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Methicillin-Resistant Staphylococcus Aureus (MRSA) Eradication and Positive Deviance: Experience at Philadelphia's Albert Einstein Medical Center

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MRSA is a strengthening enemy. A minor health concern 50 years ago, it is a growing cause of morbidity and mortality in hospitals today. The organism now affects at least 46 of every 1,000 patients in hospitals and nursing homes.[1] Each year, MRSA infections are associated with billions of dollars in direct costs and thousands of patient deaths.

Although basic procedures for preventing infection have existed for decades, too often health care professionals fail to adhere to them. For example, we know that following Centers for Disease Control and Prevention (CDC) hand hygiene guidelines[2] is one of the most effective means for avoiding the spread of MRSA, but fewer than 50% of health care workers follow the guidelines of washing hands before and after entering patients' rooms.[3] Physician compliance is even lower.

A typical institutional response to this type of issue is to target people whose behavior needs to change and tell them what they need to do differently. Interventions often include educational efforts, changing policies, and/or providing data. While such strategies are useful, they fail to incorporate one of an institution's most valuable resources – staff members whose practices and behaviors might serve as models. The term used to describe these individuals and their practices is Positive Deviance (PD).

Given that PD individuals have the same resources and are part of the same work "community," we wanted to know *how* these PDs managed to overcome the common barriers in order to achieve the desired outcomes. We determined that an answer may lie in observing, listening to, and learning from these PDs - then sharing those things the PDs found useful with other staff members.

The PD[4] approach is a process of self-discovery that promotes and facilitates positive behavior change within a work community. Steps in the PD process include:

- helping people define the problem
- helping the community identify the PDs (ie, the individuals who are already doing the right thing)
- learning about the practices, behaviors, and strategies that have enabled PDs to overcome the same barriers faced by everyone in the community. This involves listening to and observing the PDs, and creating a forum wherein the entire "community" can discuss the problem and potential solutions.
- helping the "community" design a method for spreading the PD practices throughout the organization.

Albert Einstein Healthcare Network (AEHN) was chosen as one of 6 beta sites in a Robert Wood Johnson-funded effort to eliminate transmission of MRSA by applying PD concepts to infection control. Six hospital units (the medical step-down unit, surgical ICU, transplant/oncology medical/surgical unit, the Drucker Brain Injury Unit at Moss Rehabilitation Hospital, the medical ICU, and a combined general medical/surgical unit) volunteered as pilot "communities" to test this new approach, called "**SMASH**" (**S**top **M**RSA **A**cquisition and **S**pread in our **H**ospitals).

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Unit staff members are encouraged to observe, discuss, learn, and share with others. As a result, they identify problems, create solutions, and identify and learn from PDs.

A distinctive feature of the PD approach is the way in which ideas generated by those "touching" the patient are rapidly translated into actions. Each week multiple groups from our workforce meet for brief "Discovery and Action Dialogues (DADs)." Trained facilitators capture ideas generated by discussions and ask the key DAD questions, such as, "What does this mean to you?" and, "What would it take to make that happen here and now?" Concrete actions are formulated with specific responsibilities.

Who should be involved in the DAD process? One of the few "rules" of the PD process is: "Nothing about me without me." This means that all stakeholders must be represented in order for DAD participants to recommend an action. We now ask ourselves, "Who ***doesn't*** need to be involved?" We have begun to look beyond the usual suspects (ie, nurses and physicians) and involve, for example, patient transporters, the microbiology lab, radiology, physical therapy, hospital clergy, and translators.

Many DAD actions have been implemented and, cumulatively, we believe the application of these PD practices will lead to sustained organizational change. One example is the new approach to the storage of disposable gowns. People entering the isolation room of a MRSA patient are asked to don disposable gowns. Early in the DAD process, lack of availability of these gowns at the point of entry into these rooms was identified as a barrier to consistent behavior. The DAD determined that the storage cabinets – opaque structures located inside patient rooms - were contributing to the problem. A clinician preparing to examine a patient in isolation might enter the room, open the cabinet, find it empty, and have to search for a gown elsewhere – or, as often happened, become frustrated and perform the task without donning a gown. In a series of small steps, gowns were 1) moved from the cabinets inside the room to boxes on tables outside the room, 2) wrapped individually and stacked on those tables, and 3) stored in clear cabinets on the walls outside the room, making it easy to check on supply and to anticipate the need for restocking.

AEHN's pilot units have begun to do surveillance cultures during patient admission, transfer, and discharge. They receive data about MRSA prevalence, transmission, and compliance with hand hygiene and gown/glove use on a regular basis. Patients identified as being colonized with MRSA are flagged in the clinical information system and placed in contact isolation.

We have learned that over 20% of patients in some of our units are colonized with MRSA on admission; that multiple prior hospitalizations, residence in nursing homes, and being on hemodialysis are significant risk factors for colonization; and that hospital transmission is clearly preventable. The PD process is helping AEHN attain its goal of caring for critically ill MRSA negative patients for many weeks at a time in an environment where other patients are colonized with MRSA - and have those patients **remain** MRSA negative at discharge. AEHN patients are already benefiting from the PD practices that the workforce community has put into action. Eventually, we will achieve the goal of SMASH - we will stop MRSA acquisition and spread in our hospitals.

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