

Improved Prescribing Through Education and Reporting

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Disclosures

- Greg Low, RPh, PhD
 - Currently employed by Mass General Brigham Health Plan
 - Owned stock in Hologic within the last 12 months
 - No additional disclosures or financial conflicts

Views expressed are my own and do not represent my former employer, Massachusetts General Hospital, nor my current employer, Mass General Brigham Health Plan.

Proprietary trade names minimally used for report examples

The Presenter and Presentation

- Greg Low was the Director of the Massachusetts General Physicians Organization's Pharmacy Quality and Utilization Program from 2007 to 2023
- Substantial portions of this presentation were adapted from "Improving Drug Utilization with Prescriber Feedback Reports" presented at the Academy of Managed Care Pharmacy (AMCP) conference at National Harbor, MD in October 2022.

Background

- Integrated Delivery Network (IDN) & Accountable Care Organization (ACO) role in managing utilization
 - Commercial risk contracts (e.g. Massachusetts BCBS Alternative Quality Contract)
 - Medicare Shared Savings Program MSSP covers Part B; not Part D
 - MassHealth (Medicaid) Payment & Care Delivery Innovation (PCDI)
 - Employee coverage
- Pay for performance measures encouraged
 - Increasing generic drug use (% generic)
 - Reducing pharmacy costs
 - Improving quality (% with blood pressure control, HbA1c, etc)

Improvement efforts

- Academic detailing
- Guidelines for new drugs
- Decision support
- Therapeutic substitution
- Prescriber feedback reports

- Limitations of traditional Rx utilization reports
 - “My patients are sicker”
 - Fifty percent flagged as above average

Goals of feedback reports

- Supports the clinical improvement goals of providers and health care organizations
- Goals include
 - Ensuring minimum standards
 - Quality Improvement
 - Meeting quality or resource use performance targets
 - Explaining variation

Benefits of ACOs reporting

- Rich dataset that you cannot get from claims alone
 - Access to electronic medical record (EMR) and claims data
- Providers collaborate on appropriate peer comparators
- Reports cover multiple payers
- Prescribers may trust internal reports more than external reports
- ACO risk should mean responsibility for management

Implementing feedback reports

- Outcome variables for adjusted reports
 - Generic rate – dichotomous variable requires logistic models
 - Average cost – costs are not normally distributed
- Outcome variables for unadjusted reports
 - Opioid measures – aim to improve performance
 - Diabetes prescribing – sample sizes preclude statistical comparisons

Implementing feedback reports

- What factors/predictors go in a model?
 - Demographics (age, sex, median income by zip code)
 - Coverage (insurer)
 - Select problem-list conditions (hypertension, diabetes)
 - Acuity (Charlson comorbidity index, Higashi, DxCG, homegrown [ex. Linscore])

Models produce expected values

- Prescribers are shown
 - Observed (actual) values
 - Expected (modeled) values
 - Confidence intervals around the expected value
- An expected value means, given what we know about your patients and compared to your peers, we expect your % generic rate to be X.
- If your observed value is outside the confidence interval, then your prescribing likely differs from your peers.

Audience Question #1

- Regarding your skill driving a car are you:
 1. Better than average
 2. Average
 3. Worse than average

What does “different” mean?

- The prescriber appears statistically significantly different than their peers, after controlling for patient factors.
- A significant difference between observed & expected starts a conversation
 - Variation doesn't tell us what is appropriate or inappropriate
 - Higher use of one service may decrease use of another (e.g. higher pharmacy may prevent hospitalizations)
 - Unmeasured factors can trigger significance
 - Unmeasured patient factors (e.g. patients who prefer brands)
 - Unmeasured provider factors (e.g. some prescribers collaborate with NPs/PAs)

Audience Question #2

- As a patient, would you want to see a clinician who is:
 1. A high resource outlier
 2. An average resource utilizer
 3. A low resource outlier

Variation Suite PCPs for MG Medical Practice 1

From Jul 1, 2020 to Jun 30, 2021

Provider	Imaging		Pharmacy		Labs	ED
	Appropriateness	Utilization	Generic Rate	Cost	All	Visits
PROVIDER 1	■	■	▲	■	▲	■
PROVIDER 2	■	▲	■	■	▲	■
PROVIDER 3	■	■	■	▲	▲	■
PROVIDER 4	■	■	■	▲	▲	▼
PROVIDER 5	■	▲	■	■	▲	▼
PROVIDER 6	■	▲	■	■	▼	■
PROVIDER 7	■	■	■	■	▲	■
PROVIDER 8	■	■	■	■	▼	■
PROVIDER 9	■	■	▼	■	▲	▲
PROVIDER 10	○	■	○	▼	▼	▼
PROVIDER 11	■	▼	■	■	▼	■
PROVIDER 12	■	■	■	■	▼	▲
PROVIDER 13	■	▼	■	■	▲	▼
PROVIDER 14	▲	■	▲	▼	▲	▲
PROVIDER 15	■	▼	■	■	▲	■
PROVIDER 16	■	■	■	■	▲	▲
PROVIDER 17	■	▲	■	■	▲	▼
PROVIDER 18	▲	■	▲	▲	▲	▲
PROVIDER 19	■	■	■	▲	▲	■
PROVIDER 20	■	■	■	■	▲	▼

Variation Suite PCPs

for MG Medical Practice 1

From Jul 1, 2020 to Jun 30, 2021

Provider	Imaging		Pharmacy	
	Appropriateness	Utilization	Generic Rate	Cost
PROVIDER 1	■	■	▲	■
PROVIDER 2	■	▲!	■	■
PROVIDER 3	■	■	■	▲!
PROVIDER 4	■	■	■	▲!
PROVIDER 5	■	▲!	■	■
PROVIDER 6	■	▲!	■	■
PROVIDER 7	■	■	■	■
PROVIDER 8	■	■	■	■
PROVIDER 9	■	■	▼!	■
PROVIDER 10	○	■	○	▼

Pharmacy Generic Variation for MG Medical Practice 1

from Jul 1, 2020 to Jun 30, 2021

Provider	PCP				Tendency to Prescribe Generic					Specialist				Tendency to Prescribe Generic				
	# of RX	Observed Generic	Expected Generic	O/E Ratio						# of RX	Observed Generic	Expected Generic	O/E Ratio					
PROVIDER 1	350	100.0%	97.2% (97.0%-97.4%)	1.03						81	100.0%	92.1% (91.5%-92.6%)	1.09					
PROVIDER 2	51	100.0%	97.9% (97.6%-98.1%)	1.02						37	100.0%	92.5% (91.7%-93.3%)	1.08					
PROVIDER 3	584	98.8%	96.8% (94.0%-99.7%)	1.02						218	87.6%	91.8% (82.9%-100.7%)	0.95					
PROVIDER 4	760	97.8%	96.6% (95.3%-97.8%)	1.01						313	86.7%	91.3% (86.7%-96.0%)	0.95					
PROVIDER 5	277	98.6%	97.7% (97.4%-98.0%)	1.01						186	83.0%	92.3% (84.1%-100.6%)	0.90					
PROVIDER 6	601	98.2%	97.4% (93.6%-101.3%)	1.01						353	87.4%	92.4% (84.6%-100.1%)	0.95					
PROVIDER 7	1,037	97.7%	97.0% (95.7%-98.3%)	1.01						401	89.9%	91.5% (87.1%-95.8%)	0.98					
PROVIDER 8	1,568	97.4%	96.9% (94.9%-98.9%)	1.01						426	91.8%	91.9% (84.7%-99.1%)	1.00					
PROVIDER 9	302	98.1%	97.6% (93.2%-102.0%)	1.00						136	100.0%	92.6% (92.0%-93.2%)	1.08					
PROVIDER 10	47	97.9%	97.6% (91.6%-103.6%)	1.00						65	100.0%	92.1% (91.5%-92.8%)	1.09					
PROVIDER 11	94	97.9%	97.7% (91.7%-103.7%)	1.00						76	92.7%	92.1% (81.2%-103.0%)	1.01					
PROVIDER 12	617	96.7%	96.7% (93.7%-99.7%)	1.00						434	85.6%	91.4% (84.8%-97.9%)	0.94					
PROVIDER 13	57	98.3%	98.5% (97.9%-99.1%)	1.00						31	96.9%	93.6% (93.4%-93.8%)	1.04					
PROVIDER 14	489	96.4%	97.3% (94.0%-100.7%)	0.99						292	81.3%	92.1% (84.5%-99.8%)	0.88					
PROVIDER 15	411	96.7%	97.7% (94.7%-100.8%)	0.99						180	85.3%	92.4% (76.4%-108.4%)	0.92					
PROVIDER 16	702	95.8%	97.2% (95.0%-99.4%)	0.99						308	82.4%	91.8% (84.4%-99.2%)	0.90					
PROVIDER 17	591	95.0%	97.3% (95.2%-99.5%)	0.98						233	91.7%	92.3% (89.2%-95.5%)	0.99					
PROVIDER 18	1,422	94.4%	97.2% (93.8%-100.5%)	0.97						580	90.2%	92.2% (88.6%-95.7%)	0.98					
PROVIDER 19	463	93.9%	96.9% (90.9%-103.0%)	0.97						274	93.8%	91.4% (85.7%-97.2%)	1.03					
PROVIDER 20	0	0.0%	0.0% (0.0%-0.0%)	Not enough data						0	0.0%	0.0% (0.0%-0.0%)	Not enough data					

PCP

Provider	# of RX	Observed Generic	Expected Generic	O/E Ratio	Tendency to Prescribe Generic		# of RX
					0	2	
PROVIDER 1	350	100.0%	97.2% (97.0%-97.4%)	1.03			81
PROVIDER 2	51	100.0%	97.9% (97.6%-98.1%)	1.02			37
PROVIDER 3	584	98.8%	96.8% (94.0%-99.7%)	1.02			218
PROVIDER 4	760	97.8%	96.6% (95.3%-97.8%)	1.01			313
PROVIDER 5	277	98.6%	97.7% (97.4%-98.0%)	1.01			186
PROVIDER 6	601	98.2%	97.4% (93.6%-101.3%)	1.01			353
PROVIDER 7	1,037	97.7%	97.0% (95.7%-98.3%)	1.01			401
PROVIDER 8	1,568	97.4%	96.9% (94.9%-98.9%)	1.01			426

Pharmacy Generic PCP Detail Report

for MG Medical Practice 1

Provider 5

from Jul 1, 2020 to Jun 30, 2021

RANK BY BRAND	CLASS	#Rxs	#Brand Rxs	%Generic	Brand Examples
1	THYROID PREPARATIONS	26	16	38.5%	SYNTHROID
2	ANTICOAGULENTS/ANTIPLATELET AGENTS	6	6	0.0%	XARELTO
2	URINARY INCONTINENCE AGENTS	6	6	0.0%	MYRBETRIQ
3	BETA BLOCKERS CARDIAC SELECTIVE	26	3	88.5%	TOPROL XL
4	DERMATOLOGICAL AGENTS	1	1	0.0%	DRYSOL

Pharmacy Cost Variation

MG Medical Practice 1

from Jul 1, 2020 to Jun 30, 2021

Tendency to Prescribe Any Medication

Pharmacy Cost per Patient

Provider	Modeled Patients	Observed	Expected	Odds Ratio	95% CI of Odds Ratio					Observed Avg Cost per Pt	Expected Avg Cost per Pt	Rate Ratio	95% CI of Rate Ratio							
		Patients w/Rx	Patients w/Rx		0	0.2	0.4	0.6	0.8				1	1.2	1.4	1.6	1.8	2		
PROVIDER 1	19	18	15	3.16							\$900.15	\$203.95	3.23							
PROVIDER 2	34	34	30	2.70							\$722.60	\$223.42	2.76							
PROVIDER 3	136	136	122	1.75							\$522.51	\$253.02	1.79							
PROVIDER 4	201	199	193	1.34							\$345.77	\$251.66	1.37							
PROVIDER 5	140	138	134	1.31							\$305.38	\$223.52	1.34							
PROVIDER 6	129	128	124	1.10							\$254.47	\$222.72	1.13							
PROVIDER 7	68	69	67	1.05							\$260.21	\$237.49	1.08							
PROVIDER 8	116	115	113	1.03							\$266.08	\$246.23	1.05							
PROVIDER 9	50	50	49	0.99							\$175.93	\$228.04	1.01							
PROVIDER 10	79	79	79	0.98							\$274.08	\$250.43	1.00							
PROVIDER 11	47	47	47	0.90							\$195.75	\$237.74	0.92							
PROVIDER 12	98	98	98	0.90							\$228.13	\$241.03	0.92							
PROVIDER 13	59	59	59	0.82							\$220.73	\$250.10	0.84							

Pharmacy Cost PCPs Detail Report

MG Medical Practice 1

Provider 5

From: Jul 1, 2020 to Jun 30, 2021

Total Cost Rx \$71,584.00

Rank	Drug Name	Total Cost for Rx	# Rxs	Total Cost (%)
1	XIFAXAN	\$28,754.08	11	40%
2	PENTASA	\$8,092.85	2	11%
3	ELIQUIS	\$4,034.01	3	6%
4	ATORVASTATIN CALCIUM	\$2,730.84	265	4%
5	ROSUVASTATIN CALCIUM	\$2,599.85	111	4%
6	COLCRYS	\$1,689.53	4	2%
7	LEVOTHYROXINE SODIUM	\$1,104.36	56	2%
8	IRBESARTAN	\$944.50	39	1%
9	VALSARTAN	\$912.44	16	1%
10	METOPROLOL SUCCINATE	\$789.50	12	1%

Content delivery

- In-person delivery during pharmacy academic detailing
 - Offers immediate support
 - Prompts group discussions
 - Often requires follow-up to investigate differences
- Virtual delivery in Business Intelligence Portal
 - Integrates pharmacy, imaging, laboratory use reports
 - Links to drill-down reports
 - Timely - reports are provided shortly after modeling

Audience Question #3

- In your current job, how comfortable would you be in sharing your job performance metrics with your peers?

Do feedback reports work?

- Studies show that Physician Feedback Reports are effective (Ivers, et al., 2012), but outcomes vary widely due to implantation choices (McNamara, et al. 2016).
- Local evidence showed that adding variation reporting to radiology order entry (ROE) reduced utilization and variation (Weilburg, et al. 2017).

Do feedback reports work?

- Individual stories are compelling, but efficacy is difficult to assess outside controlled research
- Initial and long-term effects may vary
 - Durability of effect is unknown

Challenges

- Attribution
 - Primary care providers (PCPs) vary in willingness to renew specialist-initiated therapies
 - PCPs who refer to specialists early versus late
- Peer comparisons
 - Who is the peer for a pediatric endocrine specialist?
 - Pediatricians?
 - Endocrine?
 - Pediatric specialist?
- Specialty & biologics are driving trend, but order frequency (n) is too low for statistical power
- ACO medical management influences utilization not unit cost

Challenges (continued)

- Non-normal distributions are more challenging to model
 - % generic, likelihood to prescribe and average cost per Rx are non-normal
- Reporting period
 - Short evaluation periods are timely and responsive to change
 - Long evaluation periods provide the certainty of larger datasets
- Reporting frequency
 - Frequent reports are burdensome to generate, distribute and review
 - Infrequent reports limit opportunities to improve

Challenge (continued)

- Asymptotic performance
 - PCPs average 95% generic utilization for their own prescriptions when excluding drugs that lack generic therapeutic alternatives
 - Remaining brand use is predominantly appropriate use of third-line agents

Ensuring reports are used

- Fiscal incentive for opening report
- Integration into academic detailing
- Multi-topic reports flags prescribers to review most relevant topics

Resources

- Statistician
 - Data Analyst/Scientist
 - Clinical input for design and quality assurance (QA) review
 - Business Intelligence interface design & security
 - Project management
-
- Model and interface builds require time, effort, & expertise
 - Substantial economies of scale

Looking ahead

- Transitioning from claims to electronic medical record (EMR) data
- Transitioning from institution-based to system-wide reporting
- Potential applications
 - Identify education and training needs
 - Base prior authorization on performance to reduce low-value prior authorizations (e.g. focus on high utilizers)

Questions & Discussion

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