

rotation allows residents to longitudinally observe treatment, patient response, and the course of illness. The longitudinal nature of the rotation makes it a more meaningful experience for trainees who aim to practice primary care.

Our second cohort of 8 first-year primary care residents is currently participating in this mental health rotation. Residents who completed the first rotation of this type evaluated its overall quality as excellent (mean score 5.17 on a 6-point Likert scale), and believed the rotation was of high educational value and utility.

The supervised rotation provides a robust educational experience for residents, facilitates integrated care for patients, and promotes ongoing primary care-mental health collaboration.

### Conclusions

We found our program's immersion schedule provides a facilitating framework for innovative, longitudinal care experiences with patients and for more meaningful

educational engagement in outpatient medicine. We expect it also will reinforce resident development of humanistic practice toward patients with psychiatric comorbidity.

Plans are underway to document the program's effectiveness and to demonstrate feasibility for adoption by other residency programs.

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### New Ideas

## Defense of the Measures: A Tool for Engaging Integrated Care Teams in Outcomes Measurement

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### Setting and Problem

Government agencies, insurance companies, health systems, and accreditors have developed numerous outcome measures that providers should consider and achieve. However, effective outcomes measurement faces barriers in teaching settings. In ambulatory practice, measurement tends to emphasize individual physician performance. This is problematic in ambulatory training practices, as residents are frequently absent for significant periods of time. In addition, measures selected are often chosen from outside the practice, and buy-in can suffer. This environment can lead to trainees and allied health providers accepting measures without critically analyzing what should be measured and why.

### Intervention

University of Cincinnati internal medicine residents rotate through a yearlong ambulatory long block, occurring from months 17 to 29 of residency. The practice is divided into 6 mini-teams with 4 residents, and 1 nurse per team. Other team members include pharmacists, educators, administrators, a social worker, and a nurse practitioner. The team meets weekly to review care delivery, including performance measures. Before the start of the long block, residents are assigned a single outcome measure and asked to perform a literature-based review of the measure, termed the Defense of the Measures (DOM). Measures assessed may include items currently being followed in the practice, or new measures the group deems worthy of review (TABLE). During long block orientation, residents present their review to the entire team, including nurses and allied health professionals. The review uses the PICOT question format (Population, Intervention, Comparison, Outcome, Time) to present evidence for or against a given measure, and

TABLE SELECTED MEASURES 2009–2014

Measure	2009–2010	2010–2012	2012–2013	2013–2014
<b>Diabetes Patients</b>				
Percentage HbA1c < 7%	Goal > 40%	Dropped		
Percentage HbA1c < 8%		Goal > 70%	Goal > 70%	Goal > 60%
Percentage HbA1c > 9%	Goal < 15%	Goal < 12%	Goal < 12%	Goal < 12%
Percentage BP < 130/80	Goal > 25%	Goal > 70%	Dropped	
Percentage BP < 140/90			Goal > 70%	Goal > 70%
Percentage LDL < 100 mg/dl	Goal > 36%	Goal > 70%	Goal > 60%	Goal > 60%
Percentage LDL > 130 mg/dl	Goal < 37%	Goal < 20%	Dropped	
<b>Prevention (entire population of patients)</b>				
Percentage DEXA scan			Women 65–85 with DEXA in 3 years	Women 65–80 with 1 DEXA ever
Percentage PSA screen	Men 50–74 with PSA screen in 1 year	Men 50–74 with PSA screen in 1 year (or declination noted)	Dropped	
Percentage HIV screen (ever)		Goal > 80%	Goal > 60%	Goal > 60%
Percentage hepatitis screen (born 1945–1965)			Goal > 30%	Goal > 30%
Percentage zoster vaccination ever		Goal > 50%	Goal > 50%	Goal > 60%
Percentage narcotics patients with OARRS report			Goal > 50%	Goal > 70%
Percentage COPD patient with PFTs in chart				Goal > 20%

Abbreviations: BP, blood pressure; LDL, low-density lipoprotein; DEXA, Dual Energy X-Ray Absorptiometry; PSA, prostate-specific antigen; OARRS, Ohio Automated Rx Reporting System; COPD, chronic obstructive pulmonary disease; PFTs, pulmonary function tests.

concludes with a recommendation whether the measure should be kept, changed, removed, or added. Next, the entire team discusses the evidence presented, and votes on what should be done. The results of this vote become the list of outcome measures the practice team will follow for the year. Each month the team receives data on these measures for the practice as a whole, the 6 mini-teams, and each individual physician.

### Outcomes to Date

Since the inception of DOM, outcomes measured in the practice have changed substantially (TABLE). The team has rapidly adapted to newly available information, including a change in glycemic targets (HbA1c levels), new vaccinations (herpes zoster), or new screening recommendations (HIV, hepatitis C). The team has added measures of importance based on local need, such as the Ohio Automated Rx Reporting System (OARRS), which is mandated for patients receiving chronic opioids, and local research findings, such as measuring pulmonary function testing in patients with chronic obstructive

pulmonary disease. In addition, the teams have reviewed and rejected several measures including prostate and lung cancer screening. All decisions about outcome measures will be revisited in the coming year in light of new evidence for or against a measure or changes in screening guidelines.

Ownership of the measures appears to have increased. After DOM, the team does not spend time arguing the value of measurement. The discussion during the voting process takes into account the viewpoint of multiple parties. For example, nurses often are tasked with the work a measurement creates (eg, injections), and they appreciate having a voice in the matter. Team members realize they cannot track and measure everything in every way, even if there is good evidence. For each measure, the team must assess its resources and the population served, and decide the benefit of the change. Virtually every new measure added has shown rapid increases in the years that follow. For example, herpes zoster vaccination increased from 10% to 49% 2011–2013, and OARRS reporting increased from 0% to 67% 2012–2013. In

addition, several long block physician graduates have developed and managed outcome measures within their postresidency practice.

### Conclusion

The DOM intervention empowers practice team members to critically examine the outcomes they are measured by, and use these choices to guide improvement work. It also teaches improvement practice related to outcomes measurement and prepares graduates to use these skills in practice.

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### New Ideas

## Adapting ACGME-Accredited Training to Meet Changing Demands of the Workforce: The NuRad Pathway

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### Setting and Problem

Nuclear medicine (NM) faces significant challenges as a specialty. Fewer physicians are choosing to enter NM, and employment prospects for graduates are increasingly limited. Additional challenges include declining reimbursement, “turf” battles with specialties that have assumed some of the areas previously the domain of NM, and difficulties with implementation of translational research. Rapidly proliferating technology and hybrid imaging are significantly changing the scope of knowledge, requiring greater understanding of 3-dimensional anatomy, cross-sectional imaging techniques, physics, and clinical applications. NM residency alone may not be adequate preparation, and NM programs are having difficulty attracting top candidates.

In addition to being a core specialty, NM also is practiced as a subspecialty by diagnostic radiologists, some of whom, particularly in private practice, are the primary imaging specialists for the patient population needing NM. Diagnostic radiology (DR) residency requires 700 hours of focused NM training, but this may not be adequate to prepare a general radiologist for the scope of today’s NM

practice as the array of clinically relevant nuclear and molecular imaging and therapeutic agents continues to expand. Board-certified diagnostic radiologists can earn American Board of Nuclear Medicine (ABNM) eligibility by completing an additional year of NM training, but at that point of their career they do not have any remaining eligible years for graduate medical education funding. Alternatively, since July 2010 DR residents have been allowed up to 16 months to subspecialize during their residency.

### Intervention

To attract the highest-quality residents and increase the number of diagnostic radiologists optimally trained to provide quality NM care, the University of Arkansas for Medical Sciences proposed a new “pathway of the future.” A categorical position—“NuRad”—was created to provide integrated DR/NM training within a 5-year curriculum. A clinical year is followed by 32 months of DR and 16 months of NM training. This includes 4 months in DR rotations as a postgraduate year (PGY)-2, PGY-3, and PGY-4, and 12 months in NM rotations as a PGY-5. Our program’s call system provides continuous application of DR knowledge and skills across all modalities and subspecialties, so participation in call throughout the final year of training

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