The New Era of Hospital Epidemiology: What You Need to Succeed

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Managed care and competition are creating pressures to control costs and prevent adverse outcomes in health care. These forces are also creating a new era in hospital epidemiology, one in which there are many opportunities for the infectious disease physician. The ability to create and administer a hospital epidemiology program is a valuable asset in this environment. Included in hospital epidemiology programs are activities such as infection control, quality management, employee health, risk management, and microbiology and clinical pharmacy consultations. The hospital epidemiologist must be prepared to take advantage of the opportunities created.

Managed care and health maintenance organizations are increasingly prevalent options for providing health care. These organizations depend upon "gatekeepers," usually primary care physicians, to manage the care of most patients. Specialists are used less frequently in managed care than in fee-for-service medicine. However, the infectious disease specialist possesses unique skills that may be helpful to managed care organizations [1]. Among the most useful skills is the ability to manage a hospital or health care epidemiology program. Such programs are often centered around a hospital's infection control program, but the scope of hospital epidemiology programs has expanded considerably in the last 10 years to include quality and outcome management for hospitals and for managed care organizations.

The skills needed for infection control and hospital epidemiology are not usually provided as part of an infectious disease fellowship [2]. Thus, infectious disease physicians must make a commitment to learn about hospital epidemiology, either during or after their fellowship. Once these skills are acquired, they must be marketed to ensure that managed care organizations understand their value. The hospital epidemiologist should be prepared to convince health care administrators that hospital epidemiology services can be very valuable for managed care and require reimbursement.

Some organizations are unwilling to pay for hospital epidemiology services and consider them part of the duties that the medical staff provides to the hospital through committee activities. Administrators may express concern that paying for infection control will set a bad precedent for other committee chairs. However, when infection control works well, the infectious disease physician often has fewer consultations because nosocomial infections are prevented. Further, the hospital epidemiologist occasionally has to make decisions that may be unpopular among some members of the medical staff. Thus, payment, in part, compensates the infectious disease physician for providing hospital services that may conflict with growth of a consultation practice. Moreover, in contrast to the role of most committee chairpersons whose activities consume 2–3 hours per month, the infection control physician has more frequent scheduled, as well as unscheduled, meetings and demands for advice and consultation that can require up to 6–8 hours each week.

Evaluating a Career Opportunity

When you are being recruited for a clinical position, you must consider which additional activities to discuss with the hospital administrators. Many hospitals need the clinical services of an infectious disease physician and are willing to explore payment for other services, such as managing a hospital epidemiology program or administering a travel clinic. To evaluate such an opportunity, you should determine who currently directs the infection control program and chairs the infection control committee, who are the infection control practitioners, and what are the duties, job perceptions, and aspirations of the infection control practitioners. The infection control practitioners will be your colleagues, and you will need to be sure that you can function with them as a team. You should also consider other opportunities to supplement your salary (e.g., outpatient intravenous therapy programs and AIDS clinics).

It is critical to review the most recent accreditation report of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). The hospital may have serious problems with outpatient intravenous therapy programs and AIDS clinics.
is compromised. However, there are still opportunities to demonstrate that you can make a substantial contribution.

What You Can Offer

Your greatest contribution to a hospital will be to prevent nosocomial infections. When health care reimbursement is fixed, such as in managed care or Medicare, complications (e.g., nosocomial infections) are a source of direct monetary loss. Thus, there is a premium on preventing infections and other complications [3, 4]. The SENIC (study on the efficacy of nosocomial infection control) showed that about one-third of nosocomial infections could be prevented by a well-run infection control program [5] and that the cost savings can be calculated [6]. Such evidence can be presented to hospital administrators when seeking reimbursement.

Depending on your interests and skills, a number of other activities can be combined with infection control under the umbrella of hospital epidemiology (including quality and outcome management, employee health, risk management, and microbiology and pharmacy consultations). Most of these activities are familiar to infectious disease physicians. Quality management initially may seem foreign to physicians schooled in traditional infectious diseases, but it is potentially a key activity for infection control programs. The quality management department needs to ensure the validity of physician-specific data [7], and this and many other quality management activities require epidemiology skills.

Continuous quality improvement (CQI) [8] is the most widespread philosophy underlying hospital quality improvement programs, and data management and statistical and epidemiologic analysis are the backbone of CQI [9]. Moreover, CQI programs provide many opportunities to expand into other aspects of quality management, e.g., development of clinical practice guidelines [10]. Such guidelines have been shown to decrease variations in physician practices, length of hospital stay, and health systems costs. If you focus on the continuum of care, and not just hospital care, you can become involved in preventive care and participate in the development of guidelines promoting efficient use of acute care facilities.

Employee health often needs the services of an infectious disease physician and epidemiologist to develop policy and occasionally manage problems. The following opportunities exist: developing criteria for interpreting tuberculosis skin tests, administering isoniazid, determining strategies for vaccination against infectious diseases (including hepatitis B, hepatitis A, influenza, varicella, rubella, measles, mumps, and tuberculosis), handling needlesticks and blood and/or body fluid exposures, managing HIV-exposed and/or HIV-infected employees, determining infection control–related hiring practices, handling exposures to other infections (including meningococcal infection, tuberculosis, hepatitis A, hepatitis B, varicella, measles, rubella, scabies, etc.), clearing employees to work after they return from sick leave due to infectious diseases, and ensuring compliance with regulations of the Occupational Safety and Health Administration.

The hospital’s risk management department may also desire the services of an infectious disease physician and epidemiologist. Opportunities to help include reviewing medical records for nosocomial infections–related litigation or payment denials, reviewing incident reports for trends, and providing epidemiologic advice on prevention of adverse outcomes.

The microbiology laboratory needs the services of an infectious disease physician for clinical direction. The following opportunities exist: selecting antibiotics for susceptibility testing; determining which culture results should be reported immediately to the attending physician; determining the types and frequency of services that need to be provided (e.g., during what hours should smears for mycobacteria be available); determining which tests can be deleted (e.g., cultures of Foley catheter tips); and creating an antibiotic susceptibility “cascade,” which includes selective reporting of antibiotic susceptibility, to help direct prescribing practices. The infectious disease physician can also provide clinical relevancy, education, and motivation for the microbiology laboratory technologists.

The pharmacy and therapeutics committee requires the services of an infectious disease physician because antibiotics constitute a large percentage of pharmacy costs and are subject to misuse. Opportunities for input by an infectious disease physician include selection of an antibiotic formulary, restriction of certain antibiotics for infection control purposes, determination of proper antibiotic prophylaxis regimens, and introduction of innovative approaches to antibiotic therapy (e.g., using aminoglycosides once daily and early conversions from parenteral to oral therapy). All of these activities may save money, help prevent infections, and decrease drug side and toxic effects.

Other infection control opportunities exist in local nursing homes, emergency medical services, and outpatient clinics. Opportunities related to infection control include managing outpatient intravenous antibiotic programs, administering a travel clinic, and supervising or conducting clinical research. Clinical research may be a source of funds, provide access to new pharmaceuticals, and enhance the hospital’s research reputation. However, such research requires access to an institutional review board and sophisticated support services.

Getting Paid

Once you determine the services that you want to offer a hospital or managed care organization, you need to determine a reasonable charge for your efforts. It is helpful to keep a log of the time you spend on hospital epidemiology services because administrators often have no idea how much time is involved in consulting for hospital epidemiology and you too may underestimate the sizable time demands. Your time should be compensated at a rate between what you actually make hourly in clinical practice (minus expenses) and what infectious disease
consultants in your area charge lawyers hourly for their services. We recommend this because your compensation must reflect, in part, your knowledge base and expertise. Remember that you want to establish a long-term relationship and must establish trust. However, most importantly, you should feel that you are being compensated adequately and that you want to do the job.

It is important to know how much time your duties will take before you decide whether you want to assume these duties and how much you should be paid for performing them. It is not possible for us to give an accurate estimate of the time required because it depends on your skills and knowledge, the competence of your team members, your ability to delegate duties rather than do them yourself, and the needs and size of your program (e.g., is the program primitive or state-of-the-art when you begin). The best method of estimating time requirements is by talking to those who have experience in each of the areas of hospital epidemiology that you plan to cover. If you discover that you did not accurately estimate your time commitment, you can discuss this matter with your administrator at your scheduled meeting; you may be able to renegotiate your contract to better reflect your needs.

When you calculate your salary or hourly rate, you also need to consider travel time, any support services that you need to provide (e.g., a secretary, lawyers for contracts, and accountants for financial records), car expenses, office equipment (e.g., JCAHO manual, books, copy machines, and computers), continuing education, and laboratory support. Most of these expenses will be covered by the hospital or managed care organization, but some may be left to you, especially if you do not include them in your negotiations.

If you cannot convince your administrator of the worth of your services, consider working at a more enlightened hospital. Alternatively, consider offering to manage the infection control program for a percentage (e.g., 5%) of what you can convince them that you saved during a trial period (e.g., 6 months). Then, show them what you can do.

What You Need to Succeed

If you are to succeed in your job as a hospital epidemiologist, you must have a contract and good skills and support (including epidemiology and statistical skills, management skills, computer and software support, partnership with epidemiology nurses, committee participation, administrative support, and “people skills’’). Hospital epidemiology is a science not a hobby [11]. You can refine your skills by seeking special training during an infectious disease fellowship, self-study, attending training courses (such as those offered by the Society for Healthcare Epidemiology of America in various locations), and attending presentations and seminars at national meetings. Scientific skills allow you to prevent infections and other complications and to seek out and eliminate costly but ineffective infection control traditions and rituals. Good epidemiology skills are needed to present accurate data in a concise and forceful format. Physicians and administrators are impressed by such data, which are difficult to ignore. Thus, good data can drive necessary change and improvement.

To be effective, the hospital epidemiologist needs to learn management [10]. You must know how to get things done. Making sound policy is only part of the solution. You must be able to effect change and implement policy, sometimes over the objections of many other physicians and hospital employees. The hospital epidemiologist should consider special training in management (e.g., as provided by the American Management Association in Chicago or the American College of Physician Executives).

One of your first management decisions should be to determine what support is needed to do a good job. Computers and software are very important to a modern hospital epidemiology program [12]. Secretarial support is also a definite requirement. Even if you do your own word processing, there will be many tasks (e.g., scheduling meetings) that require secretarial support for you and for the infection control practitioners.

Your infection control and/or quality management practitioners will be the most critical part of your team. These practitioners should be well trained and should report to your department rather than to nursing to ensure your control of your program.

You also need to decide how you can best interact with the infection control and other committees, as a consultant-member or as chair. Being the chair has its advantages but can be seen as putting too much power in the hands of one individual. If a major controversy evolves from an infection control committee decision, the hospital epidemiologist who is not chairing the committee can depend on the chair for support, which is especially helpful if the chair is an influential member of the medical staff. However, unless there are major local political considerations, chairing the infection control committee is desirable.

As you perform your duties, you must be friendly, visible, approachable, and known as you represent your infection control and/or quality management team to the medical staff. You should keep a key administrator updated on your department’s activities at least monthly. Sometimes updating can be done through the administrative representatives to committees on which you are active, including the infection control committee. You should also share department successes with the medical staff and acknowledge and explain problems or failures. This can be done without taking sole credit for the successes, while thanking those who helped with the effort.

Developing a Contract

To protect yourself and to clarify the terms under which you will provide hospital epidemiology services, you will need a contract. Without a contract you will always be at a disadvantage. Typically, the hospital will present you with a standard consulting services agreement, and it will be up to you to make
sure that the contract reflects your understanding with the hospital or managed care organization. There is often a significant gap between what you thought you had agreed to and the actual contract that comes out of the hospital's legal department.

As you approach the contracting process, be sure that you take the following steps:

1. **Determine your objectives.** What do you want from the contract in terms of scope of duties, time commitment, compensation, reimbursement, hospital support (staff, facilities, and access to data), title, committee memberships, freedom to pursue other activities, and so on. If you have had specific discussions with hospital administrators on any of these matters, keep detailed notes to use in negotiations.

2. **Review the contract offered by the hospital.** There is no substitute for reading the agreements yourself. How does it compare with your objectives? What are the critical issues? What is left unsaid that should be addressed?

3. **Hire a lawyer.** Identify a lawyer with experience in reviewing hospital-based or managed care–based physician agreements. Discuss with your lawyer up front what you want from him or her and ask for a cost estimate. Do you want a simple contract review or do you want the lawyer to participate in contract negotiations?

4. **Prepare for negotiations.** What can you live with? What has to change? Make sure you can comply with the contract terms. If the contract contains insurance and indemnity provisions, review those with your insurance carrier to make sure you are covered. Ask your lawyer to advise you in detail about indemnity issues and litigation costs. If you intend to be an independent contractor, confirm with your lawyer or accountant that the contract achieves this result. Where possible, make sure your commitments in the hospital contract are limited to “best efforts” or “reasonable efforts” rather than to a categorical obligation. Make sure you understand how the contract will affect your other clinical activities (e.g., exclusivity and noncompete clauses).

5. **Negotiate the contract.** The most efficient approach is to sit down with the administrator in charge and go over your comments and concerns with the contract (including your lawyer’s comments). If necessary, get your lawyer involved.

6. **Sign the contract.** Make sure the final agreement contains all the changes you negotiated before you sign and make sure you keep a copy of the final signed contract. You should consider requesting support for continuing education for you and your team (e.g., one or more courses a year to improve scientific skills), secretarial support, extra resources as needed (e.g., molecular typing of microorganisms) for investigating special problems, a cost-of-living salary increase, and a monthly face-to-face review with a specific top administrator. The meeting with the administrator will give you a chance to review accomplishments and needs.

If you assume major administrative duties, consider including a statement that allows you to maintain your clinical skills, unless you are certain that you are leaving clinical medicine permanently. Maintaining an active clinical practice gives you flexibility (in case you do not like administrative duties), allows you to see firsthand where clinical problems are, and allows you to interact with the medical staff as a peer. Such interactions are useful for winning support for your programs.

**Conclusion**

Finally, remember that you should like your job. Infection control and the team work it entails can be exciting, at times exhilarating, and challenging. However, it often requires, to paraphrase Harry Truman, convincing people to do things they should already know to do. Be sure you are willing to take on this challenge before signing any contract.

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**References**