

Cost Display in Real Time Electronic Order Entry: Practice Pattern Changes and Physician Attitudes & Beliefs About 'Cost' in Medical Practice

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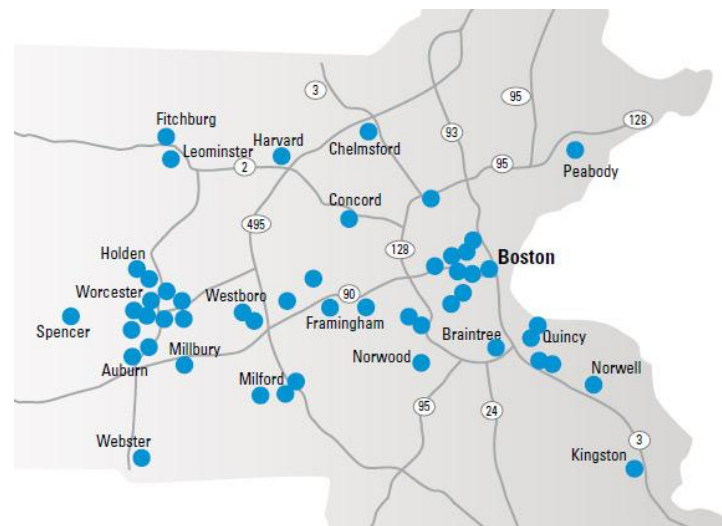
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Atrius Health – Background

- Non-profit alliance of seven leading independent medical groups
 - Granite Medical
 - Dedham Medical Associates
 - Harvard Vanguard Medical Associates
 - Reliant Medical Group
 - Southboro Medical Group
 - South Shore Medical Center
 - VNA Care Network and Hospice
- Provide care for ~ 1,000,000 adult and pediatric patients in almost 50 **ambulatory** sites
- 1000 physicians, 1450 other healthcare professionals across 35 specialties
- NCQA-Level 3 Certified Patient-Centered Medical Home at all Groups
- Long history with global payments, currently managing ~50% of our patients with global payments; strong infrastructure to manage risk
- All Groups on EHR, majority on EpicCare
- One of first to sign BCBSMA Alternative Quality Contract (AQC); One of 32 Medicare Pioneer ACO's nationally



Background

- Physicians are under increasing pressure to control costs of healthcare; specifically to reduce unnecessary costs
- Physicians generally are not aware of the costs of their orders
- No cost information at Epic order entry (except some meds)
- Need to address overuse in lab testing

Objectives

- Cultural and educational development around reduction of misuse/overuse in the healthcare system
 - In general: cost awareness
 - Specifically: relative cost of lab orders
- To evaluate:
 - Physician lab ordering behavior change after the implementation of the cost display
 - Physicians beliefs and attitudes about the role of cost in healthcare decision making, specifically about cost knowledge

Methods

1. Lab ordering behavior: Interrupted time series analysis with parallel control group
2. Culture and Education: Physician paper-based survey about cost-related attitudes and beliefs

The Intervention: “Real time” average range for 2011 Medicare reimbursement rate displayed in Epic order entry screens

Control (other 4 Medical Groups, at the time):

Code	Name	Type
84460A	ALT (SGPT)	LAB

Intervention (only 1 Medical Group able to view costs):

Code	Name	Type
84460A	ALT (SGPT) (Cost \$5 - \$10)	LAB

- 21 lower cost tests (< \$40.00) and 6 higher cost tests (> \$40.00)
- Passive display of information; not a hard-stop
- No embedded clinical decision support
- Primary care and relevant specialties were able to view costs

Lab Costs Displayed

Lower Cost (<\$40)

N = 21

General chemistries (ALT, basic metabolic panel, comprehensive metabolic panel, creatinine, electrolytes, glucose, HbA1c, lipid profile, PSA, TSH, BUN)

Iron binding profile, ferritin

Hemogram

Sedimentation rate

Pap smear

Strep throat screen

Tissue transglutaminase

Urine microalbumin

Urinalysis

Urine culture

Higher Cost (>\$40)

N = 6

Alpha-fetoprotein

Brain natriuretic protein

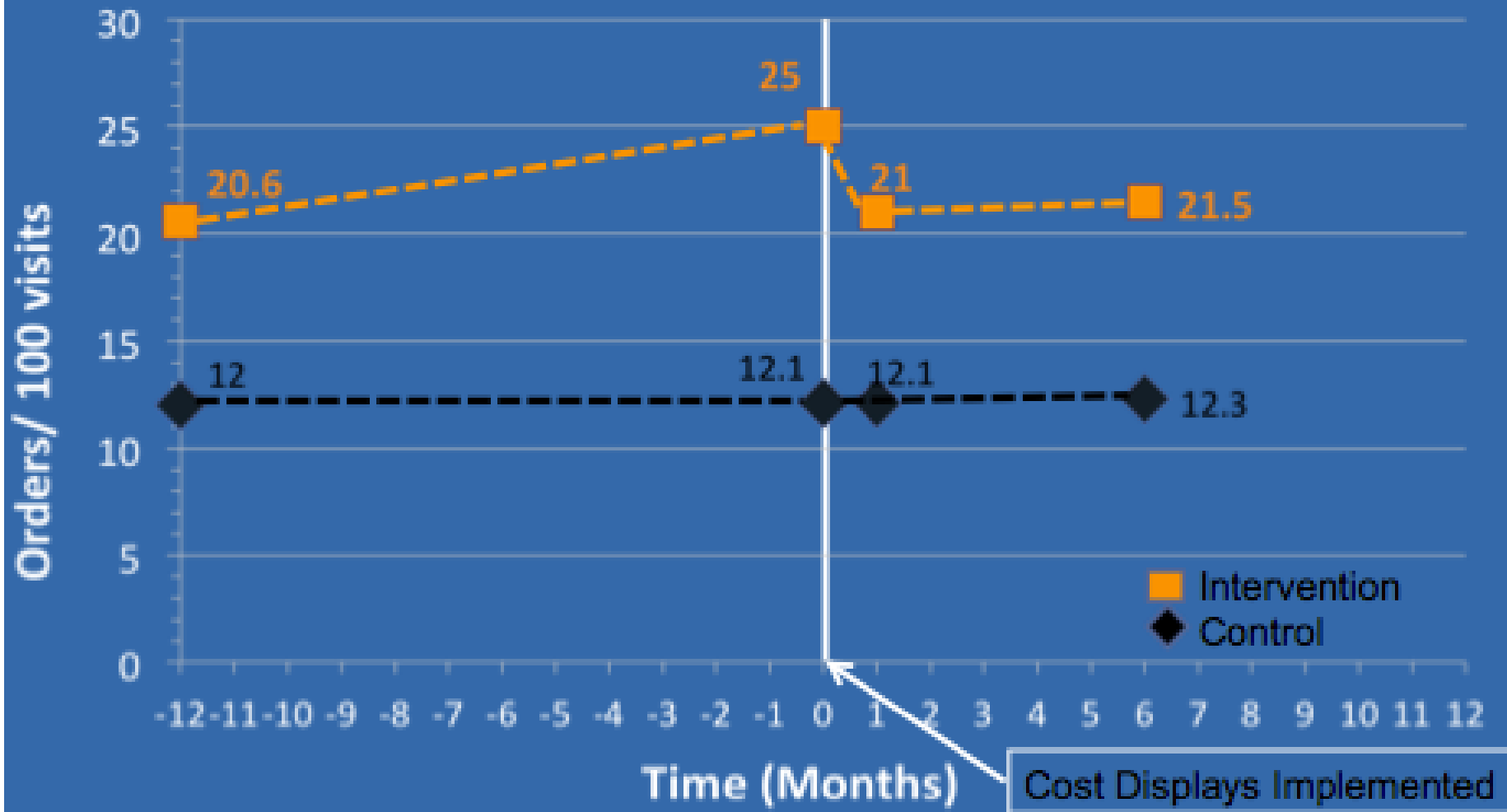
Chlamydia/GC genital

Chlamydia/GC urine

Parathyroid hormone

Vitamin D

How the Model Worked



Lower Cost Tests

- ❑ **8 of 21 (38%) tests show significant reduction**
 - ❑ **(ALT, Cr, electrolytes, glucose, lipid profile, TSH, HbA1c, BUN)**
- ❑ **16 of 21 (76%) tests show negative directional trend**
- ❑ **Tests which were reduced tended to be high volume tests**
- ❑ **Magnitude of Effect: Reduction of 1-2 orders/100 visits**

Survey

- Surveyed 1084 clinicians (NP, PA, MD, DO) across Atrius health
 - 7 months following implementation of the displays
 - 65% response rate
- Assessed all clinicians' perspective on cost reduction
- Assessed intervention clinicians' perspective on the lab cost displays

Perceived Impact of Cost Displays (Intervention Clinicians, Only)

Survey item	% Strongly or Somewhat Agree
The cost displays improved my knowledge about the relative costs of lab tests	79%
The cost information displayed within Epic has improved my capacity to provide high value care	41%
I would like additional cost information displayed for medications and imaging studies	82%

Survey: Specialty Perspective on Costs

Survey Item	% Agree or Strongly Agree				
	All Groups (n= 705)	Primary Care (n=375)	Medical Subspecialty (n=130)	Surgical Specialty (n=105)	OB/GYN (n=95)
There is a need for cost containment in today's environment	99%	99%	98%	97%	95%
It is important for individual clinicians to consider costs when developing care plans	88%	89%	88%	86%	89%
It is inappropriate for anyone other than the patient or clinician to decide if a treatment is worth the cost	62%	59%	68%	65%	58%
I have a firm understanding of the relative costs of care	54%	55%	55%	56%	46%

Discussion:

Lab-ordering after cost display

▣ Impact on test-ordering

- ▣ Decreased ordering of lower cost / higher volume tests
- ▣ Limited impact on higher cost tests
- ▣ No evidence of increased test ordering

▣ Implementation required minimal resource outlay

▣ Clinician feedback: Little negative; more positive

Discussion:

Clinician Survey

- ▣ Clinicians support cost playing a role in the development of patient care plans
 - ▣ Perceptions similar across specialties
 - ▣ Some variation across medical groups
 - ▣ Wary of outside influences

- ▣ Lab cost displays increase perceived knowledge of relative costs of care

Implications

- Lab cost displays can serve as educational tools about the relative costs of care
- Increased clinician awareness of costs during a patient encounter can decrease unnecessary utilization of healthcare resources
- Clinicians at Atrius want to better understand relative costs of their interventions and they support the integration of cost considerations into the clinical care setting, but are wary of outside influence

Discussion

- What are you doing at your Groups? What's your experience with teaching clinicians about cost implications of their practice?
- How do you consider prices and costs differently?
- What prices/costs do you share?
- How do you communicate relative prices/costs with your patients?
- Other questions? Concerns?