

Testimony of

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System**

**On Behalf of the Urban Health Care
Coalition**

**Regarding Health Care Acquired
Infections**

Before the

**Pennsylvania Senate Public Health and
Welfare Committee**

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On behalf of the Urban Health Care Coalition I want to thank the Senate Public Health and Welfare Committee for the opportunity to provide testimony on the issue of HAIs or health care-associated infections. My name is Dr. P.J. Brennan, and I am the Chief Medical Officer and Senior Vice President at the University of Pennsylvania Health System -- a 1500 bed system with three tertiary care hospitals and over 80,000 patient admissions. As a trained Infectious Diseases physician and former Chief of Health Care Quality and Patient Safety at Penn, I hope my testimony today will give you a clinical perspective of the unique challenges HAIs pose to patients and hospitals, as well as the measures we at Penn have undertaken to address this issue. In addition, the Coalition has developed policy recommendations on this topic, and I will briefly review them and answer any questions you may have.

We commend both the General Assembly and Governor Rendell for recognizing the importance of this patient safety issue. The attention given to this subject by these hearings and governmental action in Pennsylvania has provided a welcome impetus to change. There have been legitimate disagreements over methods, but let me be clear at the outset that there is only one side to this issue – the patient’s side. Any inference that government agencies, hospitals, health professionals, or experts in this field are adversaries is mistaken. I know of no one, in or out of health care, who does not want the best for patients.

Methods of antisepsis and infection prevention have been employed for more than 150 years and date to a time before medical scientists had even discovered the existence of bacteria. Organized infection prevention and control programs are a more recent phenomenon. In the 1970s the Centers for Disease Control and Prevention conducted a nationwide multicenter study of the effectiveness of such programs. The study was known by the acronym SENIC (which stands for the Study of the Effectiveness of Nosocomial Infection Control). That study established that hospitals with organized programs of infection surveillance and control and trained personnel had lower infection rates. SENIC also established minimum standards for staffing and identified the relative frequency of the four most common types of infection. In the 1970s, Urinary Tract Infections – infections of the bladder and kidneys – were found to cause approximately 40% of all infections identified. The next three infections in frequency were pneumonias acquired in hospitals, surgical site infections and bloodstream infections. Bloodstream infections and pneumonias consistently have had the highest mortality rates. Overall, about 5% of patients admitted to hospitals developed infections.

Over the past three decades, federal agencies such as the CDC, and its advisory Committee, HICPAC (which I chair), have studied the causes of infection and using the best scientific evidence available established guidance for hospitals and health professionals on practices related to all of the important issues in infection prevention including surveillance, hand hygiene, and the prevention of urinary tract, pneumonia, surgical and bloodstream infections. Professional societies such as The Association of Professionals in Infection Control (APIC) and the Society of Healthcare Epidemiology of America (SHEA) have fostered the development of professional standards of practice through research, science education and training. And hospitals that have applied the

principles of best practices in a consistent fashion have demonstrated significant successes. Hospitals participating in the CDC's National Nosocomial Infection Surveillance System, the only nationwide system of infection surveillance, have demonstrated significant reductions in infections throughout the history of that program. Despite this, more than 30 years later the relative frequency of these four infections is the same and a similar percentage of hospitalized patients develop infections.

While the common categories of infection are unchanged, the nature of the problems for which patients are hospitalized as well as the practice of medicine and nursing have changed profoundly in the past 30 years. The common categories of infection are unchanged because they reflect the vulnerability of the body sites in which we must make interventions in order to provide life saving support to critically ill patients. These interventions are double edged swords – providing life-saving treatments but posing infection hazards at the same time because they violate the body's natural defenses. We must always protect the airway and support breathing first – hence the need for breathing tubes and artificial respirators; we must support blood pressure and body fluids – thus the requirement for intravenous catheters; we must drain the body's waste so bladder catheters are necessary. Surgery may be necessary to save a life, but an open wound is at risk for infection. Today we are able to do so much more than in the past. These interventions must always be undertaken carefully and thoughtfully and with an awareness of the risks as well as the benefits to patients.

The problems that we face in preventing infections in hospitals are myriad and dynamic. As recent news accounts have demonstrated through the case of a patient with extremely drug resistant tuberculosis now isolated under health department order in Denver, resistant bacterium come in many forms. There is, I think, a widespread perception that methicillin resistant Staph aureus (MRSA) is perhaps the only hospital infection problem that we face. That is not so. Emerging drug resistance is the result of a dynamic interplay between disease causing bacteria the antibiotics we use to kill or control them. Since the discovery of Penicillin in 1937, we have known that bacteria develop resistance through their own mechanisms once exposed to antibiotics. Bacteria learn to find their way around antibiotics just as surely as a driver will find a new way home when faced with an obstacle in the road. Bacteria “learn” naturally as we expose them and the learning results in greater challenges for health care delivery in terms of the way we select, prescribe, administer and control antibiotics. MRSA emerged in the 1970s as the SENIC Study was being performed and other resistant germs have emerged later as we changed our antibiotic use to address emerging patterns of resistance.

With all of this as background I should add that every hospital, physician and nurse aspires to have no infections among their patients – zero tolerance. However, the notion that *every* infection is the result of poor care does not capture the complexity of medical care patients receive in a modern hospital. Every day, physicians and nurses make critical decisions in a matter of seconds with the primary goal of saving the patient's life. Life-saving care for medically complex patients often requires treatments that suppress a patient's ability to naturally combat common infections. For example, physicians must lower the body's natural infection-fighting defenses to successfully transplant an organ. Cancer patients often undergo months of intense chemotherapy and radiation treatments putting them in greater danger of acquiring opportunistic infections. The same is true for

diabetes patients, burn victims, and those with compromised immune systems. We should aim high in terms of infection prevention but face this issue with our eyes open and acknowledge that zero tolerance for infections does not mean zero infections.

The four major categories of infection are a good place to start but some of those categories are more amenable to prevention than others. Interventions related to bloodstream infection prevention have produced some remarkable results in Pennsylvania hospitals. Pennsylvania Hospital in our Health System recently had a period of zero blood stream infections anywhere in the hospital – not just in the intensive care units. While that hospital has experienced some bloodstream infections in subsequent reporting periods its rate remains at historically low levels. Other infections, such as urinary tract infections have been particularly intractable problems. Nonetheless, prevention practices exist for all of these infections – the science does not have to be replicated – and they should be implemented.

The Urban Health Care Coalition that I am speaking for today is comprised of major hospitals with the skill and expertise to provide advanced care and leadership on these issues. Coalition hospitals have already implemented many protocols and procedures to reduce the number of preventable HAIs. Some are as simple as reinforcing the importance of handwashing before and after patient encounters. In our Health System we are surveying patients on their observations of our staffs' hand hygiene practices and the results of these surveys indicates greater than 90% compliance – historically high levels. Some practices draw on years of research on “best practices” to prevent specific types of infections (e.g. surgical prophylaxis to prevent surgical site infections).

The University of Pennsylvania Health System has invested \$3 million in a new, state-of-the-art electronic surveillance system called TheraDoc that continuously monitors and analyzes patient data in real-time and sends out alerts to medical staff. This investment was made after careful consideration of the pros and cons of different surveillance systems, and we believe this is the system that best meets the needs of the organization. While this is in the early phases of implementation we expect this system to enhance our surveillance and response capability dramatically, while freeing up staff to be more engaged in prevention activities. Many Pennsylvania hospitals, including my own, have also implemented Rapid Response Teams, specially trained health care professionals deployed throughout the hospital to prevent and manage complications around the clock either independently or through involvement in the IHI 100,000 or 5 million lives campaigns. As a result of initiatives in staffing, electronic surveillance, and improved procedures, we are seeing dramatic reductions in preventable events, especially infections, in our hospitals.

There is and has always been an imperative to prevent infection and other preventable untoward events. The imperative exists for all of us in health care on moral grounds – the admonition to do no harm – but it also exists in the need to be good stewards of the limited resources to which we have access. While I want to make it clear that we view health care-acquired infections first and foremost as a patient safety issue, I also want to comment briefly on the costs that have been attributed to HAIs in the *Prescription for Pennsylvania* plan.

As I noted earlier the attention given to this issue by government has been welcomed by the professionals who work in this field. However, the development of public policy based on this data requires very careful scrutiny. The Office of Health Care Reform has concluded that HAIs cost the health care delivery system in Pennsylvania \$3.5 billion annually. According to CDC data this number would make costs associated with HAIs in Pennsylvania equal to 75% of the national estimated costs. In developing its savings estimates, the Office of Health Care Reform utilized data on the value of HAIs published by the Pennsylvania Health Care Cost Containment Council. While this data is an excellent starting point, in order to truly understand the realizable savings resulting from the elimination of health care-acquired infections, several additional factors must be considered. First and foremost, the \$3.5 billion figure is based on charges and not costs, and does not allow us to understand which costs can be attributable to the infection. Further, the data assumes that all HAIs are preventable and does not differentiate between infections acquired in the community from those in a health care setting.

There is still an opportunity to realize cost savings, but the extent of the impact of HAIs on cost is at best overstated and unlikely to achieve the sort of savings estimated by the data released so far. In fact, analysis of the PHC4 data done by the Coalition has shown that the cost of HAIs accounted for less than 1% of Pennsylvania's total health care costs.

The Urban Health Care Coalition would like to make the following recommendations as the Senate Public Health and Welfare Committee moves forward in developing a legislative proposal:

Specific clinical standards should not be placed in legislation or regulation.

Hospitals should be held accountable for their performance in infection prevention, as measured by the outcomes they achieve, but need to be allowed the latitude to respond to conditions as they exist in their organization. Hospitals and other health care facilities should be expected to plan, implement, survey and follow-up on infection strategies that are specific to the needs of their patient populations. Clinical conditions and practices for infection control can evolve quite rapidly and organizations must have sufficient degrees of freedom to deploy their resources appropriately.

Current CDC/HICPAC guidelines have used the best available evidence to support a variety of practices that have been proven to reduce the incidence of multi-drug resistant bacterial infections such as MRSA. However pending legislation in Pennsylvania mandates one size fits all approaches that are certain to have unintended consequences. One such example is a requirement for the screening of patients for MRSA upon admission, and randomized screening of patients and staff. A hospital would then be required to take actions necessary to prevent the spread of MRSA through isolation of patients and staff. This well-intentioned requirement will certainly add cost, and place demands on resources with very little return.

If staff is to be screened for MRSA, it begs the question as to what will be done with the information. This is reminiscent of the early era of HIV infection when there were calls for HIV screening of health care workers and the removal from the workforce of those found to be infected. We all carry germs on our skin and the membranes of our mouths

and other sites in our bodies. Many of these germs can cause disease. The issue is not whether we carry MRSA or other germs but whether we are adherent to infection control practices. If we remove from practice all staff that carries such germs we will decimate the staff of our hospitals. Indeed, if we screened everyone in this room and excluded everyone who carries disease causing bacteria most of us in this room would be removed.

Utilize clear and consistent methodology to measure and report HAIs

Quality measurement is the first step in addressing HAIs in hospitals. In 2006, Pennsylvania was the first in the nation to release a report detailing the number and rate of HAIs reported by each of the state's 167 acute care hospitals. However, for the measurement to be accurate and meaningful, the data must take into consideration the unique features and services offered at different hospitals before inter-hospital comparison. Allowances for risk factors -- including patient mix, co-morbidities, do-not-resuscitate orders, number of transfers, and the likelihood of an infection being acquired in the community -- should all be included in the reporting methodology. Until further refinements and reports have been made it will not be possible to make effective inter-hospital comparisons with such data.

Health care providers agree that more can be done to reduce hospital-acquired infections. In addition to the clinical implications, HAIs create a financial burden not just for patients but for hospitals as well. Research has shown that while most HAI cases significantly increase the length of stay and charges for patient care, hospitals actually realize cost savings by reducing infections.

In closing, we are committed to working with state officials and the legislature on this issue. We strongly support holding hospitals accountable for implementing best practice protocols to achieve HAI reductions, but we caution that overly prescriptive and costly mandates could, in fact, impede our progress in fighting ever-evolving infections.

Thank you very much for giving me the opportunity to testify before you today on behalf of the Urban Health Care Coalition. I would be happy to answer any questions you might have regarding my testimony.