studied in queuing models is the length of time required to move a case from filing to disposition. Queuing models use judicial positions as one of the adjustable *inputs* to determine what impact changing the number of judges has on case processing time (the output).

### **The Aggregate Model**

In the late 1960s, the District of Columbia explored the feasibility of using computer simulation to experiment with various modifications of the felony processing system without disrupting court operations.<sup>60</sup> The simulation found that most of the time prior to arraignment was spent waiting for the grand jury to return an indictment. Simulating a second grand jury sitting part-time showed delay could be reduced by 70 percent and total time until defendant is ready for trial could be reduced from 160 days to 127 days. This early success pointed to the feasibility of using simulation to improve the processing of court cases.

The aggregate model most commonly used in state courts today is based on a criminal justice system model called JUSSIM or CJSSIM.<sup>61</sup> These models are typically used by county administrators to analyze the use of resources, to identify choke points or excess capacity, and to simulate the impacts

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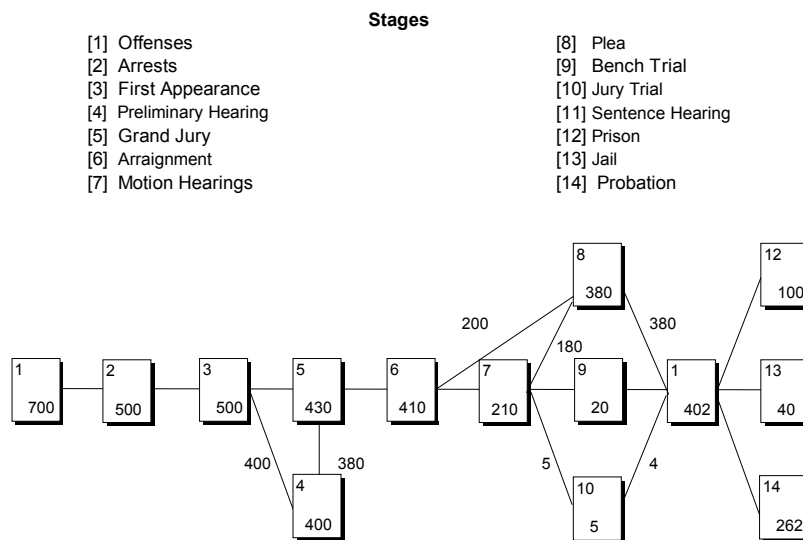
<sup>60</sup> Jean G. Taylor and Joseph A. Navarro, “Simulating of a Court System for the Processing of Criminal Cases,” *Simulation*, Vol. 10 (May 1968), pp. 235-40.

<sup>61</sup> The Criminal Justice System Simulation Model documentation is available from the Institute for Law and Justice (*JSSIM: Users Manual*, Alexandria, Va.: May 1992).



of significant changes to the system, rather than specifically to assesses the need for judges. As seen in Figure B, attempting to model all critical stages of the criminal justice system means taking into account the interaction and interdependence of several agencies (e.g., police, courts, and corrections). This makes the scope of these aggregate models quite broad. Criminal justice modules can be linked to others. The Dade County model, for example, has been expanded to simulate juvenile and traffic case processing,<sup>62</sup> and the Santa Clara County system now incorporates civil case processing.

**Figure B: The Flow of Criminal Cases Through the Criminal Justice System**



When compared to queuing models, the JUSSIM models contain far less operational detail.<sup>63</sup> An obvious reason is the nearly impossible task of detailing and modeling the entire criminal justice system. As a result, the JUSSIM models tend to be used for general cost assessments rather than specific operational analyses. For instance, Dade County recently used its model to determine the fiscal effect of an expansion in its house arrest program on the resources of the probation and corrections departments.

<sup>62</sup> The CJSSIM or JUSSIM model reportedly costs around \$30,000. The Dade County model is maintained by two full-time people. Workload and cost data are regularly collected from 41 agencies (including 26 police departments), and all data are entered annually.

## Individual Case Models

### *California*

The California Administrative Office of the Courts is in the process of developing an individual case simulation model to be the centerpiece of its new judgeship needs determination methodology. Moreover, the Administrative Office of the Courts plans to use this simulation-based methodology to replace California's weighted caseload system.

Estimates of judge need flowing from the simulation model will be tempered by a qualitative assessment of the court's judicial requirements based partly on this standardized model output and partly on a "severity" index. The severity index, which is also under development, will reflect relative judicial need among all counties in the state and provide a means to rank courts in terms of need. Chapters IV and IX discuss "severity" under the heading of relative need.

The greatest challenge to queuing models is providing the large amount of data they require. California plans to employ sampling techniques to reduce the burden of data collection on the courts, but the data requirements remain significant.<sup>64</sup>

### *Washington*

The use of queuing models as a management tool is furthest along in Washington State. While not yet fully operational, the model's potential as well as its limitations may be preliminarily assessed.<sup>65</sup>

***The courts as a service delivery organization.*** The rationale underlying the use of simulation has been clearly articulated by the Washington Caseflow Simulation team:

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<sup>63</sup> None of the counties using CJSSIM or JUSSIM models use them specifically for judicial need determinations.

<sup>64</sup> Simulation models are expensive to develop and may be expensive to maintain. Both the Washington and the California models have used up to three full-time simulation specialists for over a year to develop prototypes

<sup>65</sup> The simulation model is currently being tested in Snohomish County and King County. Washington State Civil Caseflow Simulation Project was funded by a grant from the State Justice Institute (SJI-91-06F-A-034).

Processing cases in state trial courts involves a complicated service delivery system in which the state courts face two particular needs: sufficient resources and efficient operations. The court system belongs to a class of service delivery systems or queuing systems that are characterized by the waiting line phenomena (a queue is a waiting line).

A supermarket is a common illustration of one of these queuing systems. The service population is the number of people (customers) in the supermarket, the service facility is the row of check-out stands in a unit time. Service time is the length of time it takes to check-out a customer's groceries once they reach the checker, while queue or waiting time is the time spent waiting in line to get the checker. Queue length is the number of people waiting in the check-out lines. Express lanes are servers set aside to handle certain types of customers who require little service (buy only a few items) and leave quickly. Capacity is the total number of customers the supermarket can process through the check-out stands without encountering customer dissatisfaction.

Courts can be viewed as queuing systems as well. Cases are customers, and judges (and other court personnel) constitute the service facility. Each judge is a server who may have their own waiting line (individual calendar), or share a waiting line with other judges (master calendar). Differentiated case management is the formation of special servers that handle certain types of cases, like the express lanes in the supermarket. Expedited tracks are for cases that demand little service and wish to complete the court process quickly, while complex litigation tracks are the opposite, accommodating customers that involve a lot of service and do not demand a fast pace to adjudication. Court capacity is the number of cases that can be processed by the court without customer dissatisfaction concerning the time it takes to reach case resolution. Case processing time standards define the capacity of the court system since these standards define satisfactory customer service. Systems that are over their capacity experience customer dissatisfaction and loss of customers. Over capacity courts may experience customer dissatisfaction and loss of customers. Over capacity courts may experience customer dissatisfaction but the customers may (civil cases) or may not (criminal) be able to leave the system.<sup>66</sup>

A functioning simulation model will help court staff (1) assess the impact of changes to court management techniques on caseflow (e.g., changing the pace of litigation, using differentiated case management, changing continuance policies), (2) experiment with resource issues (e.g., adding judicial officers, extending the trial day, reallocating proceedings between different types of judicial officers), and (3) examine scheduling options (e.g., changing calendaring systems, rearranging the trial day).

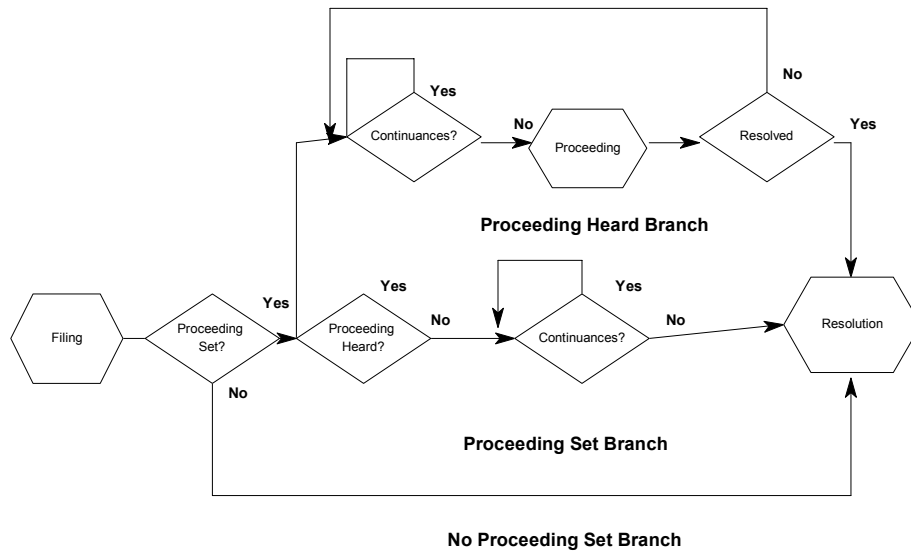
**Overview of the model.** The Washington model consists of six components: caseflow structure, scheduler, resources, court characteristics, model input interface, and model output. This is a brief introduction to what is a complex exercise in modeling.<sup>67</sup>

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<sup>66</sup> For more information, please see *The Trial Court Caseflow Simulation System*, State of Washington, Office of the Administrator of the Courts (December 1993), pp. 1-2

<sup>67</sup> Ibid.

**Figure C: The Flow of Cases Through the Washington State Simulation Model**



The model's *caseflow structure* includes three main branches: (1) No-Proceeding Set Branch for cases which did not have a proceeding set and proceeded directly from case filing to case resolution; (2) Proceeding Set Branch for cases which had a proceeding set but the proceeding never occurred before the case was resolved; and (3) Proceeding Heard Branch for cases that involved a proceeding that was heard (see Figure C). Both the Proceeding Set and Proceeding Heard Branches involve continuance loops. The Proceeding Heard Branch may involve several proceedings. After each proceeding, a resolution decision is evaluated. If the case is not resolved after a proceeding, then the proceeding heard loop is repeated until the case is resolved. A *scheduler* seeks the next available court session for the type of case requiring a date set.

The caseflow simulation model requires information on *court characteristics* (including case information, types of proceedings held, and the number of days to allow between the scheduling of particular proceedings) and the number of judicial *resources* (distinguishing between trial judges and quasi-judicial staff). All of the data required to run the simulation is entered on spreadsheets and connected to the model through the *input model interface*. To operate to capacity, the simulation model requires the following types of information:

Case Data	Proceedings Data	Court Schedule Data
<ul style="list-style-type: none"> <li>• case type</li> <li>• case subtype</li> <li>• filing data</li> <li>• resolution data</li> </ul>	<ul style="list-style-type: none"> <li>• proceeding sequence number</li> <li>• event type (set, continued, heard)</li> <li>• proceeding type (trial, motion)</li> <li>• court session (judges' calendar)</li> <li>• proceeding duration in minutes</li> <li>• resolution after proceedings</li> <li>• proceeding priority</li> </ul>	<ul style="list-style-type: none"> <li>• court session ID</li> <li>• judge type</li> <li>• session start and end time</li> <li>• proceeding types within session</li> <li>• maximum number of proceedings</li> </ul>

All *model output* is directed to Excel spreadsheets to provide flexibility in examining and presenting the information.

Queuing models use the number of judges as a model *input* variable. As a result, to determine the appropriate number of judges for a court, one must develop time standards. For instance, the model might show that a court with seven judges (input) cannot dispose of cases within the court's case processing time standards (output). If the court determines that it wants enough judges to process cases within the time standards, judges would be added to the model until the output showed that the court could achieve its case processing goals. Therefore, with its focus on case life, the simulation model is a supplement to the weighted caseload methodology. Estimated judicial need derived via weighted caseload can be entered into the simulation as an experiment to test the impact that this new number of judges would have on case processing time.

The main advantage of a queuing model is that it generally does *not* use rates calculated from historic averages to determine case progression. By using the probability of continued progression at each event as well as randomly selecting the order in which cases progress through the model, the model produces outputs that are more realistic than the aggregate model. Determining appropriate probability distributions and unique case attributes requires more data collection than applying averages to aggregate workload statistics. As a consequence, one of the challenges of the queuing model is that it requires more data collection than the aggregate simulation model.

The flip side of the additional data collection is that it provides the means to monitor case processing times realistically, a distinct advantage of the queuing model. The model is dynamic, meaning it allows the user to monitor processes over time. Thus, hypothetical "what if" scenarios may be analyzed as to the effect a policy change might have on case processing times for extremely slow or fast cases, as well as for the "average" case.

The Washington model was designed to explore issues of caseload management (e.g., effects of changing continuance policies, applying differentiated case management, or changing calendaring systems) as well as resource issues (e.g., adding judges or commissioners or extending the trial day).

For example, these options allow a user to model the effect on elapsed case processing time of a change from a master calendar to an individual calendar.

Simulation modeling holds great promise as a tool for assessing the effects of proposed changes in resources and procedures on court workload and caseflow. Simulation has the potential to be an extremely powerful planning tool for improving court administration. This type of modeling is, however, highly complex. And the complexity increases dramatically as the model is expanded to more closely mirror the actual operation of a court. Fortunately, a judge or court administrator does not need to understand the complete inner workings of a simulation model to obtain the benefits. But he or she must know the types of problems that can be answered through simulation—the data requirements, how to adjust the model to serve different needs, and how to interpret the results. A central source for education, technical support, and model updates is necessary if simulation modeling techniques are to become standard court management tools.

Is the Washington simulation model sufficiently flexible to serve as a prototype for the continuing development of court-based simulation models? A major strength of the Washington simulation is that it is the only computer simulation model of the courts currently developed and operating. Several years have been spent on its development, and it offers a high standard of achievement. Any simulation model, however, is a simplified representation of reality. The developers of the Washington model have spent a good deal of productive time thinking through the trade-offs between complexity and simplifying assumptions. Their decisions appear sound, but the model is also fully capable of incorporating a range of enhancements.

A preliminary assessment of the Washington simulation by the NCSC indicates that the model has a great deal of promise. Conceiving, writing, and debugging a simulation program on the scale of the Washington model is a highly complex task, and it is not surprising that it has been in development for several years. The time and resources devoted to the model have resulted in an elegant design and approach. In particular, the algorithm that underlies the scheduling component is a highly successful solution to a very tricky modeling problem. The core programming of the model appears sound and sufficiently flexible to serve as a national model.

A key challenge facing the Washington model (or any court-based simulation model) is expanding the core design to accommodate the real-life complexities and differences of alternative court environments. The model's structure must be generic enough to be applicable to various courts. A national model must be able to adjust or "fine-tune" the simulation to let courts choose the basic parameters that conform most closely to their own operations. For example, the option of setting the work week for longer than five days is not currently possible, although the model will accommodate a work week of less than five days. In addition, the procedure for running the simulation with an individual calendar, while possible, needs to be clarified in the documentation. The Washington model is fully capable of expanding and integrating a host of alternative design features; however, continuing experience and feedback from actual users in the courts is necessary to achieve an optimal design.

The biggest issue facing *any* meaningful court-based simulation model is data. The types of analyses that can be done and the accuracy of the output depend directly on the quality of input data.

Having an automated case management system is almost essential to run the model. The exception would be a special one-time data collection to get the model up and running. For simulation modeling to spread throughout the state courts, a heightened commitment to high-quality data collection is essential. This is not a criticism of simulation models. The model is being asked to answer complex questions, and the more difficult and detailed the questions, the greater the need for a variety of data. Simply put, the accuracy of the model is directly dependent on the quality and quantity of the data available.

**Guideline 10** *Simulation can be used in concert with other criteria to determine how to make the best use of existing judges and court support staff.*

## **USING SIMULATION TO ASSESS THE NEED FOR COURT SUPPORT STAFF**

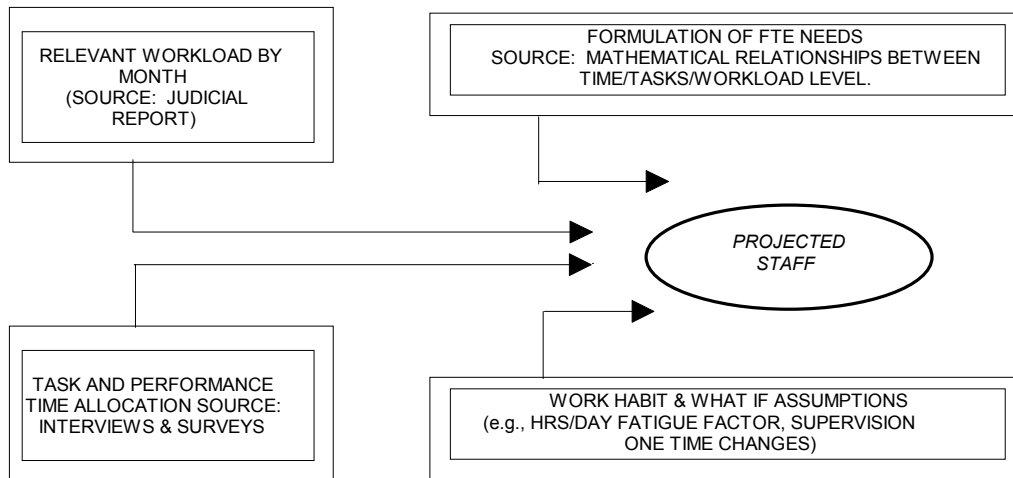
The Municipal Courts of Riverside County, initiated a service delivery improvement project in 1992. One result of this study of Riverside County courts was a computer-based management tool to analyze case processing and determine the need for court support staff. The Resource Allocation Model (RAM) uses specific data on case type and volume, organizational structure, and employee work habits to develop staffing standards. The need for court support staff can be generated automatically as monthly data are entered.

The first version of the model became operational in Riverside Municipal Court in October of 1992. Since that time, the Superior and Municipal Courts of Riverside have consolidated to form a unified court. A new version of the model reflecting this organizational change has been developed. A diagram of the basic model structure is shown in Figure D.

### **An Overview of the Resource Allocation Model**

At a minimum, the model requires a basic set of initial data as well as workload data that is updated monthly. The initial data required includes a list of tasks to be performed and time standards for completing those tasks in six basic case processing areas: new filings, pre-judgment, calendaring, courtroom, post-judgment, and judgment. In Riverside County, tasks performed by staff in each of the divisions were identified and recorded. For two weeks, employees kept a log of the frequency of each task and the time necessary to complete each. From this data, a standard was set for each task in every division. The set of activities used to process traffic cases, for example, and the average amount of time taken to complete each task are displayed in Table 22.

**Figure D: Staff Requirement Analysis in the Riverside Municipal Court**



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*Daniel H. Straub & Associates*

Twenty-five months of historical caseload data was used to initialize the model. Caseload data must be updated monthly to keep the model current. For example, the traffic component of the model requires the addition of only 22 numbers that correspond exactly with the data reported monthly to the state administrative office of courts. Drawing on readily available caseload data is a major strength of this model.

Information on caseload and the time needed by staff to handle each type of case is factored together in the model to produce an estimate of court support staffing need. As with weighted caseload, a staff day and year must be established that clarify the amount of time available to accomplish the work of the court.

One of the distinguishing features of the Riverside plan is a commitment to make it serviceable to division supervisors. The model software is divided into three main menus: the "set-up," "projections," and "what-if" options. The "set-up" option is where historical data are entered, projection methods selected, staff projection formulas defined, and assumptions about staff work habits identified. The "projections" option is where projections of staff need and graphical displays of information are generated. The "what if" option allows the user to test various changes to workload and case processing procedures and to measure this effect on staff resource needs. The model will be available on the local and divisional levels at personal computer stations. Court management has given line supervisors the authority to redistribute staff based upon analysis from the model, and performance reviews of the division will be based upon model output.



**Table 22: Average Completion Times for Traffic Cases in Riverside County**

DESCRIPTION	BLYTHE	CORONA	INDIO	PALM SPRINGS	RIVERSIDE
<b>NEW FILING: RECEIPT AND PROCESSING</b>					
1. CHECK TICKETS FOR CORRECTIONS	0.73	0.40	0.61	0.71	0.25
2. COUNT TICKETS AND MISDEMEANORS	—	0.04	0.30	0.40	—
3. SORT TICKETS/INPUT IN COMPUTER	2.50	2.40	2.30	4.30	2.70
4. FILE TICKETS BY DATE OF VIOLATION	0.34	0.23	0.71	0.65	0.22
5. REJECTS	3.50	1.70	1.30	2.00	2.50
<b>GENERAL MAIL ACTIVITIES</b>					
1. MONEY DESK ACTIVITIES (PER DAY)	24.00	N/A	74.00	22.00	105.00
2. NOT GUILTY CLAIMS	6.10	6.40	9.50	7.00	3.60
3. TRAFFIC SCHOOL COMPLETION	8.10	5.70	6.50	8.00	9.50
4. INFRACTION PAYMENT BY MAIL	1.30	2.00	2.40	3.40	1.40
5. CORRESP. & COMMUNICATIONS (PER DAY)	34.00	38.00	56.00	28.00	90.00
6. BAIL NOTICES	N/A	0.10	N/A	N/A	N/A
7. GENERAL MAIL (PER DAY)	56.00	62.00	90.00	42.00	170.00
<b>GENERAL COUNTER ACTIVITIES</b>					
1. GUILTY PLEA TO PAY	6.10	3.50	4.20	1.80	2.40
2. FIX-IT INFRACTIONS	6.10	3.20	3.40	6.20	2.60
3. REQUEST FOR ABSTRACT	7.80	6.30	6.70	2.80	6.10
4. DROP BOX (PER DAY)	N/A	N/A	N/A	N/A	12.00
5. COURT EXTENSIONS	2.70	2.70	2.90	3.00	1.80
<b>COURT WALK-IN</b>					
1. PRE-COURT ACTIVITIES	5.80	5.00	5.10	7.60	8.30
2. POST-COURT ACTIVITIES	5.70	5.70	6.40	6.20	3.50
<b>TRAFFIC SCHOOL</b>					
1. TRAFFIC SCHOOL REQUESTS	6.80	5.70	4.40	2.50	3.30
2. TRAFFIC SCHOOL COMPLETION	4.90	3.20	3.80	3.00	1.60
<b>COURT TRIAL (BEFORE COURT)</b>					
1. COURT TRIAL INITIAL SETUP (SIGN UP)	6.00	5.50	6.60	3.80	4.60
2. COURT TRIAL SETUP (PREPARE PAPER WORK)	N/A	N/A	N/A	N/A	N/A
3. CALENDARING	3.20	4.00	5.60	6.80	4.90

A comprehensive training program is being developed for all court supervisors, and the model will not be fully implemented until this training phase is completed. Arguably, because they provide direct calculation of resource requirements, deterministic models, such as RAM, may have a slight advantage over queuing models as a working tool for line supervisors.

### Assessment of the Model

RAM is a “deterministic” model, similar to the JUSSIM and CJISSM models described earlier. It uses mathematical algorithms to convert caseload measures into estimates of workload and directly calculates staff need as a model *output*. This contrasts with the queuing simulation models, such as those under development in California and Washington, in which judicial resource levels are indirectly determined from the model *input*.

RAM also differs from queuing models in its use of aggregate data, typically represented by arithmetic means, in estimating staffing needs. This effectively limits analysis from the model to “average” cases. In contrast, queuing models use frequency distributions when simulating case processing that allows for the analysis of cases both more and less complex than the average. The cost of

this additional level of analysis is in the data. All other things being equal, the queuing model will have more data requirements than the deterministic model.

Like other simulation models, RAM's advantage for determining resource needs over static "status quo" methods, such as weighted caseload systems, lies in the user's ability to pose "what if" scenarios concerning court operations and resource levels. This allows court managers using the model to empirically evaluate resource requirements while "testing" case processing innovations for effectiveness and efficiency. For example, by changing model parameters for a one-time "what if" query, court managers can use the model to simulate changes in staff duties and then analyze how those changes impact the need for staff resources in a particular department or across an entire court.

In summary, the Resource Allocation Model is not as data-intensive as the queuing simulation models, but does allow resource assessments to be made in tandem with an evaluation of work processes—a distinct advantage over static resource methods. Like most simulation models, the data requirements are not small, but once an initial study of case processing is completed, the data required to keep the model current (given the initial model assumptions) are routinely collected by monthly workload statistics. RAM has the capacity to examine each operating department (civil, criminal, traffic, and juvenile) separately, and so can be implemented in modular fashion.

The real test of simulation models is whether they are actually used to make decisions on resources and court operations in the courts. By requiring model-based analysis from line supervisors and court managers for staff changes and division performance reviews, the Riverside RAM model promises to be one model that will be used as an integral part of empirical court management.

## Chapter IX

# Traditional Models for Assessing the Need for Judges and Court Support Staff

### INTRODUCTION

Most states use basic statistical indicators of court “workload,” such as total filings, dispositions, and population, to estimate the need for judges. While these basic indicators provide only an approximate measure of workload and hence the need for judgeships, they are straightforward and easy to understand. The trick is to approximate the results of the more sophisticated analysis, such as weighted caseload, with fewer, and easier to obtain and update, data elements. This section discusses and evaluates a set of techniques that can be used to approximate the need for judges and court support staff.

Getting the most out of *available* data requires a willingness to learn the strengths and to appreciate the weaknesses of each measure. The results of the analysis will tend to be suggestive rather than definitive, and useful more as a screening tool than the final answer. The main weakness of these traditional models is that they typically embrace the status quo. They draw on historic relationships between such factors as filings per judge or filings per court support staff to build estimates of resource need. An implicit assumption of these techniques, then, is that the efficiency of court operations, including current case management techniques, is acceptable. Therefore, the *quantitative* analysis will point to courts that, based on current practices, appear in need of more (or fewer) judges or court support staff, at which point a *qualitative* analysis is necessary to confirm the need. Is the court operating efficiently and effectively? Are alternatives to adding personnel available? The qualitative assessment is a key part of any resource methodology (including weighted caseload), but is more important to the low-cost methods discussed here.

### THE REGRESSION MODEL

What follows is one approach to building and interpreting a regression model that uses basic data available in almost every court to measure the need for judges and court support staff. Regression analysis is the statistical technique that will assist the analyst in estimating the need for judges or court support staff based on court-to-court variations in caseload or demographic variables.<sup>68</sup> The steps are outlined below:

1. Identify the data available to help assess the need for judges and court support staff and assess the quality of those data.

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<sup>68</sup> This section uses regression analysis to build a model to assess judicial need. A similar process would be used to estimate the need for court support staff.

2. Select possible indicators from among the data available.
3. Develop and test the statistical model.
4. Focus on the courts that appear to be under (or over) resourced.
5. Add a qualitative assessment.

The discussion in this chapter is not a comprehensive presentation.<sup>69</sup> Rather, the goal is to bring together a serviceable model and set of criteria, encourage their use when weighted caseload is not an option, and, above all, stimulate their further development, testing, and refinement.

### **Step 1: Examine the Available Data**

Before beginning an assessment, examine and evaluate the caseload data readily available on a regular schedule. Chapter II highlights the criteria used throughout the country to determine the need for judges. The measures include cases filed, disposed, or pending and the number of jury trials. Some states report these basic indicators on a per-judge or per-population basis.

Data quality is the critical factor in selecting among the potential indicators of judicial and court support staff need. Regardless of which measures are used or how they are adjusted, the integrity of the results rests on the data being accurate and comparable throughout the state. The full procedures for conducting such a data quality review are beyond the scope of this report,<sup>70</sup> but the following issues should be reviewed:

- *Case counting procedures.* Does each circuit<sup>71</sup> in the state count cases the same way?<sup>72</sup> For example, are criminal cases counted on a defendant basis in some circuits and on a charge basis in others? Are civil cases counted at the point of filing in some locations, but at the time of the answer in others? Do multiple juvenile offenses get counted as one case in some circuits and as separate cases in others?
- *Definition of terms.* Do key terms have the same meaning throughout the state? For example, does each circuit measure dispositions the same way? When a case is disposed, is it resolved, closed, etc.? Does the pending caseload in some circuits include both active and inactive pending, while only active pending is counted in other circuits? Are jury trials counted when the jury is empaneled or at verdict?

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<sup>69</sup> For a comprehensive introduction to statistical analysis, see, for example, R. S. Pindyck and Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts* (New York: McGraw-Hill Book Company, 1981).

<sup>70</sup> See Eleanor K. Adams, "Statistical Auditing, Do the Numbers Speak for Themselves?" *State Court Journal* (Fall 1984), p. 16.

<sup>71</sup> Judgeship needs and court support staff studies are designed to compare and assess the needs of courts within the same state. The generic terms *circuit* and *district* are used here to describe each court jurisdiction being compared in the state.

<sup>72</sup> See *State Court Model Statistical Dictionary* (Williamsburg, Va.: National Center for State Courts, 1989).

- *Completeness of data.* Are all the circuits counting and reporting the same set of cases? For example, are cases such as traffic, small claims, and juvenile fully counted in some circuits, but inconsistently in others?

The credibility of any resource allocation study rests on the quality of the data. Inconsistencies in data definition and collection procedures will diminish the results of any study.

## **Step 2: Select the Most Promising Data**

Following the data quality review, identify the measures that potentially can be used to assess the work of the court and the need for resources. For example, information on filings, dispositions, number of jury trials, and population is available from every circuit in the state. Now what? Which measure is best? Is one measure sufficient, or does the use of several in combination produce better results?

### ***Correlation Analysis***

The goal of the statistical model for determining judicial need that will be discussed shortly in Step 3 is to *estimate* the number of judges using information that is believed to *determine* the need for judges. In statistical terms, the “number of judges” is the *dependent variable*, or the estimate to be derived. The data used to estimate the number of judges are called the *independent variables*—the indicators (e.g., filings, dispositions, or population) that are believed to explain the need for judges. One statistical rule to be observed is that the independent variables also be independent of each other. That is, for the model to work properly, the independent variables should be highly correlated with the dependent variable, but not correlated with each other.<sup>73</sup>

The most popular way of detecting excessive correlation (multicollinearity) between the independent variables is a correlation matrix. If there is perfect agreement between two variables, then the correlation coefficient is 1.0. If there is perfect disagreement (i.e., one series moving up and the other down), the computed coefficient is -1.0. Various degrees of agreement or disagreement will register on the scale between 1.0 and -1.0—with a coefficient of zero showing no relationship. The off-diagonal elements in the matrix show the simple correlations between pairs of independent variables, while the diagonal values are all one since each variable is perfectly correlated with itself. A printout of the simple correlations between pairs of independent variables is available from almost all statistical packages.

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<sup>73</sup> See Michael O. Finkelstein and Bruce Levin, *Statistics for Lawyers* (New York: Springer-Verlag 1990), p. 351. Multicollinearity is the name given to the phenomenon of excessive correlation between the independent variables. The main problem associated with multicollinearity among the independent variables is a lack of accuracy in estimating the relationship between an independent variable and the dependent variable. That is, the variance associated with the estimate of each independent variable is large. A high level of multicollinearity is an indication that the model is overspecified in the sense that more variables are included than are justified by the data. Its effect is to increase the standard errors of the coefficients, thus making significance tests less powerful.

**Table 23: An Example of a Correlation Matrix**

	<b>Filings</b>	<b>Dispositions</b>	<b>Number of Judges</b>	<b>Number of Jury Trials</b>	<b>Population</b>
Filings	1.00	.99	.97	.85	.83
Dispositions	.99	1.00	.97	.85	.82
Number of Judges	.97	.97	1.00	.83	.91
Number of Jury Trials	.85	.85	.83	1.00	.58
Population	.83	.82	.91	.58	1.00

Table 23 shows the correlation between the number of judges and several potential indicators of judicial need in a sample state.

Even a quick look at the table shows that most of the measures are highly correlated. For example, the correlation value is .97 between the number of judges and total filings. Also note that there are high correlations among the independent variables: total filings, total dispositions, population, and the number of jury trials. But what does highly correlated mean? A rule of thumb is that a correlation coefficient of greater than .8 or less than -.8 indicates a high correlation between the pair of independent variables.

A high correlation among the independent variables means that each is essentially measuring the same thing. Courts with high levels of total filings almost always have a large number of total dispositions, have more jury trials, and are located in counties with large populations. These measures are different ways of expressing the same concept: the greater the amount of work (whether measures as filings, dispositions, trials, or population served), the more judges are needed.

Because the potential independent variables are highly correlated, only one or two are needed in the model. In fact, the strength of the model is directly related to a lack of correlation between independent variables. To ensure that correlation between independent variables is kept to a minimum, one should simply leave the extra variables out of the model or create an index composed of those indicators.

### ***Which Variables Should Be Left In or Be Taken Out?***

When the analyst has several different but highly correlated independent variables available to estimate the need for judges, this handbook argues that filings should be chosen.<sup>74</sup> Using filings as the only independent variable to estimate the need for judges is straightforward, is easy to interpret, and

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<sup>74</sup> For models with several independent variables, each variable can be entered into the equation one at a time to see if the estimate of number of judges is improved. The first variable entered is the one with the highest simple correlation with the dependent variable; the second is the one with the highest partial correlation with the dependent variable (highest correlation taking into account the effects of the first variable). Tolerance is defined as the proportion of that variable's variance not explained by other variables in the equations. A tolerance close to zero (e.g., less than .01) indicates severe multicollinearity. Finkelstein and Levin, op. cit., p. 376.

makes sense. While there is no statistical principle at work here, total filings has a number of advantages over other potential indicators like dispositions and population.

- Filings are a *direct* measure of the need for court services. Filings come from outside the court. They are generated by the community and provide the best independent measure of judicial need. As filings increase beyond a certain level, more judges will be needed if the current level of service is to be maintained.
- Factors such as dispositions and the number of jury trials are *indirect* measures of judicial need. While these measures are certainly related to judicial need, their level is subject to greater control by the court filings. Court-initiated programs such as alternative dispute resolution or efforts to “clean the docket” can significantly increase the number of dispositions without increasing the work done by judges.
- Population is often used as an indicator of judicial need because it is highly related (a *surrogate*) to the demand for court services (i.e., every 1,000 people living in the state tend to generate X number of filings in the court). Yet if one has information on the actual number of filings, why not use that information instead? Further, using population assumes that filing rates per 1,000 population are the same around the state. Using actual filings adds no such constraint to the model. At least one state uses an index of filings and population together to measure demand for court services.

For ease of presentation, the model discussed in more detail below uses total filings as the single independent variable to estimate judicial need.<sup>75</sup>

### Step 3: Develop the Statistical Model

Let’s take a step back and restate what the model is being asked to do and clarify some of the key assumptions. The *goal* is to estimate the number of judges necessary to process the caseload entering each circuit in the state. The *problem* is that the information available to measure workload in each circuit is limited. Attacking the problem requires the analyst to make some critical *assumptions*. The integrity of the results rest, to a large extent, on how close the assumptions are to reality.

Assumptions:

- Total filings are a proxy for workload. Clearly, raw filing data is not the optimal measure of workload, but it may be the best measure available.
- Filing data is complete and accurate throughout the state. The strength of using raw filing data as a proxy for workload increases directly with the quality of the filing data.

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<sup>75</sup> Of course, the basic two-variable regression model can be expanded to contain two or more independent variables. Such a multiple-variable regression model assumes that the dependent variable (e.g., judges) is a linear function of a set of independent variables. The model is a natural extension of the process discussed in this section.

- The mix of cases handled by each circuit is similar throughout the state. The closer each state's circuit is to handling an equal proportion of each case type (e.g., felony, tort, divorce, and delinquency), the better filings will estimate need for judges.
- Judges throughout the state spend about the same amount of time on each particular type of case. The validity of the judicial need estimates increases to the extent that judges use similar procedures in processing cases and have a similar mix of complex and ordinary litigation.
- There is a stable, mathematical relationship between the quantity of work entering the court and the number of judges required. The number of cases being handled per judge, before a new judge is recommended, is the same in the smallest courts as it is in the largest courts. No economies or diseconomies of scale are assumed in the model.

Not all of these assumptions will hold in a given state. The predictive accuracy of the model, therefore, will not be perfect. However, to the extent that a given state *approaches* the situation described in *most* of these assumptions, a low-cost statistical model will provide useful information.

Numerous techniques exist to estimate the number of judges needed in a given state (e.g., asking the judges in each circuit, getting the gut feeling of the court administrator, or drawing a number out of a hat), but often these methods result in “bad” estimates. The primary role of the analyst is to generate a good estimate in a given situation—even if based upon limited data. The approach described below uses *regression analysis* to determine the relationship between total filings and the need for judges. The advantage of clearly specifying assumptions and clearly defining each variable is that consistent results are obtained. Therefore, it will be possible to work on improving the predictability of the model.

Regression involves fitting a line or curve (called the regression) to data. This analysis uses the regression equation in attempting to predict the level of the dependent variable (e.g., the number of judges) based on the level of some independent indicators (e.g., total filings).

Equation 1 displays the form of the regression equation:

$$(1) \text{ Estimated Number of Judges} = \text{constant term} + \beta \times (\text{Total Filings}),$$

where  $\beta$  defines the relationship between filings and judges. Equation 2 shows the regression model constructed for the data from a hypothetical state:<sup>76</sup>

$$(2) \text{ Estimated Number of Judges} = 1.18 + .000713 \times (\text{Total Filings}).$$

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<sup>76</sup> The constant term and the coefficients are calculated by all statistical software packages that include regression analysis.



The coefficient .000713 (the  $\beta$  in the equation above) means that for every additional filing coming into the court, the court needs .000713 additional judges. Equation 3 shows the estimate for the number of judges needed in a circuit that receives 10,000 filings a year:

$$(3) \ 8.31 = 1.18 + .000713 \times (10,000).$$

By simply inserting the actual number of filings from each circuit into the equation, one can estimate the need for judges.

Generally, the relationships among the variables are not perfect (such that every observation falls precisely on the regression line). Therefore, each equation contains a random disturbance or error term into the equation, which for our example becomes Equation 4:

$$(4) \text{ Estimated Number of Judges} = 1.18 + .000713 \times (\text{Total Filings}) + e.$$

The error term “e” stems from several possible sources, including (a) sampling error in the data, (b) error in how the information is categorized, and (c) error in how the data is measured. Numerically, the error term is viewed as the residual or difference between the predicted value and the true value of the dependent variable.

Let’s review how the estimate of judicial need shown above was derived by developing a regression model for our hypothetical state.

**Table 24: Data for Regression Model**

District	Number of Filings	Number of Judges	Estimated Judges	Difference Between Estimated and Actual
1	6,520	6	5.8	-.2
2	26,861	20	20.3	+.3
3	4,771	5	4.6	-.4
4	1,485	2	2.2	+.2
5	6,660	7	5.9	-1.1
6	1,644	2	2.4	+.4
7	1,994	2	2.6	+.6
8	1,693	2	2.4	+.4
9	2,552	3	3	0
10	632	1	1.6	+.6
11	4,966	4	4.7	+.7
12	2,628	4	3.1	-.9
13	4,364	5	4.3	-.7

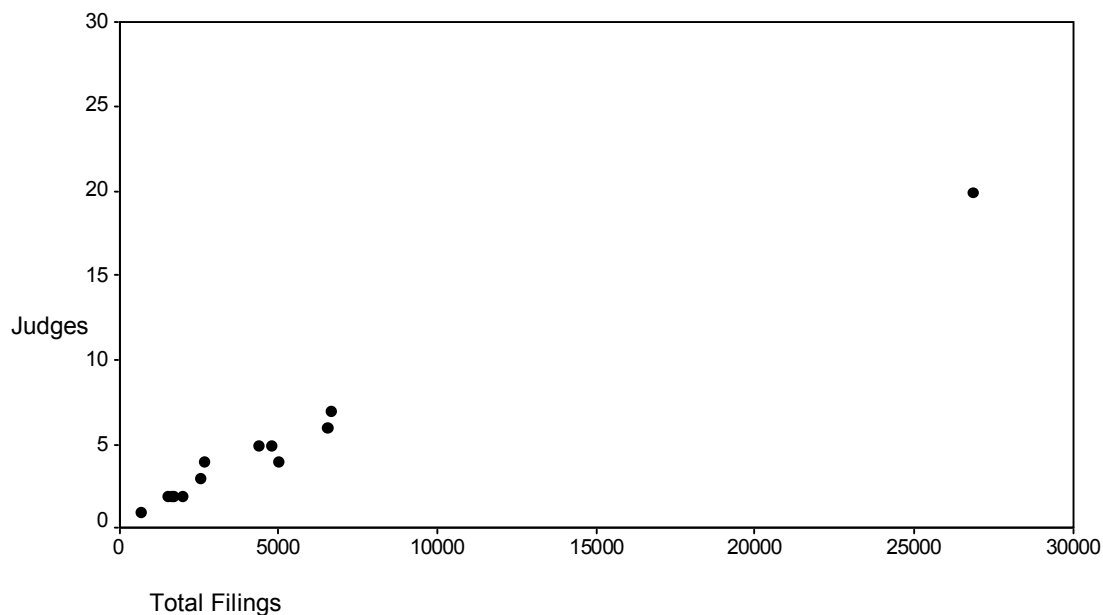
### ***Prepare Data***

Table 24 displays the district number, the total number of filings, and the actual number of judges. The number of filings will be the independent (predicted) variable and judges the dependent (predicted) variable in the regression analysis. The table also shows the difference between the estimated need for judges and the actual number of judges in our sample state.

### ***Display Data in Scatter Diagram***

Once the data in the first three columns of the table are compiled (i.e., district number, number of filings, and number of judges), take time to examine the information visually. Figure E shows graphically the relationship between total filings and actual judges. Each dot on this scatterplot shows the actual number of judges and filings for each district in the state. The number of judges are plotted on the y-axis and total filings on the x-axis. Even though there are relatively few observations, the scatter of points visually indicates positive correlation. However, more precision is needed to explain the relationship between filings and judges.<sup>77</sup>

**Figure E: Example of Scattergram**



### ***Fit the Regression Line***

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<sup>77</sup> Figure E shows that filings and judges appear to be linearly related. If the plot shows that a straight line is not a good summary of the relationship, one should consider other forms of analysis, including techniques to coax a nonlinear relationship into linearity. See, for example, R. S. Pindyck and Daniel L. Rubinfeld, op. cit.

The relationship between x (filings) and y (judges) can further be expressed as a mathematical equation represented by a line (see Figure F). Ordinary Least Squares (OLS) regression analysis is used to determine the best linear fit between x and y.<sup>78</sup> The fitted line and equation can now be used to estimate the relationship between filings and judges based on a regression coefficient.<sup>79</sup> Estimated need for judges is shown in column 4 of Table 24. The vertical difference between each dot and the regression line corresponds to one of the “Differences Between Estimated and Actual” shown in column 5. For example, the arrow points to District 5, and as shown in Table 24, the difference between the dot and the regression line is -1.1.

Notice that almost all of the numbers in the difference column in Table 24 are greater or less than zero. Does this mean that the district needs to gain or lose the number of judges indicated in the difference column? Not necessarily. The next step is to take statistical error into account.<sup>80</sup>

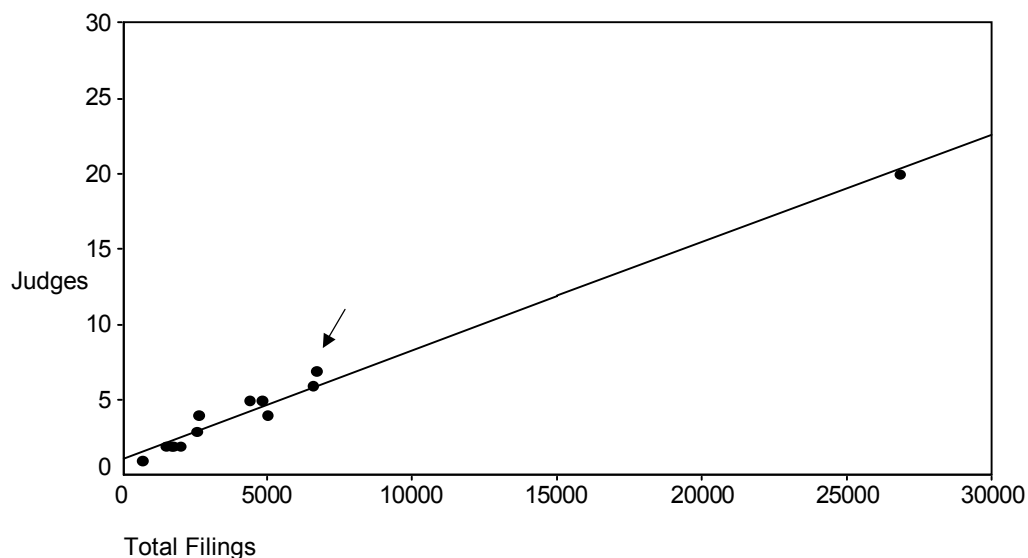
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<sup>78</sup> The R-squared coefficient is the common measure of the overall goodness of fit of the linear model. See a standard statistics text such as Pindyck and Rubinfeld for a discussion of the strengths and weaknesses of using R-square to assess the quality and strength of a given model.

<sup>79</sup> One problem that can occur using OLS regression is the existence of one or more values far removed from the others. In this example, District 2 is the metropolitan court and handles considerably more filings than any other court in the state. As a result, the intercept and slope of the regression line are strongly influenced by District 2. In fact, the slope of the regression line would be different if District 2 is removed from the analysis. However, data points such as this, often called outliers, represent important pieces of information and should not be dropped without further analysis. One possibility is to recalculate the least squares line when the outlier has been removed. Reporting both the original and the new OLS results will provide decision makers with a good idea of the sensitivity of the model to the presence of the outlier and allow one to examine the impact on the estimate of judicial need. Indeed, a careful examination of the impact of the outlier may result in an improved model. If the outlier proves to have a large effect on the regression estimates, the analyst may wish to try a version of weighted least squares. For example, a better fit may be obtained by adjusting filings for population. Dividing total filings in each district by district population gives a population-adjusted filing rate. The regression can then be recalculated using this new “weighted” variable as the independent variable.

<sup>80</sup> Once the OLS regression has been calculated, it is necessary to examine the residuals for evidence that key statistical assumptions have been violated. The residual is what is left over after the model is fit—the difference between the value predicted by the model and the observed value. If the OLS model is appropriate, the residuals should be distributed randomly with respect to the predicted values. One should be suspicious of any observed pattern in the residuals. By carefully examining residuals, the analyst becomes much more knowledgeable about the data being used and any potential difficulties. See a standard statistical text for more information on the analysis of residuals in regression models.

**Figure F: Scattergram with Regression Line**



#### **Step 4: Focus on the Appropriate Courts**

The values shown in the “Estimated Judges” column in Table 24 are called *point estimates*. How do we determine whether the difference between the actual number of judges and the estimated judicial need is large enough to warrant further investigation? Because there is some error involved in the estimation process, the uncertainty in the point estimate must be accounted for by constructing a confidence bound around the regression line.

The regression line is the straight line that best fits the data. That is, for a given number of filings, the regression equation provides an estimate of judicial need on the regression line. There is some error involved shown by the fact that the data points are scattered on either side of the regression line. A frequent assumption is that the error term values are distributed normally about the regression line with a standard deviation<sup>81</sup> called the *standard error of the estimate*.

The standard error of the estimate provides a means for assessing the probability that the actual number of judges in a district is close to the predicted value of the model. The standard error is used to specify what “close” means. About 68 percent of all actual values will fall within the range of the predicted value plus or minus one standard error. In this example, the standard error of the estimate is found to be .64 units vertically above and below the regression line. Consequently, for a district with 10,000 filings, the estimate of judicial need within one standard error of the estimate is:

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<sup>81</sup> The standard deviation is a computed measure of spread or dispersion in a distribution of data, based on the squared deviations of each point from the mean, that can be used to indicate the proportion of data that fall within certain ranges of values.

(5) Judgeship needs estimate =  $8.31 \pm .64$ .

or between the limits of 7.67 and 8.95.

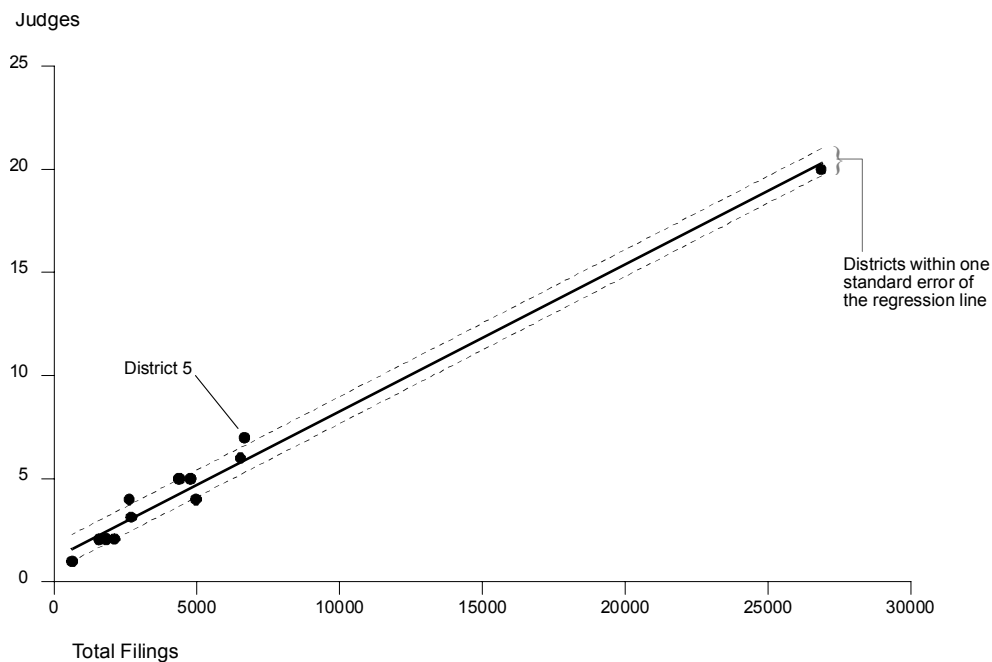
Therefore, the estimate of judge need in District 1, from Table 24, is:

(6)  $1.18 + .000713(6,520) = 5.8$ .

whereas the actual number of judges in the circuit is 6. The estimated standard error means that the actual value is likely to fall, even if not on the line, within  $5.8 \pm .64$ . In other words, the actual number of judges is expected to fall between 5.16 and 6.44.

Incorporating the standard error of the estimate into the analysis gives us the pair of broken lines in Figure G. Each broken line is one standard error away from the regression line. If the actual number of judges (shown by the dots on the chart) lies inside the broken lines, then the model suggests that these courts are “appropriately” staffed. Using the model as a guide, the analyst should focus attention on the districts that lie outside the broken lines. These are the courts where the evidence (based on total filings) suggests that the districts have too few or too many judges. For example, because District 5 is more than one standard error from the regression line, the model suggests that this district has more judicial resources than is typical of other districts in the state—based strictly on filings.

**Figure G: Example of Regressions Line with Confidence Interval**



Setting the lines one standard error apart (rather than two or three) ensures that a number of courts will be singled out for further examination. Employing a standard that is not too stringent (one standard error) allows one to use total filings, for example, as a screening device. This technique is realistic in that a number of other factors, in addition to filings, will undoubtedly enter into the decision of whether a court has too few or too many judges.

### **Step 5: Develop a Qualitative Assessment**

Caseload is a critical factor, but not the only factor in determining judgeship need. Steps 1 through 4 use basic data to isolate a set of courts that appear to be different from state norms in terms of judicial resources. The next step is to undertake a more intensive, critical examination of the districts identified in the statistical analysis. Potential topics to consider when structuring such a critical assessment include:

- determining whether court staff request additional (or fewer) judicial resources;
- examining caseload trends for evidence of ongoing growth or decline;
- examining whether the mix and complexity of cases handled by the court in question is consistent with other courts around the state;
- determining whether the court is effectively organized and structured; and
- examining the possibility of alternative cost-effective solutions such as the use of commissioners.

The qualitative assessment is covered in more detail in Chapters IV, VI, and X.

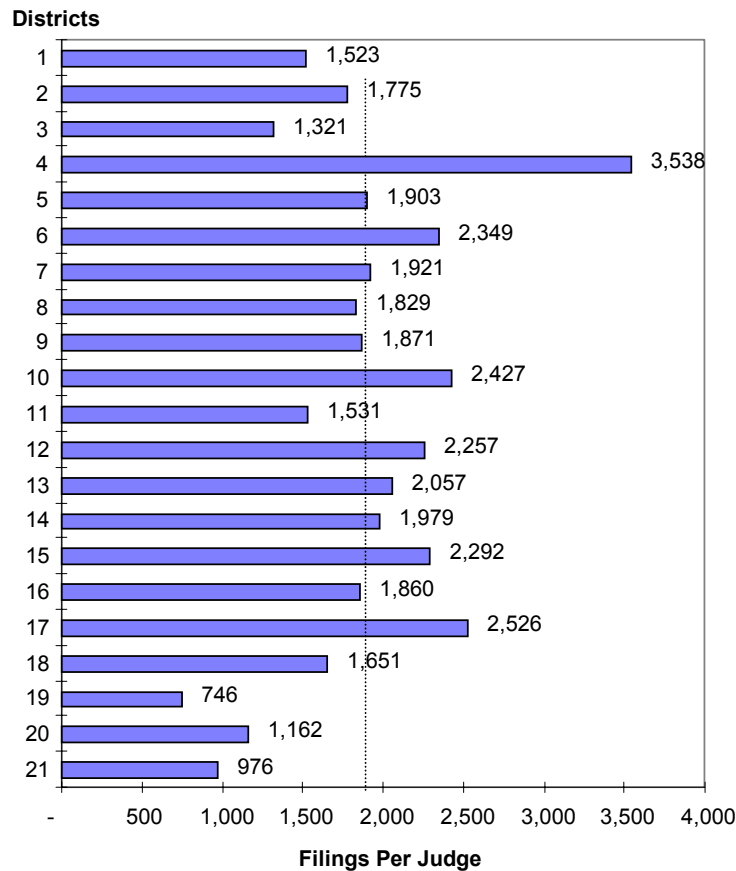
### **SEVERITY OF NEED**

Questions not answered by case weights or the regression model, but perennially asked by legislators are: When are there a sufficient number of judges? Will there ever be enough to eliminate backlog completely? Can the need for new judgeships be mitigated by distributing existing judgeships more equitably or by realigning circuit or district boundaries? Some states, including Illinois, New Mexico, Pennsylvania, and Utah, provide information to the legislature as requested, but do not rank their counties by relative need for judgeships. The best way to equitably assign judges among circuits or districts is to use the Equal Proportions Method discussed in Chapter IV. A more traditional indication of variability of caseload among jurisdiction is presented here.

### **Measuring Variability of Caseloads**

Filings per judge is one of the criteria that can be used to compare relative judicial workloads. Figure H is a bar graph comparing filings per judge by district. The mean number of cases filed per judge is 1,823 (represented by a vertical dotted line), and the mean number of cases filed per judge in each district is shown to the right of the bars.

Figure H: Average Case Filings per Judge in a Hypothetical State



Although a bar graph provides a visual impression of the workload balance among the various re-districting plans, statistical analysis is required to help us select the best plans. The average deviation measures dispersion from the mean in absolute numbers.<sup>82</sup> The deviation from the mean for District 1 is calculated by subtracting filings per judge in District 1 from the mean ( $1823 - 1523 = 300$ ). The subtraction is done using absolute numbers, i.e., without regard to sign. The subtraction is then repeated for each of the other districts. Finally, the mean of these absolute deviations is calculated to yield the average deviation. In this case, the average deviation is 357.5 cases per district.

To compare the dispersion of filings per judge per district of one re-districting plan with others, one must compute a measure of relative variability. In this instance, a coefficient of deviation expresses the average deviation as a percentage of the mean. In our example, the average deviation (357.5) divided by the mean (1,823) results in a coefficient of deviation of 19.6. In other words, the

<sup>82</sup> For a discussion of the average deviation, see V. O. Key, Jr., *A Primer of Statistics for Political Scientists* (New York: Thomas Y. Crowell Co., 1966), pp. 15-18.

average number of cases disposed per judge differs from the mean by approximately 20 percent under the current plan. The lower the coefficient of deviation, the smaller the difference in caseload per judge among the districts.

The standard deviation is a more widely used method of measuring dispersion than the average deviation. It is calculated by squaring the deviations from the mean, dividing by the total number of cases (with a statistical correction factor subtracted from the number), and then taking the square root of the quotient. Squaring the deviations gives extra weight to those cases that fall far beyond the mean. As a result of the mathematical properties of the standard deviation, if dispositions per judge are normally distributed, two-thirds of them are expected to fall within one standard deviation of the mean and 95 percent within two standard deviations.

The standard deviation, like the average deviation, may be converted into standardized units by dividing it by the mean. This statistic is called the coefficient of variation. The result of the calculation is multiplied by 100 to put the coefficient of variation on a scale of 0 to 100.

## **TRADITIONAL MEASURES FOR COURT SUPPORT STAFF**

### **Basic Guidelines**

Workload standards for court support staff are rare in the United States. Although there are no set guidelines in Delaware, the practice has been to request one judicial secretary, one law clerk, one court reporter, one court clerk, and one bailiff for each new judgeship.<sup>83</sup> In Connecticut, each trial court judge is assigned one temporary assistant clerk and one court reporter or monitor. One secretary is assigned for every four judges.<sup>84</sup> In Kansas, each county in the state is required by statute to have a district court clerk. The number of deputy clerks are determined by size of court, employees supervised, caseload activity, and county population.<sup>85</sup> New York has also established trial court staffing guidelines.<sup>86</sup> The New York staffing guidelines recognize operational differences associated with court size by separating supreme and county courts into four groups based in populations and case volumes. Seven categories are used to classify staff: (1) judges, (2) chambers, (3) law department, (4) court reporting, (5) court support, (6) court operations, and (7) security. The chambers category includes those secretarial positions assigned to a judge and legal positions that the judge appoints. The court support category includes personnel responsible for supervising nonjudicial positions and for managing the administrative functions of the court, including court financing, jury man-

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<sup>83</sup> Private correspondence from Lowell Groundland, Director of the Administrative Office of the Courts, Delaware, 1995.

<sup>84</sup> Private correspondence from Martin R. Libbin, Attorney, Legal Services, Office of State Court Administrator, dated December 13, 1995.

<sup>85</sup> Private correspondence from Kimberly Gordon, Statistical Technician, Office of Judicial Administration, dated December 26, 1995.

<sup>86</sup> Courts of Original Jurisdiction, "Trial Court Staffing Guidelines," unpublished document (December 1992). Submitted by Chester H. Mount, Jr., Deputy Director for Data Services, Office of Management Support, New York.



agement, and human resources. The court operations category includes persons assigned to handle case administration.

Previous chapters have indicated how the weighted caseload or regression techniques established for judges could be modified and used to estimate the need for support staff. This section covers some of the traditional methods used by states to determine the need for court support staff.

## Ratio Models

Ratio models assume that the need for support staff can be determined as a fixed ratio of court support staff to trial court judges, caseloads, or population.<sup>87</sup> These simple ratios are attractive because they are easy to understand, easy to maintain and update (ideally as part of the ongoing information reported by the case information system) in caseloads, and inexpensive.<sup>88</sup> On the other hand, simple judge to staff ratios that do not control for differences in case mix may not adequately account for regional differences in the types of cases handled or for differences in judicial workload between urban and rural settings. For example, a highly automated court may have fewer staff to handle larger caseloads, but cost per staff member may be higher because of the technical training required.

A National Center for State Courts study in Broward County, Florida, calculated separate workload for complex cases and a separate workload figure for less complex cases.<sup>89</sup> The formula was one FTE staff member for 1,281 misdemeanor, ordinance, or county civil filings, and one staff member per 350 felony, probate, or juvenile filings.

In Wisconsin, Steadman and Murphy found an average staff to judge ratio of 6.47, with a range of three staff per judge to ten staff per judge, depending upon the county.<sup>90</sup> Colorado advanced the use of ratio models one step further by extending them to include non-case processing activities.<sup>91</sup> The Colorado model also distinguishes between staff needed in rural and urban courts. The most recent study reveals that urban district judges usually have three staff in a division: a court reporter, a division clerk, and an assistant division clerk, bailiff, or law clerk. Urban county judges typically have two staff and rural county judges only one. Overall, Colorado has a staff to judge ratio of 4.83 in

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<sup>87</sup> Harry Lawson and Barbara Gletne, *Workload Measures in the Courts* (Williamsburg, Va.: National Center for State Courts, 1980).

<sup>88</sup> *Ibid.*, p. 158.

<sup>89</sup> James R. James, Ned A. Mitchell, and Elisabeth G. McNamara, *A Management Analysis of the Broward County Clerks Office* (Atlanta, Ga.: National Center for State Courts, 1982).

<sup>90</sup> Steven R. Steadman and Kathleen M. Murphy, "Analysis of Court Support Staffing Levels in Wisconsin," unpublished study (May 17, 1991), p. 32.

<sup>91</sup> Colorado State Court Administrator's Committee on Weighted Caseload Standards, *Weighted Caseload Standards for Trial Court Case Processing Staff* (Supreme Court of Colorado, March 1989).

urban areas, whereas rural courts have a ratio of 3.83 staff per judge.<sup>92</sup> An urban clerk can handle 346 criminal cases per year (207 homicide cases).

### ***The Federal Courts Approach***

Like Colorado courts, the federal courts have a weighted caseload system, but federal courts use a different formula to estimate future space requirements. The long-range planning process of the Administrative Office of U.S. Courts is based on the assumption that caseloads should determine staffing needs, which, in turn, dictate the need for space.<sup>93</sup> The Administrative Office of U.S. Courts categorizes each of the 94 districts into one of four categories on the basis of total caseload. For example, Growth Model 1 is comprised of districts that cover a wide geographic area or a single city that have a relatively stable or slow-growing caseload. Growth Model 4 includes districts with large metropolitan areas and rapidly growing caseloads. The Administrative Office of U.S. Courts uses ratios of caseload to key personnel to convert projected caseloads to staffing needs. Table 25 shows the ratio of judges to caseloads and then the ratio of support personnel to judges based on 1991 data.<sup>94</sup>

**Table 25: Growth Models—Ratios of Key Personnel to Defined Caseloads and Ratios of Support Personnel to Key Personnel**

<b>Court Component</b>	<b>Personnel Classification</b>	<b>Growth Model 1</b>	<b>Growth Model 2</b>	<b>Growth Model 3</b>	<b>Growth Model 4</b>
District Court	Judge*	363 civil and criminal cases	426 civil and criminal cases	496 civil and criminal cases	541 civil and criminal cases
	Senior Judge	.33 per judge	.33 per judge	.40 per judge	.45 per judge
	Magistrate	.33 per judge	.50 per judge	.50 per judge	.70 per judge
	Clerk	6 per judge	7 per judge	8 per judge	9 per judge
Bankruptcy Court	Judge*	1,424 filings	1,468 filings	2,172 filings	2,428 filings
	Clerk	12 per judge	14 per judge	14.5 per judge	15 per judge
Probation	Officer*	30 supervised	31 supervised	31 supervised	31 supervised
	Clerical	.63 per officer	.63 per officer	.62 per officer	.60 per officer
Pretrial	Officer*	106 criminal cases	110 criminal cases	115 criminal cases	90 criminal cases
	Clerical	.60 per officer	.66 per officer	.57 per officer	.54 per officer
Public Defenders	Attorney*	110 criminal cases	101 criminal cases	101 criminal cases	76 criminal cases
	Investigator	.25 per attorney	.25 per attorney	.25 per attorney	.22 per attorney
	Paralegal	.10 per attorney	.10 per attorney	.10 per attorney	.10 per attorney
	Clerical	.60 per attorney	.60 per attorney	.63 per attorney	.69 per attorney
Circuit Court	Judge	.33 per District judge	.33 per District judge	.30 per District judge	.25 per District judge
	Senior Judge	.33 per Circuit judge	.50 per Circuit judge	.30 per Circuit judge	.66 per Circuit judge

\* Indicates key personnel position; the ratio is based on caseload.

<sup>92</sup> “Report to the Weighted Caseload Committee on Trial Courts and Appellate Staff,” unpublished study (September 1994), p. 6.

<sup>93</sup> United States General Accounting Office, *Federal Judiciary Space: Long Range Planning Process Needs Revision* (Washington, D.C.: GAO/GG D-93-132, September 1993), p. 2.

<sup>94</sup> *Ibid.*, p. 20.

Source: AOC's Facility Projection Packages.

As an illustration of how the model works, a civil and criminal caseload of 2,978 in Growth Model 2 would require seven district court judges (2,978 cases divided by 426 cases per judge), 3.5 FTE magistrate judges (.5 magistrates per judge), and 49 clerks (seven per judge). For the purposes for which these ratios were produced, the next step would be to project space requirements (in this instance, 43,015 square feet of space for the seven district court judges). However, that process need not concern us here.

### ***The New Jersey Approach***

New Jersey has experimented with a variant of the ratio model, but one much more detailed and sophisticated.<sup>95</sup> The model has three steps: (1) description of current staffing patterns, (2) establishing a staffing norm, and (3) comparison of the actual staffing patterns to the staffing norms. The object of this exposition is to explain the process, not to analyze a particular set of data, so county names are replaced by identifying numbers and data are presented from only a few counties.

***Description of staffing patterns.*** The New Jersey ratio model requires a detailed analysis of the work performed by court support staff both inside and outside of the courtroom. The process is as detailed as the analysis of activities needed to perform a weighted caseload study.

Table 26 shows functional areas of work performed by court support staff, number of staff assigned to each function, and percentage of total court support staff assigned to each function.

***Administration.*** All administrative functions of the Criminal Division, such as budget, training, and personnel, are classified here without differentiation. Table 26 shows 3.78 percent of court staff time overall is devoted to administrative activities.

***Courtroom support.*** Support staff for this activity includes law clerks, court clerks, judges' secretaries, and other court aides. Data from 1995 show that one third (32.69%) of court staff were used to support judges in their courtroom duties.

***Calendar management.*** Calendar management activities include assigning cases; preparing calendars; scheduling motions, municipal appeals, writs, postconviction relief; preparing statistics and reports; and keeping records incidental to calendar coordination. More court support staff (39.13%) are assigned to calendar management activities than to any other activity.

***Intake.*** Intake staff includes bail, indigency, and substance abuse evaluators.

***Other.*** Other functions include programming and designing reports and supervising offenders on bail or PTI conditions.

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<sup>95</sup> The authors are grateful to staff of the New Jersey Administrative Office of the Courts, especially John P. McCarthy, Jr., Assistant Director for Criminal Division, for providing the staffing ratio tables.

*insert table 26-27: s:\judgnd\handbook\revise\table28.xls*

The remaining columns of Table 26 provide estimates of court support staff per 550 indictments and per FTE judges by county (550 represents the average filings per judge). Even with the abbreviated data presented in the table, it is clear that staffing levels vary by county. Examination of the complete data for all 21 counties shows that staffing levels in 1995 ranged between 10.35 FTE staff per 550 indictments and 27.6 staff per 550 indictments. Note also that the average ratio of 18.10 staff per judge covers the range from 11.48 staff per FTE judge to 30.89 staff per FTE judge.

It is probably not surprising that the two different measures (staff per 550 indictments and staff per judge) yield different results. Some staff functions, support for judges in the courtroom for example, are related directly to the number of judges, whereas others, such as answering telephone calls, are more related to caseloads.

*Establishing a norm.* Once a profile of court activities and current staffing levels has been developed, the next step is to use the ratio model to estimate how many staff are actually required to do the work. Actual staffing levels are compared with estimated need generated by the ratio model (also called the norm) for specific types of court support staff in Table 27.

These norms are more than just averages of the existing time it takes to perform each activity. Once averages are established, a conference of criminal justice managers examine the relationship between quality and productivity and adjust the norm. For example, they might examine the average amount of time it takes staff to write pre-sentence reports. Then they might sample the reports to determine whether staff who write more reports are doing so at the expense of the completeness and comprehensiveness. As well as the time it requires to produce the best reports and time required to cross-train staff to write reports. These considerations then are used to adjust the average (change the norm). The norms, then, are not set in stone, but adjusted as “best practices” change.

*Comparing actual to the norm.* The final step is to compare actual staffing patterns to the staffing norms. For example, the 59.7 total administrative staff in Table 26 are distributed into the four administrative job classes shown in Table 27 (i.e., division manager, assistant manager, administrative assistant, secretary). Court managers can then compare actual staffing levels (e.g., 7.4 total administrative assistants) with the model results (e.g., 11.2 administrative assistants). This ratio model allows for comparison of actual staffing to estimated need between counties as well as statewide. Over time, the actual number and assignments of staff will approach the number and assignments contained in the model. Table 27 compares the actual to the recommended staffing for 1995.

## Chapter X

### Implementing a Resource Need Assessment

This report has surveyed a wide variety of methods used by states to assess the need for judges and court support personnel. What lessons can be drawn from this survey?

#### **WEIGHTED CASELOAD IS A FEASIBLE METHOD OF DETERMINING THE NEED FOR JUDGESHIPS AND SUPPORT STAFF**

Weighted caseload studies are perhaps the best way to adjust for variations in the “mix” of cases filed in courts. It follows then that weighted caseload methods will be most useful in courts with a wide variety of case types. Weighted caseload studies adjust for the differences in time it takes judges and court support staff to process cases. The weighted caseload approach can be employed for a reasonable cost and the weights kept current if a well-conceived audit and update strategy are developed.

Courts with relatively homogeneous caseloads and courts with specialized jurisdictions may not receive the same benefit from weighted caseload studies. For these courts, unweighted case filings or the use of fewer, broader weighted caseload categories may be sufficient. Estimating workload, using both weighted and unweighted filings and comparing the differences, is a way to determine the usefulness of case weights.

Weighted caseload systems can be used in conjunction with simulation models to determine how judicial positions can be most effectively allocated within the court. Those simulation models that focus on time to disposition as an output can use weighted caseload estimates in simulation experiments to assess the impact that changes in the number of judges and court support staff have on case processing time. Simulation models can also be used to design calendar assignments for additional judges and determine the best assignment patterns for court support staff. The ability of simulation to measure the impact of various “what if” scenarios and alternative work assignments make them very useful management tools.

#### **CHARACTERISTICS OF A WEIGHTED CASELOAD APPROACH**

##### **Designed Effectively**

The hallmark of a service-oriented court is one that is readily accessible to the public and decides cases impartially and reasonably quickly. Weighted caseload systems provide an objective measure of the judges and court support staff necessary to dispose of cases efficiently and effectively. Like any model, it is most useful as a *guide* to workloads, not a rigid formula. Consequently, good weighted caseload systems should be sufficiently:

- *flexible* to allow for variations in caseload, case mix, and court structure among counties of different size.
- *comprehensive* to include the major categories of cases. In other words, they should have sufficient detail to describe the variety of work faced by the court, but not so much detail as to make data collection and analysis burdensome. Use the *minimum* number of case categories necessary to estimate workload. Each case category used increases the sample size of the study, and thus the cost for those who must track case processing time. Combine and consolidate case types that have similar case processing time or that are proportionately distributed among counties.
- *user-friendly* so that managers can use and understand the information to maximize the productivity of judges and court support staff.

## **Valid**

The acceptance and usefulness of a weighted caseload system depends on the weights being valid measures of workload and making sense to court managers and other decision makers. The validity of case weights can be determined in three ways.

### ***Examination by Judges and Court Support Staff***

Case weights reflect the average amount of time required to process each type of case. Some cases will take more time than their weight and others less, but over the long run, the case weights show the amount of time spent by judges or staff on each type of case. The weights should confirm common sense in that homicides should require more time than other felonies, and tort cases should require more time than other civil cases. Visual inspection by judges and court support staff should be used to assess whether the weights have “face validity,” that is, whether they make sense to court professionals. Moreover, the relative differences in weights reflect the qualitative assessment of judges and state court administrative staff.

### ***Application of Case Weights to Previous Year’s Caseload***

Applying case weights to the previous year’s filings is another quick method of determining how realistic the weights are. If the case weights were applied to last year’s caseload, does the model show that the judges or court support staff could actually handled the estimated workload? For example, if weights caseloads assigned to last year’s dispositions so that case weights assigned to last year’s dispositions suggest that each judge required 55,000 minutes of case-related time. Does that figure square with the empirically determined judge year?

### ***Comparison with Weights in Other States***

As more states experiment with weighted caseloads, interstate comparisons become possible. Exact congruence of weights are not expected of course, given the variations in court structure, jurisdiction, case definitions, and practices among states. Indeed, some variation would be expected

statistically if several weighted caseloads surveys were done within a single state. However, similarities do exist between states in terms of case processing, and it is an encouraging sign when rough correspondences in case weights are found among states.

Table 28 compares case weights for three states with a two-tiered court structure. The weights for judges in both general and limited jurisdiction courts are relatively consistent, despite some variation in the case types used. When making comparisons, please remember that case weights are given in minutes.

**Table 28: Judicial Case Weights for Trial Courts in Selected States**

**General Jurisdiction**

<b>Nebraska District Court</b>	<b>Case Weight</b>	<b>New Mexico District Court</b>	<b>Case Weight</b>	<b>Washington Superior Court</b>	<b>Case Weight</b>
Criminal	129.98	Felony	103.14	Person Crime	395.00
Civil	63.95	DWI	57.12	Property Crime	113.00
Domestic Relations	80.83	Criminal appeals	49.54	Criminal Appeal	87.00
Appeals	40.58	Tort	51.58	Other Crimes	82.00
		Contract	41.57	Tort	172.00
		Other Civil	44.16	Commercial	76.00
		Domestic Relations	37.65	Other Civil	42.00
		Domestic Violence	81.10	Probate	13.00
		Juv. Abuse and Neglect	59.95	Domest/Paternity	51.00
		Juv. Delinquency	53.27	Juvenile Dep/ARP	119.00
		Appeals	35.30	Juvenile Offender	47.00

**Limited Jurisdiction**

<b>Nebraska County Court</b>	<b>Case Weight</b>	<b>New Mexico Magistrate Court</b>	<b>Case Weight</b>	<b>Washington District Court</b>	<b>Case Weight</b>
Felony		Felony	27.64	Felony	7.00
Misd/Ordinances	13.99	DWI	36.05	DWI	35.27
Traffic	1.94	Misdemeanors	33.83	Misdemeanors	15.69
Civil	11.97	Traffic Contested	20.58	Traffic Contested	12.41
Small Claims	10.02	Landlord/Tenant	20.78	Civil	8.91
Probate	8.95	Other Civil	16.31	Domestic Violence	8.31
Juvenile	49.87	Domestic Violence	21.28	Parking	0.27
Other Cases	26.48			City Ordinances	0.86

**Up-to-Date**

The weights need to be monitored and periodically updated to ensure that the weights continue to accurately reflect workload in the courts. Consider methods of updating weights as part of the initial design to ensure that weights maintain their credibility. Updates are absolutely essential to control for new legislation changes in court jurisdiction and the introduction of new case types. Validating the weights through a complete weighted caseload study every few years is costly—and probably unnecessary. One approach to consider is to examine a small, “rolling” sample of case event times and frequencies to determine whether the task weights remain valid. The analyst may wish to focus attention on specific events that are particularly long or occur with great frequency. Samples should also be drawn from different counties to distribute the burden. Establishing an ongoing committee of



judges and court managers to review the methodology periodically will go a long way toward maintaining the credibility of case weights.

Adjustments made periodically to particular case weights as the need arises will obviate the necessity to conduct a full-blown weighted caseload study. Moreover, sample sizes to merely confirm that case weights have not changed can be smaller than those used to establish weights. If the smaller sample of selected case events reveals no significant change in case weights, the court can be assured that the weights are still valid. If a significant difference occurs in the processing time of particular case events, a larger sample from more counties can be drawn. However, *only* the particular case events that experienced changes (rather than all events for all case types) need be included in the weighted caseload study.

### **Tempered by Qualitative Criteria**

All quantitative models should be tempered by qualitative criteria. Because this principle applies to all models, it is discussed separately at the end of this chapter.

## **OVERCOMING LIMITATIONS OF WEIGHTED CASELOAD**

In addition to the criticism that case weights are difficult to keep current, which was just addressed above, four other major criticisms that have been raised against the weighted caseload technique.

- Resource need is too narrowly defined.
- Time data are costly and difficult to collect.
- The weights enshrine inefficiency.
- The weights do not capture workload differences across the state.

Fortunately, all of these concerns can be overcome. Indeed, a state's response to these potential limitations defines the quality and utility of the weighted caseload system. Addressing each of these challenges directly improves the likelihood that measures can be developed and implemented to ensure that the weights accurately and reliably reflect the need for court resources—now and in the future.

### **Expand the Definition of Resource Need to Include Quasi-Judicial Officers and Court Support Staff as well as Judges**

An accurate estimate of the need for new judgeships, not to mention a credible assessment of overall court resources, must take the availability of quasi-judicial officers and court support staff into account. Without a methodology for assessing explicitly the need for support personnel, the criteria for allocating judicial positions may be misleading, especially if the criteria for measuring judge need are *different* from the criteria for determining the need for court support personnel.

Keep in mind that a minimum number of judges and court support personnel are necessary to keep an office open, regardless of the number of cases, so that people in sparsely populated areas are not denied court services. One NCSC study suggested that three full-time employees are needed to

keep an office open and to provide adequate coverage if an employee is ill, on vacation, or performing other duties.<sup>96</sup> That being the case, it might not be necessary to include jurisdictions with small caseloads in the weighted caseload sample, because the decision on staffing is not driven by case volume but by the necessity of keeping courts accessible to the public.

On the other hand, rising caseloads may impact judges and court support staff more critically in small courts. The need for one additional judge on a ten-judge court means that each judge must work 10 percent harder to clean the docket. The need for another judge on a single-judge court would require a judge to carry double the cases.

### **Collect Time Data in a Cost-Efficient Manner**

The time necessary to process court events must be measured directly or estimated. The three ways of obtaining time data are estimates using the Delphi technique, accurate time obtained from court observers, and actual time gathered by self-reports of judges and court staff:

- The *Delphi* technique was originated to allow judges to estimate the amount of time various types of cases take to process, without directly measuring the time spent on each activity. Judges are asked to estimate the time it takes to process specific case types. This technique can result in inflated weights because of the all too human tendency to remember the unusually long or complex cases and to neglect the larger volume of ordinary cases. Judges could come to consensus on the times for court activity, but the times could still be unrealistic.
- *Observer-reports* use third parties, consultants, or students to measure time to complete case activities. They have the advantage of objectivity and of preserving judge time, but the disadvantages of measuring only activities that take place in open court and of being very time-consuming and costly.
- *Self-reports* of judicial activity are a direct way to measure time spent on cases. Judges or court support staff are asked to report the time it takes to complete court activities both on the bench and in chambers. Self-reports may be burdensome because minutes spent in reporting time worked is time carved out of the work day. Judges often use court staff to assist in the measurement of time on the bench (thus reducing the burden and cost).

Self-reports are perhaps the best way to gather information on judges and court support staff because they require direct participation (and buy-in) by the court and because self-reports cover all activities, whether or not they occur in a courtroom.

Following Colorado's practice of having judges comment during the data collection phase on whether the time *actually* spent in processing a case event was the amount of time that the event *should* take adds perspective to case weights and serves to bring "quality of justice" issues to the forefront.

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<sup>96</sup> Gerald B. Kuban et al., *Nonjudicial Personnel Study, Oklahoma Court System* (Williamsburg, Va.: National Center for State Courts, 1985), p. 75.

Accounting for “waiting time” may add realism to case weights. In Illinois, a “courtroom case transition time” of three minutes per court event was inserted to account for activity between cases such as the search for papers and files, the movement of lawyers and litigants, and the general hustle and bustle in the courtroom.<sup>97</sup>

The Colorado experience suggests that cases requiring a court interpreter and cases in which litigants represent themselves without benefit of counsel may require higher case weights. Case weights for judges and court support staff may be most effective if used together, since the quality of support staff work may affect the workload of judges.

### **Ensure that Weights Encourage Effective and Efficient Case Processing**

An underlying goal of case weights is that they measure not just workload, but work done in an efficient manner. From this perspective, case weights should be realistic and, to a degree, aspirational. If the weights simply institutionalize current practice, whether it be sound or not, the weights lose credibility. One response to the criticism that weights merely enshrine inefficiency is to collect data only from the most productive and well-managed courts. That is, base the weights on the practice in courts known to be the most productive by the state court administrative office or those whose case processing times are above the statewide average. It must be remembered, however, that efficient operation must be consistent with the fair and just resolution of cases. The goal is to encourage the expeditious resolution of cases in a manner consistent with justice.

### **Accounting for Variation in Available Judge Time Around the State**

Another means for ensuring that judicial resources are used efficiently throughout the state is to examine whether the time available to judges to hear cases varies by the size of court. As noted above, case weights reflect the typical or average time necessary to process a given case. In California, a criticism is that the averages are driven by practices of the Los Angeles courts because any sample of cases will include a large number of cases from the state’s largest city.<sup>98</sup> One solution to this problem has been to use a separate weight for the largest city in the state. A better solution is to determine exactly where the differences occur and whether they are significant enough to merit separate case weights based on size.

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<sup>97</sup> David Steelman, Circuit Court of Cook County, Illinois Criminal Division, *Judge Workload and Judgeship Needs Assessment* (Denver, Colo.: National Center for State Courts, 1993), p. 6.

<sup>98</sup> Administrative Office of the Courts, *Proposed New Judgeship Needs Determination Methodology* (San Francisco, Calif.: February 1993).

## SUPPORT STAFF AND COURT PERFORMANCE

Using weighted caseload does require a detailed analysis of activities performed by court support staff and to that extent may be more complex than doing a weighted caseload for judges. Weighted caseload is a feasible approach to determining the need for court support staff. Adequate court support staff is critical to the smooth functioning of the courts, and insufficient staff translates directly into reduced service to the public. What is lost when staffing levels are inadequate to perform all support activities? On this score, Steadman's classification of duties performed based on *why* they are required is instructive. He classified duties of Wisconsin clerks of court into the following four categories:<sup>99</sup>

1. Statutory duties required to be performed by the constitution, legislation, rules, or ordinances;
2. Service duties that aid public welfare and the judicial branch;
3. Management duties that involve regulating, supervising, or directing activities within the office; and
4. Political duties that involve interactions with elected officials.

Steadman used these categories to encourage court clerks to estimate the impact of court staff on

court performance. The hypothesis is that failure to perform some tasks is a violation of law, whereas failure to perform others results in inefficient management or inadequate service. An interesting, and unexpected, finding from the Wisconsin study was the reluctance of clerks to report the need for additional staff.

The primary purpose of staffing models is to ensure that adequate staff are available to process court caseload in a timely, efficient manner. Clerks were asked not only which duties would be delayed or neglected if the number of court support staff were inadequate, but conversely what tasks would be performed by clerks if additional staff were hired.<sup>100</sup> These additional "potential" tasks and services are classified in Table 29 according to the National Center for State Courts' five major trial court performance categories.<sup>101</sup>

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<sup>99</sup> Steven R. Steadman, "Structured Factorial Sort Survey: Wisconsin Clerks of Courts' Perception on Compliance and the Need for Staff Across Their Typology of Duties," in Steadman and Murphy, *op. cit.*, p. 8.

<sup>100</sup> Steadman, *ibid.*, p. 38.

<sup>101</sup> *Trial Court Performance Standards with Commentary* (Williamsburg, Va.: National Center for State Courts, 1990).

**Table 29: Using the Trial Performance Standards to Frame the Benefits of Adequate Court Support Staff**

<b><i>Access to Justice</i></b>	<ul style="list-style-type: none"> <li>Develop a system to reduce waiting time at the counter</li> <li>Train staff to better serve public</li> <li>Answer constituent questions</li> <li>Assist public in completing small claims complaints</li> </ul>
<b><i>Expedition and Timeliness</i></b>	<ul style="list-style-type: none"> <li>Update docket entries on day of activity</li> <li>File papers within 24 hours of receipt</li> <li>Monitor, follow up, and collect overdue fines</li> <li>File report of unclaimed funds with county treasurer</li> <li>Deliver files in good order in advance of court activity</li> </ul>
<b><i>Equality, Fairness, and Integrity</i></b>	<ul style="list-style-type: none"> <li>Update child support records daily</li> <li>Dispose of obsolete records</li> <li>Separate receipting from posting</li> <li>Initiate a program to write off uncollectible funds</li> </ul>
<b><i>Independence and Accountability</i></b>	<ul style="list-style-type: none"> <li>Conduct staff meeting</li> <li>Conduct individual employee evaluations</li> <li>Maintain long-range plan for the office</li> <li>Cross-train employees in your office</li> <li>Provide educational opportunities for staff</li> <li>Take a tutorial on the automated case management system computer in your office</li> <li>Work cooperatively with judge(s)</li> <li>Serve on committee studying court issues</li> <li>Contact legislators regarding proposed statutory changes</li> </ul>
<b><i>Public Trust and Confidence</i></b>	<ul style="list-style-type: none"> <li>Prepare press release on office activity</li> <li>Serve on committees studying court issues</li> <li>Prepare an annual report</li> </ul>

Many of these tasks involve planning and service to litigants and other “customers” of the court. Clerks of court would use additional staff to improve trial court performance, especially in the areas of expedition and timeliness (by improving the integrity of court records) and access to justice (by improving responses to questions from the public).<sup>102</sup>

## **QUALITATIVE CRITERIA TO TEMPER QUANTITATIVE GUIDELINES**

Statistically based estimates provide the baseline for determining the need for judges and court support staff. The numbers, though, need to be tempered by a qualitative assessment that should be an integral part of any criteria to determine the need for judges or court support staff. Serious consideration should be given to having a qualitative review of all sites that are shown through quantitative analysis to need additional judges or court support staff.

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<sup>102</sup> Steadman and Murphy, op. cit., “Overall Conclusions,” p. 4.

**Guideline 11** *One necessary step in assessing the need for judges and court support staff should be an independent review of whether a court appearing to need additional judges could reduce or eliminate the apparent need through operational changes. Part of that review should include opportunities for input from local judges, members of the bar, local elected representatives, and citizens knowledgeable about the operations of that court.*

No set of statistical criteria will be so complete that it encompasses all contingencies. Each circuit or district will have peculiarities in caseload caused by differences in demographics and other factors. Administrative responsibilities of the judges, the location of correctional facilities, variations in case processing practices, and the location of state institutions, including hospitals and educational institutions, are mitigating factors that are legitimate considerations when judgeships and court support staff allocation decisions are being made. Distance from the nearest court may be another qualitative consideration—what is a reasonable distance from courts for the public? A decision to add a judgeship in a rural area that would save the populace from driving for two hours may justify a particular judgeship before quantitative measures, such as case filings, show that one is needed. This consideration points to the need to consider access to justice as a qualitative consideration.

Statistical models cannot anticipate all possible contingencies. It may not even be desirable to do so, because then the established judgeship needs criteria would have to be nearly as complex as the real world. Resource need models that require a large number of data elements are more costly to produce than is justified by the added precision—not to mention the problems associated with ensuring data accuracy. Those challenging the criteria used in the model should bear the burden of proof to help prevent the criteria from becoming so flexible or rigid that the results cease to become guidelines.

Consequently, some provision should be made for local exceptions to the established guidelines. Colorado uses a “variance procedure” to their weighted caseload process, whereby a district can request a special study to determine if an “adjustment” is needed to account for special circumstances. To qualify for a variance, the district must show an imbalance based on case complexity, the length or complexity of trials, local filing practices, or an extraordinary number of special case types.<sup>103</sup> The Task Force Report recommended an independent review to determine whether a court appearing to need judges could reduce the need through operational changes. That remains a good idea. Data should be tempered by experience. (Indeed, the Task Force and its chairman, Dr. Collins, recommend that the on-site review be made even if the quantitative criteria suggest a new judge or court clerk is needed.) Any site challenging the guidelines would especially want to make a written “appeal.” Any circuit or district should be able to request an evaluation of current operating procedures and should

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<sup>103</sup> “Report of the Weighted Caseload Committee in Trial Courts and Appellate Staff,” unpublished study (September 1994), Appendix 4.

have the ability to present a case for adding a new position. The procedure should include a method for systematically soliciting local opinion. A team of qualified individuals should be selected to visit each site to determine if present resources could be used more efficiently and if new procedures or practices would lead to less demand for resources. These site visit teams should consist of judges, courts administrators, and court clerks from districts or circuits that have a reputation for good management and efficient case processing. Team members should not be chosen from circuits or districts that are immediately adjacent to the circuit or district making the request, to avoid appearance of a conflict of interest. The on-site visit will benefit not only those challenging the guidelines, but also the team members, who will be exposed to alternative procedures. Indeed, the visit could stimulate change in the home courts of team members.

Courts that desire new judgeships or court support staff should be able to demonstrate their need despite the implementation of administrative and procedural changes designed to reduce or avoid the need for new judgeships. A review could also determine whether the need is long-term or is caused by a temporary increase in filings or unusually difficult dispositions.

**Guideline 12** *Qualitative adjustments to quantitative criteria used to assess the need for judges and court support staff should themselves be evaluated. If criteria require frequent adjustment after the on-site review, the quantitative criteria may need to be changed.*

Quantitative criteria for assessing the need for judges and court support staff become inflexible if not tempered by qualitative criteria. Conversely, quantitative criteria become less of a guide if they are changed with each challenge and on-site review. Like all the guidelines in this book, a balance among criteria is needed.