Using the Matrix with Interns: System Based Practice and Practice Based Learning and Improvement Made Easy

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Learner audience: Department of Anesthesiology PGY1 residents and faculty

Needs Assessment*:* ACGME and ABA requirements for demonstration of professional development in regards to practice based improvement and systems based practice.

Curriculum: In 2006 the Department of Anesthesiology, Vanderbilt University Medical Center (VUMC) introduced a monthly meeting of the PGY1 class with faculty mentors to assess individual patient care incidents using the Matrix. The Matrix is an educational and quality improvement tool developed at VUMC (1) that uses the Institute of Medicine Aims for Improvement and the ACGME competencies as a structured analysis of patient care, generating specific points for practice based improvement. (Fig 1) At a monthly meeting, one intern presents a case for which, in his/her opinion, patient care was less than optimal. This exercise serves as an assessment of professional growth for all the competencies but especially in system-based practice. Once the analysis is done, the synthesis of all the Matrix cells culminates in "what is learned and what needs improvement" which is documented in practice-based learning and improvement section, emphasizing improvement points. The Matrix format organizes the presentation and discussion, highlighting strengths or deficiencies in key aspects of patient care. Each session ends with an action plan for improvement. All the Matrices are then aggregated for analysis where trends may be discovered for the department. This study complies with VUMC IRB policies and APS/NIH Guidelines.

Impact: This is a preliminary report of an addition to the PGY1 curriculum. Matrix-based case discussions have been well accepted by the intern class, and we expect that these focused exercises will improve practice based learning and improvement and facilitate understanding of the complex environment of hospital systems. By introducing this skill early in training, we hope to create a system for practice based improvement activities, providing a foundation for subsequent years in training and practice.

(1) Bingham, J., Quinn, D., Richardson, M, Miles, P. and Gabbe, S. Using a Healthcare Matrix to assess patient care in terms of aims for improvement and core competencies. J C Journal on Quality and Patient Safety, 31(2), 98-105 (2005)

(Figure 1) The Matrix (see next page)

Patient Healthcare Matrix: Care of Patient with….						
AIMS / Competencies	SAFE (Overuse, underuse, misuse)	TIMELY (Delay in hrs, days weeks)	EFFECTIVE (Outcomes, Evidence-based care)	EFFICIENT (Waste of resources)	EQUITABLE (Gender, ethnicity, race, SES)	PATIENT-CENTERED (Preference, needs, values)
Assessment of Care						
PATIENT CARE (Overall Assessment) Yes/No						
MEDICAL KNOWLEDGE and SKILLS (What must we know?)						
INTERPERSONAL AND COMMUNICATION SKILLS (What must we say?)						
PROFESSIONALISM (How must we behave?)						
SYSTEM-BASED PRACTICE (What is the process? On whom do we depend? Who depends on us?)						
Improvement						
PRACTICE-BASED LEARNING AND IMPROVEMENT (What have we learned? What will we improve?)						
Information Technology						

References

Safe: Avoiding injuries to patients from the care that is intended to help them.
Timely: Reducing waits and sometimes harmful delays for both those who receive and those who give care.
Effective: Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse, respectively).
Efficient: Avoiding waste, including waste of equipment, supplies, ideas, and energy.
Equitable: Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socio-economic status.
Patient-Centered: Providing care that is respectful of and responsive to individual patient preferences, needs and values and ensuring that patient values guide all clinical decisions.
Patient care: that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
Medical Knowledge: about established and evolving biomedical, clinical, and cognate sciences (e.g. epidemiological and social-behavioral) and the application of this knowledge to patient care.
Interpersonal and communication skills: that result in effective information exchange and teaming with patients, their families and other health professionals.
Professionalism: as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
System-based practice: as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.
Practice-based learning and improvement: that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvement in patient care.