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# Span of Control and IHS Staffing Patterns

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# SPAN OF CONTROL AND IHS STAFFING PATTERNS

## FINAL REPORT



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service-- Indian Health Service



# SPAN OF CONTROL AND IHS STAFFING PATTERNS

## FINAL REPORT

### SUBMITTED BY:

Information & Management Technologies, Inc.  
Suite 750, 3 Bethesda Metro Center  
Bethesda, Maryland 20814  
(301) 961-1912  
Purchase Order Number 94IF356366  
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DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PUBLIC HEALTH SERVICE  
INDIAN HEALTH SERVICE

OFFICE OF PLANNING, EVALUATION, AND LEGISLATION  
Acting Associate Director: Ed Simermeyer  
Division of Program Evaluation and Policy Analysis  
Director: Leo J. Nolan

OFFICE OF ADMINISTRATION AND MANAGEMENT  
Acting Deputy Associate Director: Jack Markowitz

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**ANALYSIS**  
**SPAN OF CONTROL**  
**&**  
**IHS STAFFING PATTERNS**

Prepared for:

Indian Health Service  
Rockville, Maryland

Prepared by:

Information & Management Technologies, Inc.  
Suite 750, 3 Bethesda Metro Center  
Bethesda, Maryland 20814  
(301)-961-1912

January, 1995

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## 1.0 Scope of Work and Methodology

The objective of this study was to research the subject of "span of control" as it applies to the management of work, to assess factors impacting on supervisory ratios, to assess Indian Health Service (IHS) staffing data to determine supervisory ratios, to identify relevant industry span of control supervisory ratios, and to make findings and recommendations. The purpose for the study was to assess whether or not the IHS's span of control is consistent with industry standards.

The analysis required research on managerial span of control standards and ratios from a variety of sources, including health care organization literature, Office of Personnel Management (OPM) documentary material, Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards and manuals, and health care industry staffing data. The analysis also involved obtaining, processing, tabulating, and summarizing IHS agency-wide staffing data by occupational series, location, and function to determine span of control supervisory ratios; and similar data from the American Hospital Association (AHA) on staffing patterns.

Several hundred MEDLARS citations to health studies were researched on the subjects of "span of control", "supervision", "staffing", "organization" and "personnel" in order to identify literature on the subject of supervisory ratios. Relevant literature was obtained and reviewed. Some LEXIS research was performed to identify recent legal changes in supervisory requirements for health industry personnel. Information on job analysis, position classification, and supervisory criteria were obtained from the OPM. JCAHO manuals and standards were also reviewed to identify accreditation requirements that might impact on supervisory span of control. Data were obtained from the AHA and subjected to a number of analyses in order to create a comparative basis for assessing industry supervisory ratios. IHS staffing data were collected from the Public Health Service (PHS) Work Force On-Line Data System; the IHS Ambulatory Patient Care Computer Data system; and from other IHS Offices and sources.

The principle source of IHS staffing data was the IHS Workforce Database, extracted from the PHS Work Force On-Line Data System.<sup>1</sup> This system includes data records for all IHS employees. The data fields in each record contain all payroll elements, including:

- Organization
- Position Title
- Occupational Series
- Functional Classification Code
- Supervisory Category
- Type of Service (Paid or non-paid; full-time or part-time)

Interpretation of the coding for each record was based on descriptions of data fields contained in the PHS Work Force On-Line Data System Glossary, dated February 23, 1987; the PHS Standard Administrative Code System Hierarchical Sequence Listing, dated August 9, 1993; and the OPM

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<sup>1</sup> *IHS Office of Administration and Management, Data Run of August 20, 1994.*

Handbook of Occupational Groups and Series, dated 1990. This data was summed by various categories and cross-cuts using dBASE IV and tabulated and charted using Excel 5.0 commercial PC software.

The data summaries obtained by processing the IHS Workforce Database were supplemented and validated using other IHS materials; including, Hospital Data Summaries and Outpatient Tabulations prepared by the IHS Office of Planning, Evaluation, and Legislation (OPEL) from data contained in the Ambulatory Patient Care Computer Data System, and Supervisor to Non-Supervisor ratios contained in draft tables prepared by the IHS Office of Administration and Management (OAM).

Staffing data was also obtained from Area Profiles prepared by IHS Area Offices for OPEL. Area profile staffing data was at times dissimilar to IHS Workforce Database. Some discrepancies between Area Profiles and IHS work force data were traced to the fact that Area Profile data is not standardized. Some Areas report staffing based on positions that were authorized for budget purposes. Moreover, Area Profile data tended to treat vacant positions as if they were filled.

Two reports by the AHA had valuable information used in this study. These reports are: The 1994 AHA Guide and the AHA Profile of United States Hospitals. The 1994 AHA Guide contains specific descriptions of services, size, workload, expenses, and personnel for every hospital in the United States. These data are reported to the AHA through hospital surveys. The AHA Hospital Statistics reports on the average size, workload, and personnel for U.S. hospitals, by State, by statistical metropolitan area (SMSA), by hospital size (number of beds), by type of services, and by Federal/Non-Federal category. Personnel statistics are categorized according to medical, nursing, and other staff. The AHA data do not include information on supervisors.

One of the major difficulties in performing the analysis required, has been the availability of data to support the analysis. Data sources maintain data for their own unique purposes and it is frequently difficult to reformat data in ways that make comparisons valid.<sup>2</sup> For example, personnel data provided by the AHA is primarily "inpatient" staffing data. Making a direct comparison between AHA occupational data for hospitals, to IHS occupational data for hospitals is risky, especially when IHS hospitals have significant "outpatient" and "community outreach" staff components. Comparative analysis requires that the same items or measures be compared in the same way. Numerous reformulations of data were performed in order to develop adequate bases for performing comparative analyses, but the lack of sufficient data from compatible sources made quantitative comparative analyses difficult.

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<sup>2</sup> For example, the AHA does not collect data on supervisory ratios simply because someone else is doing research on this subject. It collects the types of data that are valuable to its membership.

## 2.0 Supervisory Span of Control

Supervisory span of control is management's response to controlling complexity within an organization. In simple organizations composed of two people, it is possible to control and direct technical work processes through informal means of communication such as "mutual adjustment". As organizations grow in size they become more complex.<sup>3</sup> Complexity occurs for a number of reasons. Technical work processes may become more complicated due to selection of enhanced technologies. Technical work processes may become complicated by the addition of newer or different processes. And, the addition of staff deployed along a newer or expanded line of work needs to be coordinated. Complexity requires effective coordination, communication, and control; if task activities are to achieve the particular strategy of the organization. Span of control is a management concept aimed at effectively controlling organizational complexity. Span of control has been viewed as a limit on the number of subordinates that a supervisor can effectively manage within the complexity of a particular working environment.

Working from the bottom up, span of control is imposed upon key task activities which are organized into structural building blocks. These building blocks are aggregated at each level, until they typically form a hierarchical pyramid. The height of the organizational pyramid can become quite steep however, with continuous layering of building block units. As a result, very long lines of communication can be created, from top to bottom, testing the ability of top management to control multiple task activities in relation to the organization's strategic goals. Steep hierarchies with numerous unit levels have communication and control problems where top management may lose touch with its daily operations and customers. Typically, top management will seek to shorten the line of communication vertically by eliminating span of control building block units. The most effective way of doing this is to "standardize" the work of units, reorganizing workers into larger units that have wider spans of control. Technological innovation in the form of new process, procedures, machines, information technology, etc. has been a valuable tool for enabling standardization of worker processes, outputs, and skills. With fewer building block units, spans of control are widened, layers of the pyramid are removed, and lines of management communication are shortened from top to bottom.

Managing work complexity is an organizational process that moves through stages of early mutual adjustment, to span of control, to standardization of work processes, outputs, and skills; and back again to mutual adjustment. When work across an organization is difficult to standardize, because of widespread technical complexity and because large numbers of staff have varying technical specialties, steep hierarchical pyramids are created that cannot be easily flattened. When top management cannot eliminate layering by "standardizing" work, it can often reorganize by employing hybrid organizing principles that produce better top down communication. Hospital corporations are good examples of a hybrid organization. Corporate functions are organized functionally, but direct health care operations are performed on a "team"

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<sup>3</sup> *Designing Effective Organizations, 1993, Henry Mintzberg, p.136. See also, Management, tasks, responsibilities, practices, 1985, Peter Drucker, Chapter 41.*

basis. On the surface, the existence of hospital departments makes the organization appear to be functionally designed, but operationally each service department fields technical specialists to the patient. This is organizational design based upon team principles. Irrespective of the composite character of an organization, the goal is to improve coordination, communication, and control. This means that within hybrid structures, spans of control need to be developed that are as short as possible, but it is important to note that "shortness" is not defined in terms of a particular number of subordinates. In other words, a span of 10:1 can be a short span of control, if it is effective. Appropriateness then, depends upon how work is organized and not upon some magic number, since the effectiveness of any span of control unit, including standardized work process units, will depend once again upon its ability to function by means of "mutual adjustment".<sup>4</sup>

- Span of Control Principle

The limit on the number of persons that a supervisor can effectively control is a function of technical work complexity and technical worker coordination. Complexity is inherent to managing the interrelationships and interactions of technical workers.<sup>5</sup> Early research work on supervisory span of control focused almost exclusively on industrial engineering of positions within mining and manufacturing processes that had been heavily standardized.<sup>6</sup> Henry Fayol, who owned his own coal mine, made engineering studies to determine effective spans of control for mining processes. He believed, based upon his own observations, that supervisors should have fewer than 6 subordinates reporting to them, but for standardized operations, supervisors should have fewer than 20 to 30 workers reporting to them. Fayol's research led to generalizations about span of control.

Fayol's observations were frequently abstracted from their mining and manufacturing context and applied to other processes, without regard to the complexity inherent to other lines of work. Generalizations about span of control began to center on the number of people supervised, instead of on the reasons for work complexity and on methods for controlling such complexity through development of appropriate spans of control. As a consequence, it is still common to see management text books that focus on numbers supervised, with an after thought given to the reason for the span or ratio: "The span of control refers to the number of employees a supervisor can effectively manage."<sup>7</sup>

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<sup>4</sup> *The Structuring of Organizations*, 1979, Henry Mintzberg, p.7.

<sup>5</sup> See e.g., *Management – A Book of Readings*, "Making Theory Operational: The Span of Management," 1980, Harold Koontz, pp. 232-240.

<sup>6</sup> See e.g., *General and industrial Management*, 1951, H. Fayol.

<sup>7</sup> *Supervision*, 1986, Leslie W. Rue and Lloyd L. Byars, p. 35. See also, *Management - A Global Perspective*, 1993, Heinz Wehrich, recounting sources that focus on numbers of subordinates, p. 248.

Peter Drucker, a current authority on modern day management science, offers some valuable insight into the issue of numbers and complexity:

"In the first place, the principle of span of control is rarely cited properly. It is not how many people report to a manager that matters. It is how many people who have to work with each other report to a manager. **What counts are the number of relationships rather than the number of men.**"<sup>8</sup>

The number of relationships can vary from the number of persons in a unit for two important reasons. First, the technical nature of work may be such as to require greater interaction among a set number of persons. Second, the number of relationships among persons **includes** relationships that go up, down, sideways, and out (external). In other words, interrelationships and interactions are not limited to internal interrelationships, but include all organizational (internal and external) relationships. Drucker concluded that "What is needed, therefore, is to replace the concept of span of control with another and more relevant concept: the span of managerial relationships."<sup>9</sup>

One way of viewing supervisory span of control therefore, is to see it as a limit on the mathematical number of interactions that a supervisor can effectively manage for a given type of technical work. For non-mechanized or standardized work, this view concludes that span of control should not exceed 6 or 7 subordinates.<sup>10</sup> Related studies, including research conducted by the American Management Association, have found that in large corporations, the span of control at the upper level of management had a median number of 9 subordinates. In smaller companies the span of control was 8 subordinates. But, below top management, studies have found that middle levels have a shorter span of control.<sup>11</sup> Variation in managerial span of control is due therefore, to the complexity of work and to the complexity of worker reporting relationships. The span of control principle needs to be amended to clarify that numbers of subordinates supervised depends an assessment of complexity. This in turn depends upon

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<sup>8</sup> *Management, tasks, responsibilities, practices*, 1985, Peter Drucker, p. 412. [Emphasis supplied].

<sup>9</sup> *Ibid.*, Drucker, p. 413.

<sup>10</sup> See e.g., *Nursing Economics*, "Span of Control on Nursing Inpatient Units," March-April, 1993, Vol. 11, No. 2, Mary K. Pabst. [Citing Graicunas' use of a mathematical model to demonstrate changes in communications patterns due to complexity..."He showed that as the number of subordinates reporting to a manager increased, the number of interactions would increase in geometric proportions." Graicunas concluded that a span of six or seven employees was all that a manager could effectively handle. p.87.

<sup>11</sup> *Management - A Global Perspective*, 1993, Heinz Wehrich, p. 248. "Indeed, a study of more than 100 companies of all sizes revealed a much narrower span in the middle levels of management than at the top. In addition, the fact that apparently well-managed companies have, among them and certainly within them, widely varying spans indicates that merely counting the numbers in existing spans is not enough to establish what a span ought to be."

evaluating the impact of certain underlying factors. The principle should state "that there is a limit to the number of subordinates a manager can effectively supervise, but the exact number will depend upon the impact of the underlying factors."<sup>12</sup>

- Complexity - Underlying Factors

Factors affecting the span of control are: training; clarity of authority; clarity of plans; use of objective standards; rate of change; communication techniques; amount of personal contact needed; variation by organizational level; and other factors such as competency, complexity of tasks, attitudes, etc.<sup>13</sup> In an organizational unit with a wide span of control, the following underlying factors would have been successfully addressed:

- Thorough training of staff for all positions
- Clear delegations of authority for well-defined tasks
- Plans are well-defined and well-controlled
- Objectives are verifiable
- Changes in working environment are slow
- Communication process, procedure, and structure is effective
- Supervisor interactions are effective in relation to work outputs
- Meetings are effective
- Specialty skills are at higher levels
- Managers are competent and well trained
- Tasks are simple, mechanized, standardized
- Responsibility is willingly taken by subordinates
- Subordinates are mature and experienced

To the extent that factors affecting complexity have not been completely addressed, then a narrower span of control would be necessary to assure that task activity performance conforms to organizational strategy.<sup>14</sup>

What is the risk of manipulating span of control ratios through prescription, when the underlying factors have not been addressed for each organizational unit? Widening a span of control would have the effect of placing the performance of task activities beyond the control of the supervisor. When complexity is not managed, risk attaches itself to the organization's mission because performance is not synchronized with organizational strategy. To rely on a prescribed supervisory ratio whose factual basis is found in studies of different industries, risks under-

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<sup>12</sup> *Ibid.*, Wehrich, p. 248.

<sup>13</sup> *Ibid.*, Wehrich, p. 250.

<sup>14</sup> See *Infra* "OPM Evaluation Criteria for Supervisory Positions." OPM's approach is similar, but not as detailed as that offered by Heinz Wehrich.



controlling or over-controlling different units within a health care delivery system that can result in system dysfunction and failure to comply with statutory mandates.<sup>15</sup>

- Complexity - "Information Highway" Impact

Increasing use of management information systems composed of computerized databases, telecommunications networks, and on-line personal computer connectivity has made the boundaries of organizations more permeable. In a research project conducted by the Massachusetts Institute of Technology (MIT) on the impact of information technology on organizations in the 1990's, it offered the view that organizations are being redefined by their use of such technology.

"Organizations have always managed some form of matrix structure, a matrix involving functions, products, markets, and geography in some combination. With the new Information Technology, unit costs of coordination are declining significantly. This means that over the next decade we can afford more coordination for the same dollar cost. In addition, Information Technology is causing changing economies of scale...enabling a breakup, a disintegration, of traditional organizational forms.<sup>16</sup>

Researchers foresee "networked" organizations where relationship patterns among workers, can be networked up, down, sideways, and out, as they are needed. Interactive Networking promotes complexity as it shrinks time and distance, but also lower costs that permit faster response times. Information technology is increasing technical work complexity and the complexity of interactions. Increasing the metabolic rate of organizational change will not reduce complexity nor will it widen the span of control, except in areas where it has already widened the span of control, such as in those areas where human clerks have been replaced by database entry clerks. Utilization of Information Technology will more than likely increase the demand for highly trained technical personnel at the expert level, working within a dynamic "team" environment of interactive complexity. Organizations may continue to be structured along functional lines, but similar to hospital service departments, they will matrix technical workers on teams, creating "virtual" organizations that are chartered for the task at hand. Team units of higher level technical experts, engaged in interactive complexity will occupy organizational units that are poised above the machine standardized units composed of data entry clerks. Even in hospital and health services environments, human-machine interfacing will only intensify technical and interactive

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<sup>15</sup> *Nursing Management*, "Invest, A Plan for Developing New Managers," December, 1991, Georgia Manning. *Commenting on supervisor control: "Without a competent nurse manager at the helm, the level of care delivered on the unit can deteriorate rapidly. It doesn't take long for a nursing unit's poor operations to color the public's perception of the entire hospital."* p. 26.

<sup>16</sup> *The Corporation of the 1990s - Information Technology and Organizational Transformation, 1991*, Michael Scott Morton., p. 17.

relationships, as computerized patient records systems, diagnosis based systems, and integrated financial management systems are more fully developed.<sup>17</sup>

Managing an organization's span of control in the 1990's cannot be done by recourse to prescribed supervisory ratios based upon archaic generalizations developed from studies conducted on mining, manufacturing, or top management units. The rules on "reengineering" a corporation favor small, highly technical, high information component, networked, fast turnaround time, short span of control units. Reengineering focuses on streamlining key activities and organization strategy. Rapid and effective response to customers is the acid test. Rigidly conforming to design parameters that view work as something that is supposed to move from one functional unit to the next, instead of organizing and networking resources to solve tasks, runs the risk of losing its customers. Adhering to a traditional organizational structure that is functional and that has low spans of control on top and wide spans of control on the bottom, has high costs. While there may be cost savings associated with widening spans of control for units at the bottom, the downside is higher costs because you have too many employees in those units. Higher technical level employees whose work has higher information components would require units with shorter spans of control, but cost savings would result from elimination of excess employees.

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Finally, in the field of health care delivery systems, no research or study could be found that specified spans of control for health care organizations.<sup>18</sup> Manipulation of supervisory ratios for reasons of cost-cutting has been done. However, changing the supervisory ratio without assessing the underlying factors can result in unwanted changes in the skill mix needed to offer a particular "standard of care" modality.<sup>19</sup> An unfortunate result from changing a standard of care's skill mix, could be to offer substandard care.<sup>20</sup>

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<sup>17</sup> See *The Computerized Patient Record*, Institute of Medicine, 1993.

<sup>18</sup> See *Nursing Economics*, *Ibid.*, p. 90. Discusses the absence of any optimal span of control model and the need to define parameters for such a model relevant to the health care system.

<sup>19</sup> See *Nursing Economics*, *Ibid.*, p. 90. "The skill mix [tied to diagnoses and acuities], the experience level of the staff, and the duties of the charge nurse on shifts where the head nurse is not present, may be just a few of the factors contributing to the existing [higher supervisory] ratio. Changing these factors may not be possible to the extent that would be necessary to generate the desired [cost] savings."

<sup>20</sup> This could produce charges of "negligent administration" which is a tort under the Federal Tort Claims Liability Act.

### 3.0 Regulatory Requirements Affecting Span of Control

There are a number of sources of authority that affect whether or not a given position within the Federal service should or should not be classified as "supervisory". These authorities affect the technical complexity of work and the technical complexity of worker interaction. First and foremost is the statutory authority upon which technical work is based. Next, comes the authority that oversees whether or not the performance of such work meets the technical requirements and standards for such work. Third, judicial clarification of regulatory requirements affecting supervisory positions offers valuable insight. Finally, the Federal Office of Personnel Management's guidelines for assessing the supervisory nature of a position are applicable. These sources of regulatory authority are important because they affect the underlying factors of complexity upon which the span of control principle rests. They are also important because Congress has not legislated specific regulatory requirements for "supervisory ratios" within the Federal service.

- **Statutory Mission and Organizational Complexity**

The statutory mandates authorizing Indian Health Service activity create a unique statutory mission that does not exist in any other agency. This mission is at once focused on elevating the health care of American Indians and Alaska Natives to the highest possible level, and it is equally focused on contracting or compacting out this mission to eligible Indian organizations. The primary mission to elevate health care status requires significant technical work complexity, since it encompasses not just medical programs, but also public health, environment, engineering and construction. Providing comprehensive services to hundreds of tribal groups with fewer than 500 members and many with memberships in the tens of thousands, located in most States, requires a high degree of communication and customer interaction that increase complexity. Finally, contracting and compacting increase complexity. Certainly, the Secretary of the Air Force does not have to consult with every county over which his aircraft fly; nor is he required to maintain a high state of military preparedness while simultaneously contracting his readiness out to Santa Clara county, California. Without some explanation of the technical complexity inherent to the IHS statutory mandate, it is difficult to appreciate the complexity inherent in daily task activities.

In 1954, The Indian Health Transfer Act<sup>21</sup> relocated the Indian Health Service from the Bureau of Indian Affairs because of widespread failures by the Indian Bureau to meet the health care needs of Indians. The Transfer Act provided the initial authority for contracting the operation and maintenance of Indian hospitals and health facilities to eligible organizations.<sup>22</sup> Since 1970, the Indian health care policy of the United States has consistently favored Indian self

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<sup>21</sup> *P.L. 83-568, August 5, 1954*

<sup>22</sup> *42 U.S.C. § 2002. See also, Act of August 16, 1957, P.L. 85-151, 42 U.S.C. § 2005 authorizing contracts to State and local governments for Indian health care; and P.L. 86-121 (1959) authorizing matching grants to local governments for sanitation facilities.*

determination in health care,<sup>23</sup> although it continued to authorize **contracts** to health care providers, with Indian consent.<sup>24</sup> The self determination policy in Indian health care was enacted into law in 1975 by passage of the Indian Self Determination and Educational Assistance Act.<sup>25</sup> Within a year another seminal piece of legislation was passed, the Indian Health Care Improvement Act.<sup>26</sup> This Act sought to overcome the appalling deficiencies in the Federal Indian Health care program by providing a comprehensive program for **elevating** Indian health care. Four years later, the 1980 Amendments to the Act were passed authorizing additional appropriations and making substantive changes, providing Buy-Indian Act contracting opportunities, and providing access to Medicare and Medicaid health programs.<sup>27</sup> Congress acted again in 1988 to amend the Indian Self Determination Act to authorize easier contracting of IHS health programs to Indian tribes,<sup>28</sup> and to amend the Indian Sanitation Facilities Act.<sup>29</sup> Congress has also acted to enhance contracting of Indian Health care services through **compacting**, in the Tribal Self Governance Demonstration Project Amendments.<sup>30</sup> Most recently, Congress has sought to simplify contracting and increase contracting opportunities by amending P.L. 93-638.<sup>31</sup>

The statutory mission of the Indian Health Service is to elevate Indian health to the highest possible level and to provide assumption of control by Indian tribes over Indian health care programs. This statutory mission is extraordinary complex because it requires the Indian Health Service to perform at the very highest standards while simultaneously transitioning responsibility to American Indian tribes and Alaska Native organizations. As a result, the responsibility for managing significant complexity arises within the agency. On the one hand, the IHS must provide

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<sup>23</sup> See *Message From the President of the United States Transmitting Recommendations For Indian Policy*, H.R. Doc. No. 363, 91st Cong., 2d Sess. (1970), "...The time has come to break decisively with the past and to create the conditions for a new era in which the Indian future is determined by Indian acts and Indian decisions."

<sup>24</sup> *Health Maintenance Organization Act*, Act of December 29, 1973, P.L. 93-222, 87 Stat. 935, amending Section I of P.L. 83-568, *Indian Health Transfer Act*.

<sup>25</sup> P.L. 93-638, 25 U.S.C. § 450 (1975).

<sup>26</sup> P.L. 94-437, 90 Stat. 1406, 25 U.S.C. § 1601 *et seq.*, 42 U.S.C. § 1395-1396, 2004.

<sup>27</sup> See 25 U.S.C. § 1601 *et seq.* See also Title IV of the *Indian Health Care Improvement Act* "Access to Health Services", authorizing the Indian Health Service to receive Medicare and Medicaid reimbursements for services provided to Indians eligible for Social Security Act programs, when the service was performed in IHS facilities. See Section 1880 "Indian Health Service Facilities" under Title XVIII of the Social Security Act.

<sup>28</sup> See P.L. 100-472, October 5, 1988, 102 Stat. 2285.

<sup>29</sup> See P.L. 86-121, as amended.

<sup>30</sup> See *Tribal Self Governance Demonstration Project Amendments*, Senate Bill 2645, regarding negotiation of Annual Funding Agreements.

<sup>31</sup> P.L. 93-638, as amended, (See P.L. 103-413).

technically adequate services that are designed to elevate health care to the highest level, and on the other hand it must manage an organizational structure that is a by-product of its technical mandate and its mandate to transfer responsibilities to American Indian tribes and Alaska Native organizations.

Operationally speaking, the Indian Health Service administers a comprehensive health care program for American Indians and Alaska Natives. The IHS utilizes a combination of direct service delivery through hospitals, clinics, and health stations, and contract health services through physician and hospital providers. The combination of direct service delivery and contract health services creates a comprehensive health care services program. In addition to care that is provided through IHS and contract health services, care is also provided under contracts with tribal governments. A fiscal intermediary is used to manage claims processing and utilization review. The IHS system is complex and includes support for a wide variety of clinical and public health services, such as: maternal and child health; fetal alcohol syndrome; diabetes; alcoholism; mental health; emergency medical services; community health representatives; environmental health and sanitation; maintenance and repair of facilities; construction of hospitals and clinics; housing; hepatitis B and plague eradication; dental services; and many others. The service population, which frequently resides in remote geographic areas, has much less access to health care than the general population.<sup>32</sup> Not surprisingly, mortality and morbidity rates are higher than national averages.<sup>33</sup> The Indian Health Service provides limited health care services to Indians residing in urban areas.<sup>34</sup>

The statutory mandates that bifurcate the IHS mission have produced an organization that is extraordinarily complex in its technical responsibilities; complex in its multimodal methods for organizationally delivering health care; and complex in terms of its mandate to "consult" externally with the Indian populations. No other agency in the United States Government has such a complex mission. The complexity is evident in IHS hospitals that function as focal points not only for inpatient care, but also for outpatient, community outreach services, mental health, sanitation and environmental engineering, centers for health promotion and disease prevention, emergency medical services, and even construction. Unique organizations with staff deployed among numerous technical specialties, organized in matrix fashion, into teams, often under the sunlight of external review boards, and under the "supervision" of different occupational series supervisors, are organizations that have no counterpart in Government or the private sector.

Generally speaking, wide spans of control are not advisable when higher technical specialties are involved in lower organizational units. In the case of hospitals and health centers

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<sup>32</sup> *"National Health Care Reform and Indian Health Care," Roundtable, Indian Health Service, February 17, 1993; Access needs to include transportation costs in remote areas as a basic benefit, p.14.*

<sup>33</sup> *"Trends in Indian Health" Department of Health and Human Services, 1993*

<sup>34</sup> *P.L. 102-573 Indian Health Amendments, Title V, Section 501 "Health Services For Urban Indians," October 29, 1992.*

with technically complex missions, the most appropriate organizational structure is the "team" not a functional structure.<sup>35</sup> Peter Drucker noted that in hospitals, the "team" structure is most appropriate, with each individual taking responsibility for the success of the whole team's effort.<sup>36</sup> While the IHS Headquarters and its Area Offices may be organized along traditional "functional" lines, most agency staff are located at hospitals and health centers, which are operate according to hospital "team" structure parameters.

The application of a prescribed span of control ratio of 10:1 does not appear to be appropriate for the IHS Headquarters and Area Offices, nor for its 142 hospital and health centers. First, the upper levels of organizations normally have shorter spans of control of 6-8. Second, the lower levels of the IHS organization are not mechanized, or standardized because every patient that arrives is different, with every individual diagnosis requiring different standards of care. Hospitals and health clinics operate according to team design parameters, notwithstanding the hospital's functional organization into service departments. Team designed units typically have shorter spans of control as a result. If most of the IHS were composed of lower organizational units that were not medical or health care in nature, a wider span of control ratio might be appropriate, depending upon the underlying factors cited in §2.0.

- **JCAHO Accreditation Oversight & Statutory Compliance**

The Joint Commission on the Accreditation of Health care Organizations (JCAHO) provides accreditation standards for health care organizations. Health care organizations that seek accreditation from JCAHO must comply with the standards it promulgates. The JCAHO evaluates health care organization performance, on a standard by standard basis. Utilizing a specialized scoring grid, JCAHO evaluates the performance of applicants. An official accreditation decision report is provided to each health care organization that is evaluated. Deficiencies are stated in the form of recommendations for each standard and sub-standard where compliance was below acceptable levels. Certificates awarded to health care organizations are the property of the JCAHO. Once accredited, health care organizations are given a scheduled amount of time in which to cure their deficiencies. Health care organizations are then revisited and reevaluated, to determine compliance with standards.

The JCAHO evaluation process is important to health care organizations because the Certificate of Accreditation is important to qualifying under State law for participation in Title

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<sup>35</sup> *Ibid*, Peter Drucker, p. 564. "The team is also a principle for permanent structural design. The mission of the team is a specific task, but the team itself can be permanent. Its composition may vary from task to task; its base remains, however, fairly constant even though individual members may scatter between tasks or belong, at one and the same time, to a number of teams. The hospital may be the simplest example."

<sup>36</sup> See Labor Relations discussion below on "independent judgment" of Licensed Practical Nurses functioning as a team and their de facto legal status as "supervisors".

XVIII (Medicare) and Title XIX (Medicaid) Social Security Act programs.<sup>37</sup> In addition to State licensing, § 1861(e)(9) requires that hospitals be accredited by the JCAHO.<sup>38</sup> The IHS and Indian tribes may continue to be eligible for Social Security Act reimbursement for services provided to Indian beneficiaries, while their facilities are in a state of noncompliance, provided that they develop plans for compliance with JCAHO standards.

The JCAHO Accreditation Manual is composed of two volumes, Volume I Standards and Volume II Scoring Guidelines.<sup>39</sup> Volume I contains Standards for the following: Patient Rights and Organization Ethics; Assessment of Patients; Care of Patients; Education; Continuum of Care; Improving Organizational Performance; Leadership; Management of the Environment of Care; Management of Human Resources; Management of Information; Surveillance, Prevention and Control of Infection; Governance; Management; Medical Staff; and Nursing. The JCAHO has not written standards for supervisory span of control, but other standards that it sets would make it difficult to avoid span of control issues. For example, Patient Care Standards require that formulation, maintenance, and implementation of patient-specific treatment plans be carried out in accordance with "standards of practice" for such care.<sup>40</sup> Standards of practice and their scope of practice encompass "standards of care" that are statements about skill mix disciplines and intensities for specific procedures.<sup>41</sup> The "covered professionals" to which this standard applies include the complete range of medical and health care providers.

The JCAHO Management of Human Resources Standard requires development of appropriate staffing plans that have staffing ratios appropriate to their case mixes. Human Resources Standard number one, HR.1 requires that master staffing plans be developed for each department that define the qualifications, competencies, and the number of staff members needed. Staffing plans under this Standard also require that "supervision" be addressed.<sup>42</sup> The Nursing Standards require sufficient qualified nursing staff and accountability for assigning responsibility to individuals or to groups of nursing staff members.<sup>43</sup> Even in situations where organizational

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<sup>37</sup> See *IHS Capitation of Medicaid Analysis*, February, 1991, SRM/FAR, pp. 11-15.

<sup>38</sup> *The Secretary DHHS may rely upon certification by other organizations provided that their standards are comparable to the JCAHO.*

<sup>39</sup> *The Joint Commission 1995 Accreditation Manual for Hospitals, Vols. I & II.*

<sup>40</sup> *JCAHO, Vol. II., Care of Patients, p. 63.*

<sup>41</sup> See *JCAHO, Vol. II., Intent of TX.1.3 "The objective of collaborative and interdisciplinary patient care planning and delivery by qualified individuals is to coordinate the support of patient needs and care goals and to assist in achieving optimal outcomes. The mix of disciplines involved and the intensity of the collaboration will vary as appropriate to each patient.*

<sup>42</sup> *JCAHO, Vol. II., Management of Human Resources, HR.1, p. 292.*

<sup>43</sup> *JCAHO, Vol. II. Nursing, NR.1, p. 452.*

structures are very decentralized, the standards require an "identified nurse leader" to provide authority, accountability, and coordination of nurse executive functions.<sup>44</sup>

While the JCAHO Accreditation Manual does not set specific standards for supervisory span of control ratios for medical and health care professional staff, it does set standards that would make it extraordinarily difficult for any facility to impose a span of control ratio that was not appropriate to what the standards of care and practice would require. In order to appreciate this statement, it is only necessary to read a JCAHO decision report to see the thoroughness and level of detail evaluated. Inappropriate span of control ratios for the supervision of staff would not be missed.<sup>45</sup> A finding of noncompliance, coupled with an inability to readjust supervisory ratios, could jeopardize accreditation and the access that it provides to Social Security Act program reimbursement.

- **NLRB v. Health Care & Retirement Corp. 114 S.Ct. 1778, May 23, 1994**

In the National Labor Relations Board (NLRB) case recently decided by the United States Supreme Court, the Court found that four Licensed Practical Nurses were "supervisors" under the definition of "Supervisor"<sup>46</sup> in the National Labor Relations Act. Generally speaking, only supervisors and managerial employees are excepted from coverage by the Act. Employees such as medical doctors, faculty members, pharmacists, librarians, social workers, lawyers, television station directors, architects, and engineers are considered Professional employees.<sup>47</sup> Licensed Practical Nurses (LPNs) had been considered as Technical employees. While the LPNs involved in this case lacked line authority over others, they did possess sufficient authority to direct the work of others, that the Court found them to be "supervisors" within the meaning of the Act. Dissenting Justices pointed out that the Courts decision meant that calling someone a "lead person" makes her a supervisor. "The Court's opinion has implications far beyond the nurses involved in this case. If any person who may use **independent judgment** to assign tasks to others or direct their work is a supervisor, then few professionals employed by organizations subject to the Act will receive its protections."<sup>48</sup>

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<sup>44</sup> *JCAHO, Vol. II. Nursing, NR 1.1, p.454.*

<sup>45</sup> *Contractor I&MT Inc. reviewed a number of JCAHO Office Accreditation Decision Reports on IHS health care facilities. As an example of detail, in relation to Standard NC.3.4.1., the JCAHO found: "It was noted that Registered Nurse Staffing was reviewed for the following weeks: ....., It was noted that the Registered Nurse Staffing on the 3-11 shift for the 2 East Unit was approximately 70% of the staffing required by the Hospital's Plan." Identification Number 000004190, p. 11.*

<sup>46</sup> 29 U.S.C. § 152(11)

<sup>47</sup> 29 U.S.C. § 152(12)

<sup>48</sup> 1994 U.S. LEXIS 3775; p. 14.



While the National Labor Relations Act applies to Industry, the views expressed by the Court could have impact on the Federal labor relations system as well, since the issue of what constitutes a supervisor is essentially the same under public labor law as it is under private labor law. Widening a span of control at lower levels to eliminate "supervisors" and then creating lead persons to fulfill the same supervisory functions needed to deliver a specific standard of care, would have no effect on the Supreme Court's view of who the supervisor really was.

- **OPM Evaluation Criteria for Supervisory Positions**

The Federal Office of Personnel Management provides evaluation criteria for assessing whether or not a position is "supervisory" in nature. Many factors go into the determination of organization structure and staffing. Those organizations which carry out core government functions are structured in accordance with functional areas of responsibility. The structure of organizations responsible for the delivery of health care services are organized in response to patient morbidities and health care service needs.

The Indian Health Service follows the directives of the Office of Personnel Management for the determination of supervisory positions within health care facilities. The New General Schedule Supervisory Guide, issued in January, 1993, clearly states the criteria for supervisory positions. The two key factors for supervisory positions are supervision of others and technical competence related to the work being directed. Positions which have the potential to be classified as supervisory positions are evaluated for six factors:

- Factor 1 - Program scope and effect
- Factor 2 - Organizational setting
- Factor 3 - Supervisory and managerial authority exercised
- Factor 4 - Personal contacts
- Factor 5 - Difficulty of typical work directed
- Factor 6 - Other Conditions

Factor 1, program scope and effect measures the complexity of the activities being directed and the extent to which these activities have external impact. Since IHS facilities serve a client base equivalent to several rural towns, the appropriate rating for the Factor 1 criteria is typically at least Level 3.

Factor 2, the organizational setting measures the level of the position within an organization. Most supervisors in a health care facility report to a Department Director, who reports to the Facility Director. This position in the organization qualifies as rating level 1 for Factor 2.

Factor 3, supervisory and management authority exercised, evaluates the extent to which supervisory and managerial authority has been delegated to this position. Most supervisory

positions in health care facilities involve the scheduling of work, the direct supervision of work and the evaluation of its performance, and non-routine, life-and-death decisions. Consequently, the minimum level for rating Factor 3 is Level 2.

Factor 4, personal contacts measures the organizational relationships with the public. Since everyone in a health care facility is in continuous contact with the general public, supervisory positions qualify for at least Level 2 for this factor.

Factor 5, the difficulty of the typical work directed deals with two issues: the complexity of the work being directed and the portion of time being devoted to supervisory activities. The complexity of work being supervised refers to the grade level of the staff being directed. The medical and nursing staff at IHS health facilities is usually graded at GS-9 and above. The critical time factor is that 25% or more of the supervisor's workload is spent directing the activities of subordinates. The rating level for Factor 5 is likely to be at least Level 8.

Factor 6, other conditions, involves special situations. Review of the criteria indicates that a medical treatment setting probably warrants at least Level 3 for this factor.

The application of criteria from the OPM Supervisory Guide appears to provide sufficient justification for the designation of supervisor to every work team within a clinical setting in both IHS hospitals and health centers.

## 4.0 Analysis of Health Industry Staffing Patterns

An analysis of the comparison on staffing between IHS hospitals and private hospitals provided important insight into the nature of the workload and services being provided. The IHS workload was derived from tabulations prepared by the IHS Patient Care Statistics Branch. Table 1<sup>49</sup> shows the average staff, admissions, and outpatient visits for IHS hospitals, grouped in accordance with size categories (number of beds) used by the AHA. The two workload measures of admissions and outpatient visits are characteristics of inpatient services and outpatient services, respectively. The average admissions per staff and the average outpatient visits per staff grow substantially as the hospital size grows. The larger IHS hospitals service about three times as many patients per staff as the smaller size hospitals.

### 4.1 Analysis of American Hospital Association Data

The average staff, admissions, and outpatient visits for all U.S. hospitals was tabulated from AHA data. This data is reported in Table 2.<sup>50</sup> Similar data was tabulated for U.S. hospitals classified as Community Hospitals (i.e. all non-Federal short-term general and other special hospitals whose services are open to the general public), and reported in Table 3.<sup>51</sup> In both cases, the average admissions per staff and the outpatient visits per staff are reasonably constant, independent of hospital size.

Table 4<sup>52</sup> includes the summary statistics for the three aforementioned data tables, plus the comparable AHA data for Federal hospitals. Several interesting results may be observed in Table 4. The average admissions for non-IHS categories is about 5,000 admissions per year. IHS hospitals average about 1,500 admissions per year. The average staff of IHS hospitals is 234 Full Time Equivalents (FTE), whereas the average staff of all Federal hospitals is 930 FTEs. The average staff of other categories is about 650 FTEs. The average outpatient visits (OPV) at IHS hospitals is about 63,000; at all Federal hospitals the average OPVs is almost 180,000, whereas the average at all U.S. and community hospitals is about 50,000 OPVs. The OPVs per staff at IHS hospitals is about 271, at all Federal hospitals it is about 193, and for all U.S. and all community hospitals the average OPVs per staff is about 75, annually.

The service profile at IHS hospitals is uniquely different from either other Federal hospitals or from private hospitals. The IHS hospitals have far less inpatient workload from any other category. This observation may be explained by the size of IHS hospitals. All but three of

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<sup>49</sup> See Appendix A. for Analysis Data Tables.

<sup>50</sup> See Appendix A. for Analysis Data Tables.

<sup>51</sup> See Appendix A. for Analysis Data Tables.

<sup>52</sup> See Appendix A. for Analysis Data Tables.

the 42 IHS hospitals have less than 100 beds. The roughly 3,000 U.S. hospitals with less than 100 beds is about 45% of the total number of U.S. hospitals. Over one-half of the hospitals in the U.S. are larger than any IHS hospital.

The IHS hospitals handle about 50% of the admissions of other hospitals of comparable size; however, the IHS hospitals handle a workload of OPVs which is enormously higher than any other category of hospital. The Federal hospitals have a very different service profile from the private hospitals. The IHS hospitals are even unique among Federal hospitals since the IHS hospitals average almost 50% more outpatient visits per FTE than the Federal hospital average.

The staff occupations at IHS hospitals appears to be similar to the staff occupations at private hospitals, although the AHA data does not give much detail. Table 5<sup>53</sup> shows the percentages of physicians/dentists, nurses, and others for IHS hospitals compared to all U.S. hospitals. The only difference is that the U.S. hospitals have a lower percentage of doctors and dentists. This is probably due to the fact that the IHS hospitals are so much smaller than the average U.S. hospital in size.

No data were available from the AHA on supervisor ratios, so no comparisons could be made. Moreover, data were unavailable for health centers and medical clinics, so no comparison with IHS health centers could be made.

#### **4.2 Comparison to Veterans Administration Staffing Patterns**

Discussions were held with several officials in the Office of Administration of the Veterans Administration (VA) regarding staffing analysis and supervisor ratios.<sup>54</sup> These officials confirmed that the VA has been doing analysis of staffing and supervisory ratios as part of the mandate from OMB to develop a streamlining plan. The VA operates about 400 facilities. Of these, 172 are Medical Centers. The total VA staff is about 210,000 employees. The supervisory ratio in the 172 hospitals/medical centers is currently about 1:13. These hospitals are considerably larger than IHS hospitals. They offer long-term care as well as short-term care, and they can have as many as 2,000 employees in one facility.

The VA has about 30 small hospitals (of the 172) which may be comparable to IHS size; about 200 special counseling centers (which are "store front" operations), and about 170 outpatient clinics and satellite health centers. These small VA facilities have staffing profiles and supervisory ratios similar to IHS. The VA does not consider the staffing or supervisory ratios to be a significant problem because the small facility imbalances are masked by the weight of the numbers from their large facilities.

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<sup>53</sup> See Appendix A. for Analysis Data Tables.

<sup>54</sup> Contractor I&MT Inc. held telephone discussions with Mr. Brian Thacker and Mr. Ray Wilburn of the VA Office of Administration, January, 1995; discussions notes are reported.

## 5.0 Analysis of Indian Health Service Staffing Patterns

The IHS work force database was studied to determine the staffing characteristics at IHS health service facilities and the IHS supervisor span of control. The data was classified by Headquarters, Area Offices, Hospitals, and Health Centers. The primary focus of this analysis was the IHS health services facilities. Most of the analysis detailed the staffing at IHS hospitals and health centers.

### 5.1 IHS Staffing Analysis - Overview

Staffing analyses were performed from data provided by the PHS Work Force On-Line Data System;<sup>55</sup> Ambulatory Patient Care Computer Data System for FY 1993; and IHS staff analysis draft tables produced from the PHS Work Force On-Line Data System Data Run.<sup>56</sup>

The Indian Health Service carries out its duties and responsibilities with a total paid staff of about 15,800 employees. These employees include full-time permanent, full-time temporary, part-time, and intermittent staff. Health services facilities also have staff of about 600 volunteers. Approximately 80% of IHS staff is directly involved in providing direct health care to Indians at 142 IHS health care facilities.

A summary of IHS facilities and staff is presented in Table 6.<sup>57</sup> Headquarters staff only represent about 5% of the total. Staff in the IHS Area Offices represent another 15% of the staff total. The remaining 80% of IHS staff are employed at IHS hospitals, health centers, health facilities at Indian Schools, health stations, field sites, and other health facilities.

The supervisor ratios were calculated for each facility type. These ratios are presented in Table 7.<sup>58</sup> The IHS overall supervisor ratio is approximately 1:5. The supervisor ratios range from 1:11 for the Perry Point Supply Depot to 1:2 at the other health facilities. Two observations should be made about the data which was used for these calculations. The organization codes for each individual employee in the work force database did not always refer to a unique facility. Consequently, the differentiation of staff for each and every IHS Health Center could not be made. The unresolved and ambiguous organization codes were grouped within the "Other Health Facilities" category. The indicated supervisor ratio for "Other Health Facilities" of 1:2 is not particularly meaningful. Also the "supervisor" designation in the PHS Work Force On-Line System is not clearly defined in available PHS documentation. The codes for "manager",

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<sup>55</sup> *Data Run, August 20, 1994.*

<sup>56</sup> *The workforce database is not 100% accurate in its listing of organizational codes, making staff counts for each facility subject to small errors.*

<sup>57</sup> *See Appendix A. for Analysis Data Tables.*

<sup>58</sup> *See Appendix A. For Analysis Data Tables.*

supervisor”, and “work leader” used within the supervisor classification. It appears that the coding, definitions, and usage of supervisor classification is not standardized throughout the agency.

A summary of the number of IHS facilities by Area is presented in Table 8.<sup>59</sup> IHS staff at 42 IHS hospitals is about 10,396, with an average staff size of about 250 FTEs. IHS staff at 65 IHS health centers is 1,825, with an average of about 30 FTEs per health center. The remaining health services staff of 1,064 is distributed among 35 Service Units, health stations, field sites, and other health facilities. As noted earlier, the coding of IHS workforce data does not provide sufficient detail to differentiate staff by facility for these sites.

IHS staff for each Area is set forth in Table 9.<sup>60</sup> The size of the IHS Areas is very different, both geographically and demographically. As a result, the number and size of health care facilities operated by IHS are different in each Area.

## **5.2 Staffing at Non-Health Care Facilities**

The Indian Health Service is organized with a Headquarters staff and twelve (12) Area Offices. While only 5% of IHS staff is assigned to the Headquarters organization, the organization itself exists in twelve distinct locations where it performs executive direction of activities. Headquarters' activities do not involve direct health care operations since it is not a health care facility. The IHS Headquarters organization includes three locations for the Office of Engineering Services designated as the Regional Office with a staff of 68 employees.

The IHS Area Offices perform a variety of functions, among which are the management and direction of IHS health care facility operations; core public health functions; facility engineering, and environment. Each Area Office is responsible for a specific geographic area of the country. Area Offices have subdivided their regional coverage into geographical units of service, denominated as Service Units (SUDs). Each Service Unit is directly responsible for the facilities within its geographic area and is accountable for all services provided to Indian beneficiaries residing within that unit.

IHS Area Offices have very little direct responsibility for the direct medical operation of health care facilities, although several Area Offices have centralized some direct services, such as laboratory services, to minimize operating costs. The staffing level for direct health care services by Area Offices is minimal. The overall staffing level for IHS Area Offices is 2,401 employees, which is approximately 15% of the IHS staff total.

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<sup>59</sup> See Appendix A. for Analysis Data Tables.

<sup>60</sup> See Appendix A. for Analysis Data Tables.

### 5.3 Staffing at Health Care Facilities

There are 142 IHS health care facilities. The Indian Health Service operates 42 hospitals and 65 health centers, and 35 other health facilities including field offices and health centers within Indian schools. Two of the IHS hospitals are accredited Medical Centers (Phoenix and Anchorage). IHS hospitals provide inpatient and outpatient care, and community outreach services. IHS health centers provide emergency medical services, outpatient services, and a variety of community outreach services.

The IHS Service Units reported 60,575 admissions, 2,699,657 Primary Care Provider Visits (PCPVs), and 4,079,655 total Outpatient Visits for FY 1993.<sup>61</sup> These services were primarily provided by IHS hospitals and health centers, although data from tribal health centers operating within IHS SUDs are included. Table 10<sup>62</sup> shows a summary of IHS workload. Tables 11, 12, and 13<sup>63</sup> show the distribution of workload among IHS Areas.

IHS Health Centers provide outpatient services to communities that lack ready access to a hospital. The 65 IHS health centers employ a staff of 1,825 (1,762 are IHS employees, and 63 are volunteers). The IHS Health Centers provided 1,270,826 OPVs, which is 31% of the total IHS OPV services; and 708,172 PCPVs, which is 26% of the total IHS PCPV services.

Most of the IHS staff is employed at IHS hospitals where they provide direct health care services. These hospitals provide inpatient and outpatient care services, and a variety of community outreach services. IHS hospitals reported 60,575 patient admissions (100%); 2,668,277 Outpatient Visits (65% of the IHS total); and, 1,883,600 Primary Care Patient Visits (PCPVs) (70% of the IHS total).<sup>64</sup> IHS staff at hospitals includes administrative, clinical, facilities management, records management, community outreach, and facilities engineering, maintenance and services personnel.

The primary purpose of this Report is to explore issues related to staff size and span of control. The IHS Workforce Database provides data for each IHS employee which includes employee title, occupational series, organization code, functional code, supervisory code, and other payroll profile data. The analysis focussed on occupational series, functional code, and supervisory code. The detailed findings are discussed below.

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<sup>61</sup> *IHS analysis of data tabulated from the IHS Ambulatory Patient Care Computer Data System.*

<sup>62</sup> *See Appendix A. for Analysis Data Tables.*

<sup>63</sup> *See Appendix A. for Analysis Data Tables.*

<sup>64</sup> *Data reported is for Fiscal Year 1993.*

## 5.4 Staffing Analysis for IHS Hospitals

The staffing at IHS hospitals accounts for 63% of the total paid staff.<sup>65</sup> In many locations, the IHS hospital is the focal point for all Indian health services, not just the traditional inpatient or outpatient services. Hospitals frequently provide preventive and community outreach services as well. From available data sources, it is difficult to ascertain the which hospital staff are dedicated to traditional medical care services and which are dedicated to ancillary or community outreach services. While it is likely that staff in fact dedicate their time to both types of services, data are unavailable to determine the precise allocation of staff time to the mix of staff duties.

Analysis of IHS hospital staff according to their occupational series shows that approximately 71% are in the medically related occupational series.<sup>66</sup> Within the medically related series, approximately 10% of staff is composed of physicians or physician's assistants while 44% of this staff series is composed of nurses, and 8% of staff are dental related. Table 14<sup>67</sup> shows the breakdown of IHS hospital staff by occupational series.

The IHS workforce database also includes a code for "functional class". This code refers to the nature of the work being performed. One of the functional class codes is "clinical practice, counseling and ancillary medical services". Table 14 provides staffing data for personnel assigned to the "clinical" functional class by occupational series at IHS hospitals. Approximately 40% of the staff at IHS hospitals is classified as performing clinical functions. Out of a total hospital staff of 9,852, only 3,901 are classified as "clinical". Nearly 95% of the clinical employees are in the medical occupational series.

The methodological basis for classifying staff as "clinical" is not always obvious. For example, physicians (GS-0602 and GS-0603 series) and nurses (GS-0610 series) are classified as clinical, but practical (vocational) nurses and nursing assistants (GS-0621) are classified as "non-clinical" functions. Similarly, medical technologists (GS-0644) are classified as "clinical", but medical technicians (GS-0645) and diagnostic radiological technicians (GS-0647) are classified as "non-clinical".

In order to examine the IHS workforce data on a facility by facility basis, a hospital staff analysis tabulation was prepared. Table 15<sup>68</sup> shows the total FTEs at each IHS hospital, the number of supervisors and non-supervisors, and the tabulation of staff by generalized occupational categories. The data in this table cannot be considered as totally reliable, since the database key was organization code. In some cases, there was no way to differentiate staff for a

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<sup>65</sup> *When volunteer staff is added, IHS hospital staffing rises to approximately 66% of all personnel.*

<sup>66</sup> *This is the 600 series classification.*

<sup>67</sup> *See Appendix A. for Analysis Data Tables.*

<sup>68</sup> *See Appendix A. for Analysis Data Tables.*



health center located in the same Service Unit. In other cases, it was not clear whether the "hospital" staff was assigned to the hospital or to the Service Unit. Furthermore, it is known that some hospital staff are assigned to services satellite facilities, Indian School Health Centers, other Indian Clinics, and community service (at least on a part time basis).<sup>69</sup>

A facility profile sheet has been prepared for each IHS hospital to summarize the workforce staffing data.<sup>70</sup> The profile sheets show that staff size typically grows in proportion to the number of beds and the number of admissions. The "clinical" to: "non-clinical" staff ratios however, do not appear to correlate with changes in workload.

The IHS workforce database was examined for supervisory codes. There are three categories which can be differentiated: "supervisor", "manager", and "work leader". Detailed definitions for these categories were not made available. It is assumed that managers have defined organizational management responsibilities; that supervisors plan, organize, and direct the work of subordinates, and that work leaders monitor and lead group activities, whether the group is composed of same series peers or a mix of staff series. Table 16. provides data on the number of staff within each supervisory category according to their occupational series.

The average span of control at IHS hospitals was calculated as 7.03. Table 16 shows the span of control for each occupational series and the percentage of supervisory staff in each of the three supervisory categories. Over 90% of the supervisory staff is classified as "supervisor". About 5% of the supervisory staff is classified as "manager". Table 16 also shows the span of control within each occupational series. The supervisory span of control within an occupational series only applies if a supervisor in one occupational series can not and does not supervise personnel in other occupational series. Although there is no data on the organization structure within each individual hospital, it seems reasonable to assume that doctors may be supervising nurses, registered nurses may be supervising practical nurses, and staff administrators may be supervising custodial staff. Consequently, the span of control calculations within occupational series have little value, if any.

For examination of supervisor ratios on a facility by facility basis, the IHS workforce data was tabulated by organization code. A supervisor ratio analysis was conducted. Table 17<sup>71</sup> shows the total FTEs at each IHS hospital, the number of non-supervisors and supervisors, and their ratio; the number of clinical FTEs at each IHS hospital, the number of clinical non-supervisors and clinical supervisors, and their ratio; and, the number of non-clinical FTEs at each IHS hospital, the number of non-clinical non-supervisors and non-clinical supervisors, and their ratio. The data in this table shows the overall supervisor ratio to be 5-7; the clinical supervisory

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<sup>69</sup> *IHS Area Profiles reference ancillary services provided by IHS hospital staff at other facilities.*

<sup>70</sup> *See Appendix B. for Hospital Profile Sheets.*

<sup>71</sup> *See Appendix A. for Analysis Data Tables.*

ratio to be about 3-4; and the non-clinical supervisory ratio to be 8-12. However, one must immediately point out that the supervisory ratios have little or no meaning without supporting data which confirms an organizational structure of who is supervising whom.

Although many aspects were examined and many data cross-cuts were calculated, data do not exist to support analysis of supervisory administrative series (300) relationships of supervisors to non-300 series employees, nor to support analysis of one supervisory series to multiple series of subordinate personnel when such mixes exist. As a result, the supervisory staff and staff numbers for IHS hospitals, summarized in Table 18,<sup>72</sup> are based upon a same-series tabulation. The tabulated subtotals were used to compute the span of control ratios on a same-series basis in Table 19<sup>73</sup> because data on mixed series supervision does not exist.

The agency-wide ratio of all supervisors to all employees is approximately 6.5, with 1,947 employees classified as supervisory out of 12,609. The hospital staff ratio of all hospital supervisors to all hospital staff is about 7.0. Examining the ratio of all "clinical" supervisors to all "clinical" staff, and all "non-clinical" supervisors to all "non-clinical" staff, the hospital ratios are, respectively, 4.6 and 10.7.

A cursory assessment of this data might suggest that clinical staff have many more supervisors than do non-clinical staff, possibly due to the nature of the work and greater levels of responsibility. Intrinsic to such a conclusion is belief that clinical staff only supervise other clinical staff, and that non-clinical staff only supervise non-clinical staff. This does not appear to be the case however, since both physician's assistants and practical nurses are classified as non-clinical and are almost certainly being supervised by "clinical" physicians and registered nurses, who are classified as clinical staff.

One explanation of the disproportionately large number of supervisors in the physician, nurse, and pharmacist occupational series is that the nature of the work justifies a "supervisor" designation even though the responsibilities for directing other staff are minimal. The IHS has a difficult time filling vacant positions for physicians, nurses, and pharmacists, so the supervisory classification allows a higher pay rate for these employees. Thus, the low span of control in hospitals may be due in part to issues which are not organizational.

The true staff size at IHS hospitals is not truly reflected in the IHS employee data. The statistics derived for this report include only IHS paid employees. Hospitals may also have volunteers, tribal employees, and contract employees as part of the staff. Thus, the span of control statistics are probably understated.

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<sup>72</sup> See Appendix A. for Analysis Data Tables.

<sup>73</sup> See Appendix A. for Analysis Data Tables.

Discrepancies in data existed among the three sources of IHS hospital staffing data used in this study. Data were analyzed from the IHS workforce database, IHS Area Profiles (prepared by the IHS Area Offices for the IHS Office of Planning, Evaluation, and Legislation (OPEL), and from the American Hospital Association Guide, containing data on IHS facilities. For common data elements, data reported by these sources typically varied by less than 15%; but in several cases, reported staff data were as great as 40%. The discrepancies may be explained by a number of reasons. The IHS workforce data only contains IHS employees. The organization code may be outdated or the code may be inaccurate. The Area Profile data may (1) include unfilled vacancies, or (2) be reporting authorized positions from budget data as opposed to actual staffing for a facility. The AHA Guide reports survey data which may be inaccurate or mis-coded.

### **5.5 Staffing Analysis for IHS Health Centers**

Staffing at IHS health centers accounts for 11% of the total staff. In many locations, the IHS health center is the only source of Indian health services. The health centers provide outpatient services, plus preventive and community outreach services. It is difficult to ascertain what portion of a health center's staff is devoted to preventive and community services, and even more difficult to determine whether some of the staff split their time among different duties.

An analysis of IHS health center staff according to their occupational series shows that about 69% of the staff have medical related occupations ( 600 series). This is very close to the medically related occupations in IHS hospitals. About 11% of the medical occupation staff is made up of physicians or physician's assistants, while another 24% of such staff is made up of nurses, and 16% of the staff is made up of dental related personnel. Table 20<sup>74</sup> shows the breakdown of IHS health center staff by occupational series. This Table also shows the staffing assigned to the "clinical" functional class by occupational series at IHS health centers. About 36% of the staff at IHS health centers is classified as performing "clinical" functions. Out of a total health center staff of 1,762 , only 636 are classified as "clinical". Approximately 93% of the clinical employees are in the medical occupational series.

The IHS workforce database was examined for supervisory codes. There are three categories that can be differentiated: "supervisor", "manager", and "work leader". Detailed definitions of these categories were not made available. It is assumed that managers have defined organizational management responsibilities; that supervisors plan, organize, and direct the work of subordinates, and that work leaders monitor and lead group activities, whether the group is composed of same series peers or a mix of staff series. Table 20 provides data on the number of staff within each supervisory category according to their occupational series.

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<sup>74</sup> See Appendix A. for Analysis Data Tables.

In order to examine the IHS workforce data on a facility by facility basis, a health center staff analysis tabulation was prepared. Table 21<sup>75</sup> shows the total FTEs at 37 of the 65 IHS health centers. The data for the remaining 28 health centers could not be determined from the IHS work force data. Either no organization code was found in the IHS hierarchical listing of organizations or the organization code used did not correspond. The accuracy of this data is somewhat suspect, as discussed in section 5.6 .

A facility profile sheet has been prepared for each IHS health center to summarize workforce staffing data.<sup>76</sup> The profile sheets show that the staff size typically grows in proportion to the number of beds and the number of admissions. The mix between "clinical" and "non-clinical" staff and the mix occupational series do not appear to exhibit a discernable pattern, in relation to changes in hospital staff size or admissions.

The average span of control at IHS health centers was calculated as 5.93. Table 22<sup>77</sup> shows the span of control for each occupational series and the percentage of supervisory staff in each of the three supervisory categories. About 93% of the supervisory staff is classified as "supervisor", while about 6% of the supervisory staff is classified as "manager". Table 22 also shows the span of control within each occupational series. The supervisory span of control within an occupational series only applies if a supervisor in one occupational series can not and does not supervise personnel in other occupational series. Although there is no data on the organization structure within each individual health center, it seems reasonable to assume that doctors may be supervising nurses, registered nurses may be supervising practical nurses, and staff administrators may be supervising custodial staff. Consequently, the span of control calculations within occupational series have little value, if any.

For examination of supervisor ratios on a facility by facility basis, the IHS workforce data a health center supervisor ratio analysis tabulation was prepared. Table 23<sup>78</sup> shows the total FTEs at each IHS health center, the number of non-supervisors and supervisors, and their ratio; the number of clinical FTEs at each IHS health center, the number of clinical non-supervisors and clinical supervisors, and their ratio; and, the number of non-clinical FTEs at each IHS health center, the number of non-clinical non-supervisors and non-clinical supervisors, and their ratio . The data in this table shows the overall supervisor ratio to be 5-7; the clinical supervisory ratio to be about 3-4; and the non-clinical supervisory ratio to be 8-12. These supervisory ratios are similar to the ratios for hospitals.

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<sup>75</sup> See Appendix A. for Analysis Data Tables.

<sup>76</sup> See Appendix C. for Health Center Profile Sheets.

<sup>77</sup> See Appendix A. for Analysis Data Tables.

<sup>78</sup> See Appendix A. for Analysis Data Tables.

Although many aspects were examined and many data cross-cuts were calculated, data do not exist to support analysis of supervisory administrative series (300) relationships of supervisors to non-300 series employees, nor to support analysis of one supervisory series to multiple series of subordinate personnel when such mixes exist. As a result, the supervisory staff and staff numbers for IHS health centers, summarized in Table 24,<sup>79</sup> are based upon a same-series tabulation. The tabulated subtotals were used to compute the span of control ratios on a same-series basis in Table 25<sup>80</sup> because data on mixed series supervision does not exist.

The agency-wide ratio for all supervisors to all employees is approximately 6.5, with 1,947 employees classified as supervisory out of 12,609. The health center staff ratio of all health center supervisors to all health center staff is about 5.9. Examining the ratio of all "clinical" supervisors to all "clinical" staff, and all "non-clinical" supervisors to all "non-clinical" staff, the health center ratios are, respectively, 3.6 and 9.2.

The results of analyzing the staffing data at IHS health centers are similar to the results of analyzing IHS health centers. The use of "supervisor" classification to increase pay rates to attract and retain physicians, nurses, and pharmacists is probably consistent; since the Area Office personnel departments are in charge of hiring for both hospitals and health centers. Data anomalies are probably the same for hospitals data and health center data.

The true staff size at IHS health centers may not be totally reflected in the IHS employee data. The statistics derived for this report include only IHS paid employees. Health centers, as well as hospitals, may also have tribal employees, and contract employees as part of the staff. Thus, the span of control statistics are probably understated.

The only other source of data about staffing at IHS health centers is the Area Profiles. The profiles usually do not provide a definite count of staff at health centers. Consequently, the IHS workforce database can only be taken at face value without validation by other sources.

## **5.6 Supervisory Staff Positions**

The services being offered at IHS health care facilities vary dramatically from location to location. Hospitals have as few as seven or eight beds to as many as 142 beds. Small hospitals provide only ambulatory and minimal in-patient care. Many hospitals provide surgical services, intensive care, and a full range of obstetric and gynecological services. There does not appear to be any prescribed staffing size or organization based on the level of service (although the IHS Resource Allocation Methodology is formulated on the basis of services supplied).

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<sup>79</sup> See Appendix A. for Analysis Data Tables.

<sup>80</sup> See Appendix A. for Analysis Data Tables.

Hospitals frequently have lower spans of control (ratio of supervisors to staff), than government bureaucratic organizations. Every hospital should have a Hospital Director, a Director of Medicine, a Director of Nursing, an Administrator, and a Facility Manager. Each hospital department is likely to have a Department Medical Director and a Department Nursing Director. Every in-patient department is also likely to have a Nursing Shift Supervisor, since these departments are usually staffed 24 hours a day. Thus, a hospital operating with a staff of 50 FTEs is virtually required to have at least 7 supervisors.

IHS Health Centers also have lower spans of control based on the critical nature of the work, the need for intense supervision within clinical settings, and the diversity of support functions needed for effective operations. The staffing statistics for two health centers demonstrate typical organization profiles. The Indian Health Center in Box Elder, Montana has a total staff of 45 FTEs, with 6 supervisors. The average span of control is 7.5 (45/6). The six supervisors reported in the IHS work force database are: an administrative officer, a supervisor - clinical nursing, a chief optometrist, a health system administrator, a supervisor - medical records, and a maintenance foreman.

The staff profile for the Indian Health Center at Tahola, Washington is similar. This health center has a total staff of 25 FTEs, of which 5 are supervisors. The span of control is 5.0 for this case. The five supervisors are: Contract Health Services Administrator, Clinical Nurse - Supervisor, Clinic Director, Health Systems Administrator, and Chief, Basic Dental Services.

For both of these health centers, there are several medical officers on staff; however, they do not have supervisory designations. Box Elder has a staff of five (5) dental positions with no supervisory position; whereas Tahola has three (3) dental positions, one of which is supervisory. Both locations have maintenance and custodial staff, but only one location has a designated supervisory position. While staffing profiles do not clarify what organizational responsibilities exist supervisors, nor what the occupational series are for their subordinate staff, the need for such supervisors is apparent.

The accuracy of the workforce database is questionable. In order to validate the reported data, a limited number of telephone interviews were conducted with selected health centers. The results, listed below, confirmed the doubts about the work force database.

Santa Rosa PHS IHC, Contact: Francis Lopez

IHS Database: total staff = 2

Telephone interview: total staff = 6 with 1 supervisor

Additionally, 3 part-time tribal staff + 3 part-time Dental Staff from Sells Hospital

Tsaile PHS IHC, Contact: Beulah Bia

IHS Database: Not listed (or Org. Code not known)

Telephone interview: total staff = 40-45 with 10 supervisors

Box Elder PHS IHC; Rocky Boy SUD, Contact: Edna Myers

IHS Database: total staff = 45 with 6 supervisors

Telephone interview: total staff = about 40 with 12 supervisors, as follows:

clinical director	chief medical officer
tribal health director	quality assurance director
chief financial officer	inventory/supply director
chief dentist	chief optometrist
chief medical records	supv maintenance/housekeeping
director lab/x-ray	supv. EMS

Note: These may not be exact titles & they may all not be official  
Supervisory positions, but organizationally they appear to be.

Tahola PHS IHC

IHS Database: total staff = 25 with 5 supervisors

Telephone interview: Tahola Health Center is now Tribally operated - NO IHS employees

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## 6.0 Findings and Recommendations

- Corporate responsibilities are organized functionally, but direct health care operations are performed on a "team" basis. On the surface, the existence of hospital departments makes the organization appear to be functionally designed, but operationally each service department fields technical specialists to the patient. This is organizational design based upon team principles.
- In the field of health care delivery, the literature does not specify recommended span of control. The span of control principles imply that technology improvements support a higher span of control, but the associated increasing complexities indicate the need for short span of control units. Organization size might be reduced, but not span of control. In fact, changing span of control of a healthcare organization might very well result in unwanted changes in the skill mix, leading to substandard care.
- The statutory mandates do not speak to span of control. Rather, they support a mission which is critical and complex. Consequently, the arbitrary application of a prescribed span of control ratio of 10:1 does not appear to be appropriate for the IHS Headquarters and Area Offices, nor for its 142 hospital and health centers.
- No data was found on supervisory ratios for the private sector. However, industry analysis does not suggest any use of arbitrary supervisory ratios.
- The IHS staffing patterns at hospitals and health centers are consistent with the unique IHS mission.
- The data used in this study was difficult to aggregate, required considerable clean-up, and is of suspect accuracy. There is inconsistency between coding and definitions, even among IHS organizations collecting and reporting the same data.
- In order to get a realistic view of the supervisory ratios for IHS hospitals and health centers, we suggest conducting a management review/case study. Case studies of the total staffing profile (including non-IHS employees), the organizational structure, "team" responsibilities, and span of control at three IHS hospitals seems to be a useful starting point.

- A round-table conference on organization issues for health care delivery facilities may prove beneficial to the IHS argument. The conference could include representatives of the Department of Health and Human Services, tribal health representatives, the Veterans Administration, the Department of Defense, the American Hospital Association, the American Medical Association, the American Nursing Association, private (GHO/HMO) providers, State and local government, and financial analysts from major accounting firms.
- Furthermore, this study suggests the need for an IHS health facility profile database. The IHS plan for the “IRM System of the Future” is some time away. We recommend the immediate design and implementation of a facility profile database with information on locations, organizations, FTEs, budget, program descriptions, workload measures, contracting/compacting data, CHS/fiscal intermediary data, etc. to support IHS Headquarters management and analysis needs.

**APPENDIX A**

**ANALYSIS DATA TABLES**

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**TABLE 1. IHS HOSPITALS - STAFF WORKLOAD BY SIZE**

Number of Beds	Number of Hospitals	Average Admissions	Average Staff	Admissions Per Staff	Average OPVs	OPVs Per Staff
All	42	1,442.26	234.57	6.15	63,529.21	270.83
6-15	8	299.63	88.63	3.38	36,442.63	411.20
16-24	7	498.00	92.71	5.37	29,752.86	320.91
25-34	9	808.44	168.67	4.79	47,531.22	281.81
35-49	9	1,444.44	242.56	5.96	61,945.22	255.39
50-99	6	3,120.67	415.83	7.50	117,534.17	282.65
100-150	3	5,230.67	766.00	6.83	159,307.67	207.97

Data Source: Data tabulations prepared by IHS Headquarters Patient Care Statistics Branch

**TABLE 2. ALL U.S. HOSPITALS - STAFF WORKLOAD BY SIZE**

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Number of Beds	Number of Hospitals	Average Admissions	Average Staff	Admissions Per Staff	Average OPVs	OPVs Per Staff
Average = 180.1	6539	5,128.63	647.74	7.92	49,251.57	76.04
6-24	294	432.09	65.95	6.55	5,119.95	77.64
25-49	1078	924.59	116.32	7.95	8,598.76	73.92
50-99	1595	1,697.80	205.68	8.25	13,982.43	67.98
100-199	1572	4,035.52	460.41	8.77	31,759.86	68.98

Data Source: AHA Hospital Statistics, 93/4, American Hospital Association

**TABLE 3. COMMUNITY HOSPITALS - STAFF WORKLOAD BY SIZE**

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<b>Number of Beds</b>	<b>Number of Hospitals</b>	<b>Average Admissions</b>	<b>Average Staff</b>	<b>Admissions Per Staff</b>	<b>Average OPVs</b>	<b>OPVs Per Staff</b>
Average = 174.03	5292	5,864.24	684.02	8.57	48,706.17	71.21
6-24	230	399.31	54.56	7.32	6,544.63	119.96
25-49	900	941.08	108.90	8.64	10,299.41	94.57
50-99	1210	1,929.32	214.23	9.01	18,431.38	86.03
100-199	1321	4,424.34	476.94	9.28	37,794.48	79.24

Data Source: AHA Hospital Statistics, 93/4, American Hospital Association

**TABLE 4. COMPARATIVE HOSPITAL STAFF WORKLOAD BY SIZE**

Type of Hospital	Average Number of Beds	Number of Hospitals	Average Admissions	Average Staff	Admissions Per Staff	Average OPVs	OPVs Per Staff
IHS	38.52	42	1,442.26	234.57	6.15	63,530.40	270.84
Federal	259	308	5,264.52	930.00	5.66	179,276.09	192.77
All U.S.	180.1	6539	5,128.63	647.74	7.92	49,251.57	76.04
Community	174.03	5292	5,864.24	684.02	8.57	48,706.17	71.21

Data Sources Data tabulations prepared by IHS Headquarters Patient Care Statistics Branch  
 AHA Hospital Statistics, 9/3/4. American Hospital Association



**TABLE 5. COMPARATIVE STAFF OCCUPATIONAL PROFILES**

	<b>Physicians &amp; Dentists</b>	<b>Registered Nurses</b>	<b>Practical Nurses</b>	<b>Other</b>
<b>IHS</b>	8.4%	23.1%	3.7%	64.8%
<b>All U.S.</b>	1.5%	22.0%	4.5%	72.0%

Data Sources: IHS data files extracted from the PHS Work Force On-Line Data System  
 AHA Hospital Statistics, 93/4, American Hospital Association

**TABLE 6. SUMMARY OF IHS FACILITIES AND STAFF**

	Number of Locations	Total Staff	(%)	Paid Staff	Volunteers
<b>TOTAL IHS</b>	240	16411	100%	15803	608
HEADQUARTERS - EAST (AP94)	1	438	3%	438	0
HEADQUARTERS - WEST	1	179	1%	179	0
HEADQUARTERS - TUCSON	1	123	1%	36	0
HEADQUARTERS - SUPPLY DEPOT	1	48	0%	48	0
HEADQUARTERS - ABD,NAV,OKL,PHX,OTH	5	24	0%	24	0
REGIONAL OFFICES - OES	3	68	0%	68	0
AREA OFFICES	12	2401	15%	2401	0
SERVICE UNITS	74	n/a	n/a	n/a	n/a
HOSPITALS	42	10397	63%	9852	545
HEALTH CENTERS	65	1825	11%	1762	63
OTHER HEALTH FACILITIES	35	995	6%	995	0

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Data Sources: Staff tabulations prepared from PHS Work Force On-Line Data System, as of 8/20/94  
 Facility counts from data tabulations prepared by PHS Headquarters Patient Care Statistics Branch

**TABLE 7. SUMMARY OF IHS SUPERVISOR RATIOS BY FACILITY TYPE**

	<b>Staff (Paid)</b>	<b>Supervisor Ratio</b>	<b>Supervisors</b>	<b>Non- Supervisors</b>
<b>TOTAL IHS</b>	15803	4.8	2716	13087
HEADQUARTERS - EAST (AP94)	438	3.3	103	335
HEADQUARTERS - WEST	179	4.6	32	147
HEADQUARTERS - TUCSON	36	4.1	7	29
HEADQUARTERS - SUPPLY DEPOT	48	11.0	4	44
HEADQUARTERS - ABD,NAV,OKL,PHX,OTH	24	3.8	5	19
REGIONAL OFFICES - OES	68	8.7	7	61
AREA OFFICES	2401	3.5	532	1869
SERVICE UNITS	n/a	n/a	n/a	n/a
HOSPITALS	9852	6.0	1402	8450
HEALTH CENTERS	1762	4.9	297	1465
OTHER HEALTH FACILITIES	995	2.0	327	668

Data Source: Data tabulations prepared from PHS Work Force On-Line Data System, as of 8/20/94

**TABLE 8. SUMMARY OF IHS FACILITIES BY AREA**

	# of Service Units	# of Hospitals	# of Health Centers	# of School Health Centers	# of Field Stations & Other
<b>TOTALS</b>	74	42	65	4	31
Aberdeen	13	9	7	1	4
Alaska	3	2	1	0	0
Albuquerque	6	5	8	1	3
Bemidji	3	2	2	0	2
Billings	8	3	8	0	5
California	0	0	0	0	0
Nashville	1	1	0	1	1
Navajo	8	6	8	0	7
Oklahoma	10	5	12	0	0
Phoenix	10	8	6	1	6
Portland	11	0	11	0	2
Tucson	1	1	2	0	1

Data Source Facility counts from data tabulations prepared by IHS Headquarters Patient Care Statistics Branch

**TABLE 9. SUMMARY OF IHS STAFF BY AREA**

	<b>TOTAL STAFF by AREA</b>	<b>Staff at Area Offices</b>	<b>Staff at Service Units &amp; Other</b>	<b>Staff at Hospitals</b>	<b>Staff at Health Centers</b>
<b>TOTALS</b>	15010	2401	995	9852	1762
<b>Aberdeen</b>	1764	225	57	1283	199
<b>Alaska</b>	1467	384	265	818	n/a
<b>Albuquerque</b>	1283	212	7	962	102
<b>Bemidji</b>	415	145	20	201	49
<b>Billings</b>	910	117	21	462	310
<b>California</b>	120	120	0	0	0
<b>Nashville</b>	337	170	13	154	0
<b>Navajo</b>	3256	210	36	2721	289
<b>Oklahoma</b>	2106	319	232	1346	209
<b>Phoenix</b>	2248	194	233	1702	119
<b>Portland</b>	773	218	104	0	451
<b>Tucson</b>	331	87	7	203	34

Data Source: Staff counts from data tabulations prepared by IHS Headquarters Patient Care Statistics Branch

**TABLE 10. SUMMARY OF IHS WORKLOAD**

	ADMISSIONS	(%)	OPVs	(%)	PCPVs	(%)
<b>TOTALS</b>	60,575	100%	4,079,655	100%	2,699,657	100%
HOSPITALS	60,575	100%	2,668,277	65%	1,883,600	70%
HEALTH CENTERS	---		1,270,826	31%	708,172	26%
OTHER HEALTH FACILITIES	---		140,552	3%	107,885	4%

Data Source: Data tabulations prepared by IHS Headquarters Patient Care Statistics Branch

**TABLE 11. SUMMARY OF IHS ADMISSIONS BY AREA**

	<b>ADMISSIONS</b>	<b>(%)</b>
<b>TOTALS</b>	60,575	100%
<b>Aberdeen</b>	6,984	12%
<b>Alaska</b>	5,559	9%
<b>Albuquerque</b>	4,525	7%
<b>Bemidji</b>	1,140	2%
<b>Billings</b>	3,060	5%
<b>California</b>	0	0%
<b>Nashville</b>	864	1%
<b>Navajo</b>	18,794	31%
<b>Oklahoma</b>	9,691	16%
<b>Phoenix</b>	9,407	16%
<b>Portland</b>	0	0%
<b>Tucson</b>	551	1%

Data Source: Data tabulations prepared by IHS Headquarters Patient Care Statistics Branch

**TABLE 12. SUMMARY OF IHS OUTPATIENT VISITS (OPVs) BY AREA**

	All Facilities	(%)	Hospitals	(%)	Health Centers	(%)	Other Facilities	(%)
<b>TOTALS</b>	4,079,655	98%	2,668,277	98%	1,270,826	97%	140,552	100%
Aberdeen	516,788	13%	379,026	14%	118,004	9%	19,758	14%
Alaska	206,551	5%	185,618	7%	20,933	2%	0	0%
Albuquerque	352,173	9%	223,201	8%	103,973	8%	24,999	18%
Bemidji	123,702	3%	83,061	3%	30,745	2%	9,896	7%
Billings	359,272	9%	141,913	5%	201,128	16%	16,231	12%
California	0	0%	0	0%	0	0%	0	0%
Nashville	63,177	2%	60,548	2%	0	0%	2,629	2%
Navajo	850,826	21%	637,935	24%	181,121	14%	31,770	23%
Oklahoma	745,908	18%	486,293	18%	259,615	20%	0	0%
Phoenix	538,398	13%	426,891	16%	80,023	6%	31,484	22%
Portland	244,758	6%	0	0%	241,196	19%	3,562	3%
Tucson	78,102	2%	43,791	2%	34,088	3%	223	0%

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Data Source: Data tabulations prepared by IHS Headquarters Patient Care Statistics Branch



**TABLE 13. SUMMARY OF IHS PRIMARY CARE PATIENT VISITS (PCPVs) BY AREA**

	All Facilities	(%)	Hospitals	(%)	Health Centers	(%)	Other Facilities	(%)
<b>TOTALS</b>	2,699,657	98%	1,883,600	98%	708,172	97%	107,885	100%
Aberdeen	307,272	11%	242,000	13%	52,155	7%	13,117	12%
Alaska	166,006	6%	155,718	8%	10,288	1%	0	0%
Albuquerque	220,879	8%	147,403	8%	55,494	8%	17,982	17%
Bemidji	72,274	3%	52,409	3%	14,331	2%	5,534	5%
Billings	210,375	8%	86,995	5%	110,133	16%	13,247	12%
California	0	0%	0	0%	0	0%	0	0%
Nashville	34,570	1%	32,337	2%	0	0%	2,233	2%
Navajo	678,912	25%	503,319	27%	147,473	21%	28,120	26%
Oklahoma	478,887	18%	341,086	18%	137,801	19%	0	0%
Phoenix	365,935	14%	292,181	16%	48,381	7%	25,373	24%
Portland	110,407	4%	0	0%	108,333	15%	2,074	2%
Tucson	54,140	2%	30,152	2%	23,783	3%	205	0%

Data Source: Data tabulations prepared by IHS Headquarters Patient Care Statistics Branch

**TABLE 14. SUMMARY OF IHS HOSPITAL STAFF BY OCCUPATIONAL SERIES**

	Total Staff	(%)	Clinical	Non-Clinical	Total Supv.	Supervisor Categories		
						Supervisor	Manager	Wk. Ldr.
<b>TOTALS</b>	9,852	100%	3,901	5,951	1,402	1,269	66	67
GS-0100 Social Science, Psychology, and Welfare Group	187	2%	136	51	30	27	3	0
GS-0300 General Administrative, Clerical, and Office Svcs.	754	8%	0	754	50	44	3	3
GS-0600 Medical, Hospital, Dental, and Public Health	6,975	71%	3,671	3,304	1,101	1,026	56	19
GS-0800 Engineering and Architecture Group	177	2%	2	175	37	36	0	1
GS-2000 Supply Group	116	1%	0	116	19	17	2	0
GS-2500 and up Blue Collar Groups	1,207	12%	0	1,207	138	95	0	43
Other	436	4%	92	344	27	24	2	1
<b>Subtotals for GS-0600 Group</b>	<b>6,975</b>	<b>100%</b>	<b>3,671</b>	<b>3,304</b>	<b>1,101</b>	<b>1,026</b>	<b>56</b>	<b>19</b>
GS-0602 Medical Officer Series	655	9%	654	1	144	131	13	0
GS-0603 Physician's Assistant	93	1%	16	77	8	8	0	0
GS-0610 Nurse Series	2,272	33%	2,251	21	395	386	4	5
GS-0620 Practical (Vocational) Nurse	360	5%	0	360	0	0	0	0
GS-0621 Nursing Assistant	406	6%	0	406	0	0	0	0
GS-0640 Health Aid and Technician	131	2%	0	131	1	1	0	0
GS-0644 Medical Technologist	270	4%	268	2	37	36	0	1
GS-0645 Medical Technician	108	2%	0	108	0	0	0	0
GS-0647 Diagnostic Radiologic Tech.	150	2%	0	150	25	25	0	0
GS-0660 Pharmacist Series	250	4%	241	9	110	110	0	0
GS-0661 Pharmacy Technician	86	1%	0	86	0	0	0	0
GS-0670 Health System Admin.	61	1%	0	61	59	23	36	0
GS-0671 Health System Specialist	69	1%	0	69	37	37	0	0
GS-0675 Medical Record Technician	355	5%	0	355	15	10	0	5
GS-0679 Medical Clerk Series	692	10%	0	692	16	15	0	1
GS-0680 Dental Officer Series	176	3%	174	2	67	67	0	0
GS-0681 Dental Assistant Series	322	5%	0	322	21	15	0	6
Other Medical.... et. al. Series	519	7%	67	452	166	162	3	1

Data Source Data tabulations prepared from PHS Work Force On-Line Data System, as of 8/20/94

TABLE 15.

## IHS HOSPITAL STAFF ANALYSIS

Data Source: IHS Workforce Database, as of 8/20/94

Database: MOSFLTIM Report: HSPRFSTF

AREA	ORG COD	Hospital Name	Total Staff	Super- visors	Non- Supvsr	Admin Staff	Medicl Staff	Nursng Staff	Dental Staff	Pharm Staff	Records Staff	Engi- neering	Blue Collar	Other Staff
ABD	HGFB2	IND HOSP, EAGLE BUTTE, S.D.	80	12	68	6	7	23	1	3	9	1	15	15
ABD	HGFB2	IND HOSP, RAPID CITY, S.D.	152	23	129	16	9	32	18	4	22	1	24	26
ABD	HGFB2	IND HOSP, ROSELUD, S.D.	237	32	205	19	16	64	15	6	25	6	40	46
ABD	HGFB2	IND HOSP, SISSETON, S.D.	79	9	70	7	5	28	4	3	9	1	11	11
ABD	HGFB2	IND HOSP, FORT YATES, N.D.	100	12	88	9	7	21	6	4	12	1	15	25
ABD	HGFB2	IND HOSP, BELCOURT, N.D.	213	22	191	12	8	66	21	9	27	5	34	31
ABD	HGFB2	IND HOSP, WINNEBAGO, NEB	91	17	74	8	6	24	1	4	13	0	17	18
ABD	HGFB2	IND HOSP, WAGNER, S.D.	70	10	60	9	7	20	3	3	9	1	5	13
ABD	HGFB2	IND HOSP, PINE RIDGE, S.D.	261	28	233	19	20	84	13	10	26	2	44	43
ABQ	HGFA2	IND HOSP (TB), ALBUQUERQUE, N.	283	46	237	24	21	55	35	14	46	9	22	57
ABQ	HGFB2	IND HOSP, MESCALERO, N.M.	63	13	50	3	5	19	2	1	9	0	9	15
ABQ	HGFC5	IND HOSP, SANTA FE, N.M.	271	51	220	19	18	78	14	13	37	6	35	51
ABQ	HGFD2	IND HOSP, ZUNI, N.M.	178	30	148	13	16	43	6	6	19	1	27	47
ABQ	HGFE	IND HOSP ACOMACANONCITA-LAGUNA	167	27	140	14	9	35	11	4	24	2	24	44
ALAS	HGFA2	ALASKA NATIVE HOSP, ANCHORAGE	792	113	679	98	63	320	23	16	86	3	77	106
ALAS	HGFB2	ALASKA NATIVE HOSP, BARROW	26	9	17	0	0	15	3	2	2	0	3	1
BEMI	HGFEA2	IND HOSP, CASS LAKE, MN	92	17	75	10	7	27	7	3	9	5	9	15
BEMI	HGFEB2	IND HOSP, REDLAKE, MN	109	16	93	17	3	31	3	5	12	1	18	19

TABLE 15.

## IHS HOSPITAL STAFF ANALYSIS

Data Source: IHS Workforce Database, as of 8/20/94

Database:HOSFLTIM Report:HSPRFSTF

AREA	ORG COD	Hospital Name	Total Staff	Super- visors	Non- Supvsr	Admin Staff	Medicl Staff	Nursng Staff	Dental Staff	Pharm Staff	Records Staff	Engi- neering	Blue Collar	Other Staff
BILL	HGFNA3	IND HOSP, BROWNING, MT	206	24	182	14	13	62	15	7	23	7	34	31
BILL	HGFNB2	IND HOSP, CROW AGENCY, MT	182	25	157	18	13	56	12	8	19	5	22	29
BILL	HGFND2	IND HOSP, HARLEM, MT	74	12	62	5	5	18	7	3	8	2	11	15
NASH	HGFHA2	IND HLTH CTR, CHEROKEE, NC	154	28	126	16	13	43	12	5	21	1	12	31
NAV	HGFJA2	IND HOSP, CHINLE, AZ	462	49	413	44	37	138	29	12	53	15	66	68
NAV	HGFJB2	IND HOSP, CROWNPOINT, NM	242	31	211	31	19	63	15	6	22	8	37	41
NAV	HGFJC2	IND HOSP, FORT DEFIANCE, AZ	307	44	263	38	15	102	16	8	25	14	40	49
NAV	HGFJD2	IND HOSP, GALLUP, NM	724	88	636	79	75	239	28	26	75	20	74	108
NAV	HGFJG2	IND HOSP, TUBA CITY, AZ	442	66	376	38	42	151	20	14	52	12	49	64
NAV	HGFJJ2	IND HOSP, SHIPROCK, NM	544	67	477	64	42	169	32	14	58	25	56	84
OKLA	HGFKA2	IND HOSP, CLAREMORE, OK	346	55	291	24	29	106	19	15	61	2	33	57
OKLA	HGFKB2	IND HOSP, CLINTON, OK	82	14	68	9	5	17	5	4	19	0	10	13
OKLA	HGFKD2	IND HOSP, LAWTON, OK	217	32	185	20	18	67	6	10	32	1	26	37
OKLA	HGFKG2	WM. W. HASTINGS IND HOSP, TAHL	434	49	385	36	36	143	26	24	71	3	40	55
OKLA	HGFKJ2	IND HOSP, ADA, OK	267	45	222	23	10	89	19	8	54	1	27	36
PHX	HGFLA2	IND HOSP, PARKER, AZ	81	10	71	8	8	22	3	2	13	1	9	15
PHX	HGFLL2	IND HOSP, KEAMS CANYON, AZ	143	17	126	12	11	47	8	5	20	2	20	18
PHX	HGFLL2	IND HOSP, OWYHEE, NV	66	11	55	11	6	16	2	1	13	0	11	6

TABLE 15.

## IHS HOSPITAL STAFF ANALYSIS

Data Source: IHS Workforce Database, as of 8/20/94

Database:HOSFLTIM Report:HSPRFSTF

AREA	ORG COD	Hospital Name	Total Staff	Super-visors	Non-Supvrs	Admin Staff	Medicl Staff	Nursng Staff	Dental Staff	Pharm Staff	Records Staff	Engi-neerng	Blue Collar	Other Staff
PHX	HGFLG2	IND HOSP, SAN CARLOS, AZ	135	21	114	10	9	38	8	5	22	2	17	24
PHX	HGFLJ4	IND HOSP, WHITERIVER, AZ	257	43	214	17	16	83	13	13	39	2	38	36
PHX	HGFLK2	IND HOSP, YUMA, AZ	63	10	53	11	3	20	2	2	9	0	5	11
PHX	HGFL2	IND HOSP, SACATON, AZ	175	26	149	12	10	45	15	8	28	2	24	31
PHX	HGFLM2	PHOENIX IND MED CTR, PHOENIX,	782	121	661	76	71	270	23	19	75	4	85	159
TUC	HGA77F6	IND HOSP, SELLS, AZ	203	27	176	14	15	49	13	7	25	3	32	45
GRAND TOTALS:			9,852	1,402	8,450	933	748	3,038	534	336	1,233	177	1,207	1,646

**TABLE 16. HOSPITAL SPAN OF CONTROL BY OCCUPATIONAL SERIES**

	Total Staff	Supervisor Staff	Span of Control	% by Supervisor Categories		
				Supervisor	Manager	Wk. Ldr.
<b>TOTALS</b>	9,852	1,402	7.0	91%	5%	5%
GS-0100 Social Science, Psychology, and Welfare Group	187	30	6.2	90%	10%	0%
GS-0300 General Administrative, Clerical, and Office Svcs.	754	50	15.1	88%	6%	6%
GS-0600 Medical, Hospital, Dental, and Public Health	6,975	1,101	6.3	93%	5%	2%
GS-0800 Engineering and Architecture Group	177	37	4.8	97%	0%	3%
GS-2000 Supply Group	116	19	6.1	89%	11%	0%
GS-2500 and up Blue Collar Groups	1,207	138	8.7	69%	0%	31%
Other	436	27	16.1	89%	7%	4%
<b>Subtotals for GS-0600 Group</b>	6,975	1,101	6.3	93%	5%	2%
GS-0602 Medical Officer Series	655	144	4.5	91%	9%	0%
GS-0603 Physician's Assistant	93	8	11.6	100%	0%	0%
GS-0610 Nurse Series	2,272	395	5.8	98%	1%	1%
GS-0620 Practical (Vocational) Nurse	360	0	0.0	0%	0%	0%
GS-0621 Nursing Assistant	406	0	0.0	0%	0%	0%
GS-0640 Health Aid and Technician	131	1	131.0	100%	0%	0%
GS-0644 Medical Technologist	270	37	7.3	97%	0%	3%
GS-0645 Medical Technician	108	0	0.0	0%	0%	0%
GS-0647 Diagnostic Radiologic Tech.	150	25	6.0	100%	0%	0%
GS-0660 Pharmacist Series	250	110	2.3	100%	0%	0%
GS-0661 Pharmacy Technician	86	0	0.0	0%	0%	0%
GS-0670 Health System Admin.	61	59	1.0	39%	61%	0%
GS-0671 Health System Specialist	69	37	1.9	100%	0%	0%
GS-0675 Medical Record Technician	355	15	23.7	67%	0%	33%
GS-0679 Medical Clerk Series	692	16	43.3	94%	0%	6%
GS-0680 Dental Officer Series	176	67	2.6	100%	0%	0%
GS-0681 Dental Assistant Series	322	21	15.3	71%	0%	29%
Other Medical, et. al. Series	519	166	3.1	98%	2%	1%

Data Source Data tabulations prepared from PHS Work Force On-Line Data System, as of 8/20/94

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TABLE 17.

## IHS HOSPITAL SUPERVISOR RATIO ANALYSIS

Data Source: IHS Workforce Database, as of 8/20/94

Database:HOSFLTIM Report:HSPRFSPV

AREA	ORG COD	Hospital Name	Total Staff	Non-Supvsr	Super-visors	RATIO	Clinical				Non-Clinical			
							FTEs	Non-Spv	Suprvs	RATIO	FTEs	Non-Spv	Suprvs	RATIO
ABD	HGFB02	IND HOSP, EAGLE BUTTE, S.D.	80	68	12	5.67	35	29	6	4.83	45	39	6	6.50
ABD	HGFBG2	IND HOSP, RAPID CITY, S.D.	152	129	23	5.61	54	45	9	5.00	98	84	14	6.00
ABD	HGFBH2	IND HOSP, ROSEBUD, S.D.	237	205	32	6.41	77	61	16	3.81	160	144	16	9.00
ABD	HGFBJ2	IND HOSP, SISSETON, S.D.	79	70	9	7.78	30	25	5	5.00	49	45	4	11.25
ABD	HGFBK2	IND HOSP, FORT YATES, N.D.	100	88	12	7.33	31	25	6	4.17	69	63	6	10.50
ABD	HGFB2	IND HOSP, BELCOURT, N.D.	213	191	22	8.68	69	58	11	5.27	144	133	11	12.09
ABD	HGFBM2	IND HOSP, WINNEBAGO, NEB	91	74	17	4.35	36	27	9	3.00	55	47	8	5.88
ABD	HGFBN2	IND HOSP, WAGNER, S.D.	70	60	10	6.00	30	23	7	3.29	40	37	3	12.33
ABD	HGFBQ2	IND HOSP, PINE RIDGE, S.D.	261	233	28	8.32	103	85	18	4.72	158	148	10	14.80
ABQ	HGFDA2	IND HOSP (TB), ALBUQUERQUE,	283	237	46	5.15	107	78	29	2.69	176	159	17	9.35
ABQ	HGFDB2	IND HOSP, MESCALERO, N.M.	63	50	13	3.85	28	20	8	2.50	35	30	5	6.00
ABQ	HGFDC5	IND HOSP, SANTA FE, N.M.	271	220	51	4.31	120	86	34	2.53	151	134	17	7.88
ABQ	HGFDD2	IND HOSP, ZUNI, N.M.	178	148	30	4.93	62	45	17	2.65	116	103	13	7.92
ABQ	HGFDE	IND HOSP ACOMACANONCITA-LAGU	167	140	27	5.19	51	38	13	2.92	116	102	14	7.29
ALAS	HGFCA2	ALASKA NATIVE HOSP, ANCHORAG	792	679	113	6.01	388	313	75	4.17	404	366	38	9.63
ALAS	HGFCB2	ALASKA NATIVE HOSP, BARROW	26	17	9	1.89	20	15	5	3.00	6	2	4	0.50
BEMI	HGFEA2	IND HOSP, CASS LAKE, MN	92	75	17	4.41	43	33	10	3.30	49	42	7	6.00
BEMI	HGFEB2	IND HOSP, REDLAKE, MN	109	93	16	5.81	41	31	10	3.10	68	62	6	10.33

TABLE 17.

## IHS HOSPITAL SUPERVISOR RATIO ANALYSIS

Data Source: IHS Workforce Database, as of 8/20/94

Database:HOSFLTIM Report:HSPRFSPV

AREA	ORG COD	Hospital Name	Total Staff	Non-Supvsr	Super-visors	RATIO	Clinical				Non-Clinical			
							FTEs	Non-Spv	Suprvs	RATIO	FTEs	Non-Spv	Suprvs	RATIO
BILL	HGFNA3	IND HOSP, BROWNING, MT	206	182	24	7.58	75	61	14	4.36	131	121	10	12.10
BILL	HGFNB2	IND HOSP, CROW AGENCY, MT	182	157	25	6.28	72	58	14	4.14	110	99	11	9.00
BILL	HGFND2	IND HOSP, HARLEM, MT	74	62	12	5.17	29	23	6	3.83	45	39	6	6.50
NASH	HGFHA2	IND HLTH CTR, CHEROKEE, NC	154	126	28	4.50	59	45	14	3.21	95	81	14	5.79
NAV	HGFJA2	IND HOSP, CHINLE, AZ	462	413	49	8.43	183	155	28	5.54	279	258	21	12.29
NAV	HGFJB2	IND HOSP, CROWNPOINT, NM	242	211	31	6.81	73	55	18	3.06	169	156	13	12.00
NAV	HGFJC2	IND HOSP, FORT DEFIANCE, AZ	307	263	44	5.98	116	85	31	2.74	191	178	13	13.69
NAV	HGFJD2	IND HOSP, GALLUP, NM	724	636	88	7.23	283	225	58	3.88	441	411	30	13.70
NAV	HGFJG2	IND HOSP, TUBA CITY, AZ	442	376	66	5.70	185	148	37	4.00	257	228	29	7.86
NAV	HGFJJ2	IND HOSP, SHIPROCK, NM	544	477	67	7.12	205	160	45	3.56	339	317	22	14.41
OKLA	HGFKA2	IND HOSP, CLAREMORE, OK	346	291	55	5.29	143	109	34	3.21	203	182	21	8.67
OKLA	HGFKB2	IND HOSP, CLINTON, OK	82	68	14	4.86	30	20	10	2.00	52	48	4	12.00
OKLA	HGFKD2	IND HOSP, LAWTON, OK	217	185	32	5.78	87	67	20	3.35	130	118	12	9.83
OKLA	HGFKG2	WM. W. HASTINGS IND HOSP, TA	434	385	49	7.86	176	145	31	4.68	258	240	18	13.33
OKLA	HGFKJ2	IND HOSP, ADA, OK	267	222	45	4.93	100	75	25	3.00	167	147	20	7.35
PHX	HGFLA2	IND HOSP, PARKER, AZ	81	71	10	7.10	29	25	4	6.25	52	46	6	7.67
PHX	HGFLC2	IND HOSP, KEAMS CANYON, AZ	143	126	17	7.41	51	42	9	4.67	92	84	8	10.50
PHX	HGFLD2	IND HOSP, OWYHEE, NV	66	55	11	5.00	22	18	4	4.50	44	37	7	5.29

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TABLE 17.

## IHS HOSPITAL SUPERVISOR RATIO ANALYSIS

Data Source: IHS Workforce Database, as of 8/20/94

Database:HOSFLTIM Report:HSPRFSPV

AREA	ORG COD	Hospital Name	Total Staff	Non-Supvsr	Super-visors	RATIO	Clinical				Non-Clinical			
							FTEs	Non-Spv	Suprvs	RATIO	FTEs	Non-Spv	Suprvs	RATIO
PHX	HGFLG2	IND HOSP, SAN CARLOS, AZ	135	114	21	5.43	47	38	9	4.22	88	76	12	6.33
PHX	HGFLJ4	IND HOSP, WHITERIVER, AZ	257	214	43	4.98	105	80	25	3.20	152	134	18	7.44
PHX	HGFLK2	IND HOSP, YUMA, AZ	63	53	10	5.30	22	15	7	2.14	41	38	3	12.67
PHX	HGFL2	IND HOSP, SACATON, AZ	175	149	26	5.73	64	51	13	3.92	111	98	13	7.54
PHX	HGFLM2	PHOENIX IND MED CTR, PHOENIX	782	661	121	5.46	356	269	87	3.09	426	392	34	11.53
TUC	HGA77F6	IND HOSP, SELLS, AZ	203	176	27	6.52	64	49	15	3.27	139	127	12	10.58
GRAND TOTALS:			9,852	8,450	1,402		3,901	3,055	846		5,951	5,395	556	

**TABLE 18. SUMMARY OF HOSPITAL STAFF**

	<b>Staff Count</b>	<b>(%)</b>
	9,852	100%
<b>All employees</b>	9,852	100%
<b>Clinical Staff</b>	3,901	40%
<b>Non-Clinical Staff</b>	5,951	60%
<b>Clinical Supervisors</b>	821	97%
<b>Clinical Managers</b>	19	2%
<b>Clinical Work Ldrs.</b>	6	1%
<b>Non-clinical Supervisors</b>	448	81%
<b>Non-clinical Managers</b>	47	8%
<b>Non-clinical Work Ldrs.</b>	61	11%
<b>Group GS-0600</b>	6,975	71%
<b>Other</b>	2,877	29%
<b>Physician, Nurse, Dental</b>	4,285	61%
<b>Other Group GS-0600</b>	2,690	39%
<b>Group GS-0600 Supervisors</b>	1,026	93%
<b>Group GS-0600 Managers</b>	56	5%
<b>Group GS-0600 Work Ldrs.</b>	19	2%

Data Source: Data tabulations prepared from PHS Work Force On-Line Data System, as of 8/20/94

**TABLE 19. SUMMARY OF SPAN OF CONTROL  
IN IHS HOSPITALS**

	<b>Span of Control</b>
<b>All Supervisors</b>	7.0
<b>Clinical</b>	4.6
<b>Non-clinical</b>	10.7
<b>All Supervisors (WITHOUT Physician, Nurse, Dental Supervisors)</b>	12.4

Data Source: Data tabulations prepared from PHS Work Force On-Line Data System, as of 8/20/94

**TABLE 20. SUMMARY OF IHS HEALTH CENTER STAFF BY OCCUPATIONAL SERIES**

	Total Staff	(%)	Clinical	Non-Clinical	Total Supv.	Supervisor Categories		
						Supervisor	Manager	Wk. Ldr.
<b>TOTALS</b>	1,762	100%	636	1,126	297	275	17	5
GS-0100 Social Science, Psychology, and Welfare Group	59	3%	47	12	8	7	1	0
GS-0300 General Administrative, Clerical, and Office Svcs.	220	12%	0	220	27	26	1	0
GS-0600 Medical, Hospital, Dental, and Public Health	1,209	69%	589	620	243	228	14	1
GS-0800 Engineering and Architecture Group	37	2%	0	37	6	5	1	0
GS-2000 Supply Group	20	1%	0	20	4	0	0	4
GS-2500 and up Blue Collar Groups	140	8%	0	140	7	7	0	0
Other	77	4%	0	77	2	2	0	0
<b>Subtotals for GS-0600 Group</b>	<b>1,209</b>	<b>100%</b>	<b>589</b>	<b>620</b>	<b>243</b>	<b>228</b>	<b>14</b>	<b>1</b>
GS-0602 Medical Officer Series	125	10%	125	0	32	32	0	0
GS-0603 Physician's Assistant	14	1%	2	12	2	2	0	0
GS-0610 Nurse Series	232	19%	230	2	53	52	1	0
GS-0620 Practical (Vocational) Nurse	37	3%	0	37	0	0	0	0
GS-0621 Nursing Assistant	28	2%	0	28	0	0	0	0
GS-0640 Health Aid and Technician	35	3%	0	35	0	0	0	0
GS-0644 Medical Technologist	63	5%	61	2	7	7	0	0
GS-0645 Medical Technician	17	1%	0	17	0	0	0	0
GS-0647 Diagnostic Radiologic Tech.	22	2%	0	22	2	2	0	0
GS-0660 Pharmacist Series	77	6%	67	10	36	36	0	0
GS-0661 Pharmacy Technician	15	1%	0	15	0	0	0	0
GS-0670 Health System Admin.	22	2%	0	22	19	6	13	0
GS-0671 Health System Specialist	17	1%	0	17	7	7	0	0
GS-0675 Medical Record Technician	87	7%	0	87	7	6	0	1
GS-0679 Medical Clerk Series	114	9%	0	114	0	0	0	0
GS-0680 Dental Officer Series	63	5%	63	0	35	35	0	0
GS-0681 Dental Assistant Series	139	11%	0	139	5	5	0	0
Other Medical, ... et. al. Series	102	8%	41	61	38	38	0	0

Data Source Data tabulations prepared from PHS Work Force On-Line Data System, as of 8/20/94

TABLE 21.

## IHS HEALTH CENTER STAFF ANALYSIS

Data Source: IHS Workforce Database, as of 8/20/94

Database:HCTFLTIM Report:HCPRFSTF

AREA	ORG COD	Health Center Name	Total Staff	Super-Visors	Non-Supvr	Admin Staff	Medicl Staff	Nursng Staff	Dental Staff	Pharm Staff	Records Staff	Engi-neerng	Blue Collar	Other Staff
ABD	HGFBE2	INDIAN HC, FORT TOTTEN N.D.	43	9	34	6	3	5	5	3	8	0	4	9
ABD	HGF8K3	IND HALTH CTR, MCLAUGHLIN, S.D	25	3	22	2	0	7	5	1	4	1	2	3
ABD	HGF8P2	IND HC, NEW TOWN, N.D. (MINNE-	47	8	39	5	2	7	5	1	8	2	2	15
ABD	HGF8Q3	IND HEALTH CTR, WANBLEE, S.D.	10	1	9	1	2	2	2	0	1	0	2	0
ABD	HGF8R	LOWER BRULE HLTH CNTR	25	4	21	3	3	4	0	3	6	0	2	4
ABD	HGF8S	CROW CREEK HLTH CENTER	49	8	41	9	2	8	5	2	7	1	5	10
ABO	HGFDA3	IND HC, ALBUQUERQUE, N.M.	2	0	2	0	0	0	0	0	1	0	1	0
ABO	HGFDC6	IND HC, DULCE, N.M.	24	7	17	0	3	6	3	2	4	0	3	3
ABO	HGFDC8	IND HC, TAOS, N.M.	34	4	30	3	2	5	4	2	9	1	4	4
ABO	HGFDG2	IND HC, IGNACIO, CO	25	6	19	2	2	3	4	2	4	0	1	7
ABO	HGFDG3	IND HC, TOWAOC, CO	17	4	13	1	2	2	3	1	4	0	1	3
BEM1	HGFEC2	IND HC, WHITE EARTH	49	8	41	8	4	6	5	3	8	0	5	10
BILL	HGFFK2	IND HLTH CTR, LAME DEER, MT	1	0	1	0	0	0	0	0	0	0	0	1
BILL	HGFNE2	IND HC, POPLAR, MT	80	11	69	14	10	11	6	5	6	2	5	21
BILL	HGFNE3	IND HC, WOLF POINT, MT	27	1	26	4	3	4	3	2	2	1	3	5
BILL	HGFNH2	IND HC, FORT WASHAKIE, WY	69	13	56	10	3	8	7	4	8	3	5	21
BILL	HGFNH3	IND HC, ARAPAHOE, WY	26	3	23	1	3	6	4	1	4	0	2	5
BILL	HGFNJ2	IND HC, BOX ELDER, MT	45	6	39	5	5	4	5	2	7	1	5	11

TABLE 21.

## IHS HEALTH CENTER STAFF ANALYSIS

Data Source: IHS Workforce Database, as of 8/20/94

Database:HCTFLTIM Report:HCPRFSTF

AREA	ORG COD	Health Center Name	Total Staff	Super-visors	Non-Supvsr	Admin Staff	Medicl Staff	Nursng Staff	Dental Staff	Pharm Staff	Records Staff	Engi-neerng	Blue Collar	Other Staff
BILL	HGFNK2	IND HC, LAME DEER, MT	62	7	55	11	6	9	7	4	7	3	4	11
NAV	HGFJD4	IND HC, TOHATCHI, NM	10	4	6	0	1	3	2	1	0	0	1	2
NAV	HGFJE2	IND HC, KAYENTA, AZ	154	20	134	22	15	30	14	6	16	6	15	30
NAV	HGFJH6	IND HC, WINSLOW, AZ	121	15	106	19	11	21	14	2	13	7	11	23
NAV	HGFJJ4	IND SCH. HC, TEEC NOS POS, AZ	4	0	4	0	1	2	0	0	1	0	0	0
OKLA	HGFKA8	IND HC, MIAMI, OK	32	8	24	3	4	5	4	3	8	0	0	5
OKLA	HGFKB3	IND HC, WATONGA, OK	18	3	15	0	1	5	3	1	4	0	1	3
OKLA	HGFKB4	IND HC, CONCHO, OK	21	2	19	0	1	4	3	3	5	0	1	4
OKLA	HGFKD3	IND HC, ANADARKO, OK	53	8	45	5	4	9	9	3	9	1	4	9
OKLA	HGFKG5	IND HC, STILLWELL, OK	5	3	2	0	0	1	3	1	0	0	0	0
OKLA	HGFKK2	IND HC, SHAWNEE, OK	80	12	68	7	5	13	8	4	22	0	0	21
PHX	HGFLB2	IND HC, ROOSEVELT, UT (UINTAH	54	15	39	5	3	8	7	2	12	0	4	13
PHX	HGFLC3	IND HC SECOND MESA, AZ	3	0	3	0	0	0	2	0	1	0	0	0
PHX	HGFLG3	IND HC, BYLAS, AZ	6	0	6	0	1	2	0	0	2	0	0	1
PHX	HGFLJ3	IND HC, CIBECUE, AZ	18	3	15	2	1	5	0	1	4	0	2	3
PHX	HGFLM4	IND HC, (SALT RIVER) SCOTTSDAL	5	1	4	0	0	3	0	0	0	1	0	1
PHX	HGFLM5	IND HC, (GILA CROSSING) LAVEEN	5	0	5	0	0	2	0	0	2	1	0	0
PHX	HGFLN	IND HC, PEACH SPRINGS, AZ	28	2	26	4	2	3	2	1	9	1	3	3

TABLE 21.

## IHS HEALTH CENTER STAFF ANALYSIS

Data Source: IHS Workforce Database, as of 8/20/94

Database:HCTFLTIM Report:HCPRFSTF

AREA	ORG COD	Health Center Name	Total Staff	Super-visors	Non-Supvsr	Admin Staff	Medicl Staff	Nursng Staff	Dental Staff	Pharm Staff	Records Staff	Engi-neerng	Blue Collar	Other Staff
PORT	HGFMB2	IND HC, NESPELEM, WA	45	11	34	11	2	7	3	3	4	0	5	10
PORT	HGFMC2	IND HC, FORT HALL, ID	66	15	51	11	5	9	11	4	3	1	7	15
PORT	HGFMD2	INDIAH HC, LAPWAI, ID	44	8	36	6	4	10	6	2	5	0	3	8
PORT	HGFME2	IND HC, WARM SPRINGS, OR	90	13	77	20	4	17	12	7	9	0	3	18
PORT	HGFMG2	IND HC, NEAH BAY, WA	29	6	23	5	3	5	6	0	2	0	3	5
PORT	HGFMH2	IND HC, MARIETTA, WA	11	6	5	0	2	3	3	1	0	0	0	2
PORT	HGFMJ2	IND HC, TAHOLA, WA	25	5	20	5	2	3	3	1	4	0	3	4
PORT	HGFMM2	IND HC, WELLPINIT, WA	34	9	25	8	2	5	3	2	4	0	4	6
PORT	HGFMN2	IND HC, TOPPENISH, WA	107	18	89	15	6	19	19	6	8	0	14	20
TUC	HGA77F3	IND HLTH CTR, SANTA ROSA, AZ	2	1	1	0	1	1	0	0	0	0	0	0
TUC	HGA77F4	IND HLTH CTR, TUCSON, AZ	32	6	26	4	3	5	5	0	7	4	0	4
GRAND TOTALS:			1,762	297	1,465	237	139	297	215	92	252	37	140	353

**TABLE 22. HEALTH CENTER SPAN OF CONTROL BY OCCUPATIONAL SERIES**

	Total Staff	Supervisor Staff	Span of Control	% by Supervisor Categories		
				Supervisor	Manager	Wk. Ldr.
<b>TOTALS</b>	1,762	297	5.9	93%	6%	2%
GS-0100 Social Science, Psychology, and Welfare Group	59	8	7.4	88%	13%	0%
GS-0300 General Administrative, Clerical, and Office Svcs.	220	27	8.1	96%	4%	0%
GS-0600 Medical, Hospital, Dental, and Public Health	1,209	243	5.0	94%	6%	0%
GS-0800 Engineering and Architecture Group	37	6	6.2	83%	17%	0%
GS-2000 Supply Group	20	4	5.0	0%	0%	100%
GS-2500 and up Blue Collar Groups	140	7	20.0	100%	0%	0%
Other	77	2	38.5	100%	0%	0%
<b>Subtotals for GS-0600 Group</b>	1,209	243	5.0	94%	6%	0%
GS-0602 Medical Officer Series	125	32	3.9	100%	0%	0%
GS-0603 Physician's Assistant	14	2	7.0	100%	0%	0%
GS-0610 Nurse Series	232	53	4.4	98%	2%	0%
GS-0620 Practical (Vocational) Nurse	37	0	0.0	0%	0%	0%
GS-0621 Nursing Assistant	28	0	0.0	0%	0%	0%
GS-0640 Health Aid and Technician	35	0	0.0	0%	0%	0%
GS-0644 Medical Technologist	63	7	9.0	100%	0%	0%
GS-0645 Medical Technician	17	0	0.0	0%	0%	0%
GS-0647 Diagnostic Radiologic Tech.	22	2	11.0	100%	0%	0%
GS-0660 Pharmacist Series	77	36	2.1	100%	0%	0%
GS-0661 Pharmacy Technician	15	0	0.0	0%	0%	0%
GS-0670 Health System Admin.	22	19	1.2	32%	68%	0%
GS-0671 Health System Specialist	17	7	2.4	100%	0%	0%
GS-0675 Medical Record Technician	87	7	12.4	86%	0%	14%
GS-0679 Medical Clerk Series	114	0	0.0	0%	0%	0%
GS-0680 Dental Officer Series	63	35	1.8	100%	0%	0%
GS-0681 Dental Assistant Series	139	5	27.8	100%	0%	0%
Other Medical... et. al. Series	102	38	2.7	100%	0%	0%

Data Source: Data tabulations prepared from PHS Work Force On-Line Data System, as of 8/20/94

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