



# Learning from Primary Care Meaningful Use Exemplars



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# BACKGROUND



# “Meaningful Use”

- Use of certified EHR technology to submit CQM data is 1 of 3 major components of HITECH MU
- The ultimate goal of HITECH is to significantly improve care through MU of EHRs
- Submission of CQM data will not improve care
- Information is needed on how PCPs can “meaningfully use” EHRs to improve care—no large studies in primary care practice



# Study of MU “Exemplars”

## Exemplar:

- Admired person or thing considered an example that deserves to be copied



## MU Exemplar:

- A PPRNet PCP that has certified for Stage 1 MU and achieved high performance on primary care relevant 2014 CMS CQM



# Mixed Methods Study

- EHR-based CQM performance assessment
- A provider survey about EHR use and QI strategies
- Quantitative cross-sectional analyses between CQM performance and survey responses
- Focus groups among MU exemplars to triangulate quantitative findings



# METHODS



# Setting

- PPRNet--a national EHR-based PBRN
- Regular EHR data extracts for QI and research
- Reports on more than 60 CQM, 23 of which are comparable to the 2014 CMS CQM
- Practices sending data 10-1-2013 and whose providers had certified for Stage 1 MU eligible



# PPRNet MU CQM Report

CMS ID:	CMS MU Clinical Quality Measures (2014):	Number of eligible patients	Percent meeting criterion
122	<a href="#">Diabetes Mellitus: Hemoglobin A1c Poor Control</a>	404	74.50%
163	<a href="#">Diabetes Mellitus: LDL-C Management</a>	341	54.84%
123	<a href="#">Diabetes Mellitus: Foot Exam</a>	404	48.02%
131	<a href="#">Diabetes Mellitus: Dilated Eye Exam</a>	404	23.51%
134	<a href="#">Diabetes: Urine Protein Screening</a>	404	64.60%
165	<a href="#">Controlling High Blood Pressure (BP)</a>	1505	89.57%
182	<a href="#">Ischemic Vascular Disease (CHD or atherosclerosis): LDL control</a>	320	58.13%
164	<a href="#">Ischemic Vascular Disease (CHD or atherosclerosis): Use of Aspirin or Another Antithrombotic</a>	365	80.27%
135	<a href="#">Heart Failure (HF): ACE Inhibitor or ARB Therapy</a>	62	58.06%
144	<a href="#">Heart Failure (HF): Beta-Blocker Therapy</a>	62	64.52%
153	<a href="#">Chlamydia Screening for Women</a>	101	1.98%
124	<a href="#">Cervical Cancer Screening</a>	758	65.17%
125	<a href="#">Breast Cancer Screening</a>	1010	79.21%
130	<a href="#">Colorectal Cancer Screening</a>	1729	71.43%
147	<a href="#">Influenza Immunization</a>	3198	33.80%
127	<a href="#">Pneumonia Vaccination Status for Older Adults</a>	1298	81.20%
2	<a href="#">Depression screening (adults)</a>	2923	57.06%
128	<a href="#">Anti-depressant Medication Management</a>	797	62.61%
138	<a href="#">Tobacco Use Screening and Cessation Intervention</a>	2923	94.56%
126	<a href="#">Use of Appropriate Medications for Asthma</a>	481	45.95%
154	<a href="#">Appropriate Treatment for Children with Upper Respiratory Infection (URI)</a>	9	66.67%
156	<a href="#">Use of High-Risk Medications in the Elderly</a>	1216	73.68%
179	<a href="#">Warfarin Time in Therapeutic Range</a>	60	41.67%



# CQM Performance Assessment



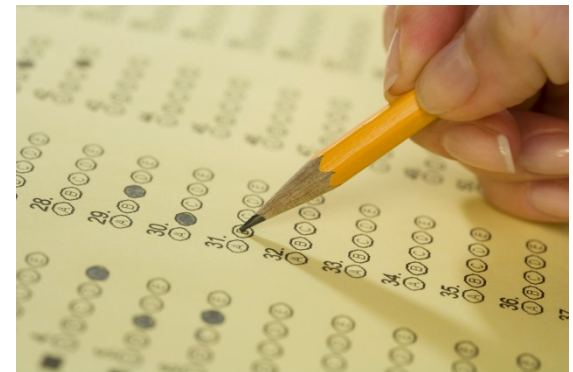
- Oct 1, 2013 EHR data extract
- Practice level performance for 21 CQM (% of eligible patients meeting measure)
- Means (S.D.) 21 CQM across all practices
- SQUID --Summary Quality Index (% eligible measures each patient met)
- Practice level SQUID—mean patient SQUIDs



# Provider Survey

Guided by two theoretical frameworks:

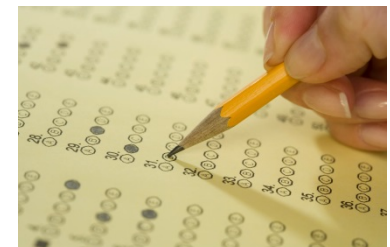
- PPRNet QI model *Improving Primary Care through Health Information Technology (IPC-HIT)*
- *Consolidated Framework for Implementation Research (CFIR)*





# Provider Survey

- Five iterative rounds of question development and refinement
- 100 Specific ?s relevant to 21 CQM;
- 27 General ?s about EHR use, practice QI
- Online survey tool--REDCAP
- Pilot tested by 7 PPRNet members not participating in project
- Conducted Nov-Dec 2013

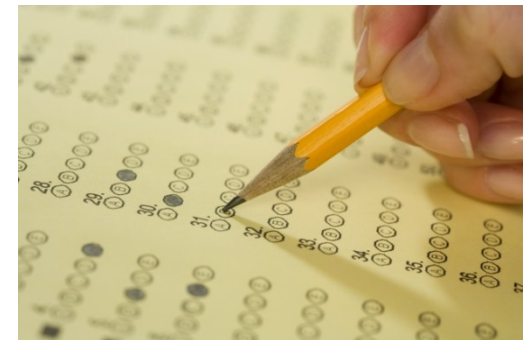




# Specific Questions

For each CQM:

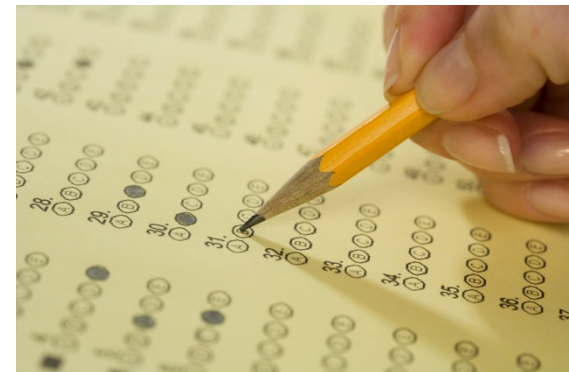
- Provider agreement
- Staff education
- Use of CDS (EHR reminders)
- Standing order
- EHR embedded patient education





# General Questions

- EHR Functionality
- Clinical QI Strategies
- Beliefs about EHR and QI Activities
- Administrative QI Strategies





# Quantitative Analyses

- Quantified categorical items on 0-100 scale
- Mean item scores by practice
- Partial multivariate adjusted correlations between mean specific item scores and CQM measure performance
- Partial multivariate adjusted correlations between mean general item scores and SQUID



# “Exemplars” Focus Groups

- Practices in ~ top tertile for the CQM-SQUID as of 10-1-2013
- Focus groups Jan 25, Feb 1 or Feb 8, 2014 in three cities
- Reviewed quantitative findings and asked for comments on validity and context-specific examples from their practice





# Qualitative Analyses

- Digital audio files transcribed imported to NVivo 10.0 as were focus group field notes
- Two independent analysts
- Deductive, inductive (constant comparison), micro-interlocutor, immersion and crystallization approaches

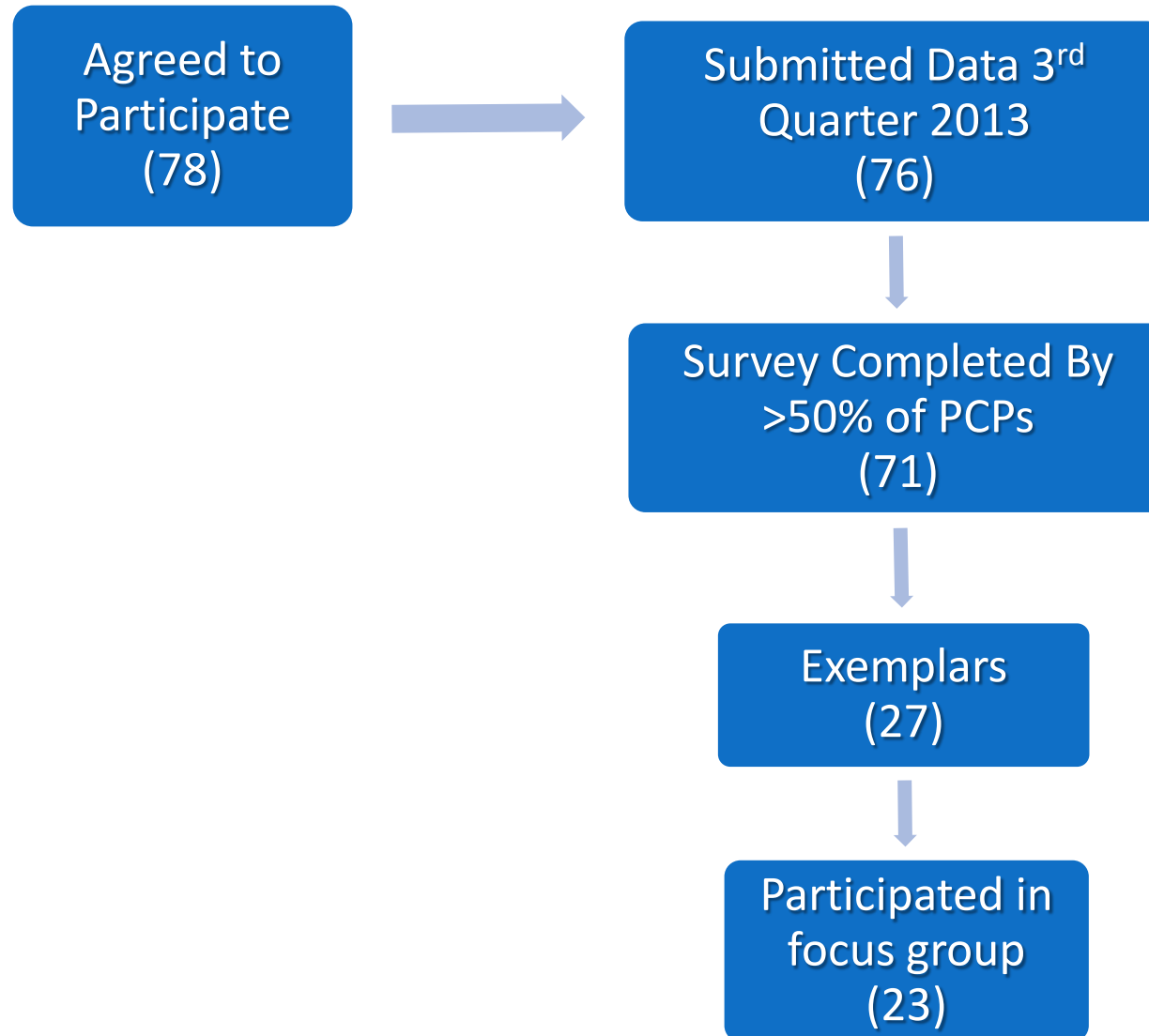




# RESULTS



# Practice Participant Flow Diagram





# CQM Performance (71 Practices)

Mean Percentage Adherent	CQM
>80%	Elderly avoid hi-risk Rx, Tobacco screen/couns
70%-80%	DM nephropathy screen
60%-70%	HTN control, breast ca screen, DM LDL< 100, IVD LDC<100, Children URI no Ab, Pneum vaccine
50%-60%	Antidepressant Rx, CRC screen, HF ACE-ARB, HF BB, IVD ASA
40%-50%	Asthma Rx, Cervical ca screen, DM hga1c>9%,
30%-40%	Afib warfarin in Tx range, Depression screen
20%-30%	Influenza vaccine
<20%	Chlamydia screen

CQM-SQUID: 0.374 (.179-.631); >0.40 =“Exemplar”



# Survey Respondents

N=319

- Total 349 providers (92.1% response rate)
- 73% MD/DO; 16% NP; 11% PA
- 51% Male; 49% Female
- 91% White; 97% Non-Hispanic
- Age: 28%  $\leq 40$ ; 31% 41-50; 26% 51-60; 15%  $\geq 61$ y



# Associations Between Specific Survey ? and CQM Performance

Survey Category	CQMs Associated (Multivariate analyses)
Provider Agreement	CRC Screening
Staff Education	Breast ca screen, DM nephropathy screen, IVD ASA, Depression screen
CDS (EHR Reminders)	Breast, Cervical, & CRC ca screen DM nephropathy screen HF: ACE/ARB & BB Chlamydia, Depression screen Flu, pneum vaccines
Standing Orders	(Many in bivariate analyses, none when controlling for CDS use)
EHR Patient Educ	Cervical ca screen, HGA1C control, HF: BB



# Associations Between General Survey ? and SQUID Performance

Survey Category	Associated with SQUID
EHR Functionality	<ul style="list-style-type: none"><li>• Registries for population management</li></ul>
Clinical QI Strategies	--
Beliefs about EHR and QI Activities	<ul style="list-style-type: none"><li>• EHR is helpful in achieving high quality clinical care</li><li>• EHR is customized in practice to facilitate high quality</li><li>• Participation in PPRNet motivating to achieve high quality</li></ul>
Administrative QI Strategies	<ul style="list-style-type: none"><li>• Practice member knowledge of improvement priorities</li><li>• Members evaluating progress together</li><li>• Leaders seeking input from team members</li><li>• Regular staff meetings</li><li>• Leadership commitment to “MU” of EHR</li></ul>



# Focus Group Observations

- “When the staff understands the clinical importance of CQM it makes them more enthusiastic about getting things done and the work is already done when we walk in the door.”
- “More direct impact when there are clear ways [for staff] to apply the education to actually improve performance.”



# DISCUSSION





# Major Findings

- The subject is interesting to clinicians
- EHR use does not assure high CQM performance, even when the CQM are widely endorsed by clinicians
- CDS (reminders) and registry use maybe most effective EHR QI strategies
- CDS operationalized through standing orders



# Major Findings

Other Stage 1 and/or 2 MU requirements not associated with CQM-SQUID:

- Use of problem lists
- Providing after visit clinical summaries
- Patient portal functionalities



# Study Limitations

- Participants used one EHR
- Findings dependent on accuracy of EHR data and fidelity of their incorporation in CQM
- Most observed associations low to modest strength
- Large # of associations studied, though all were pre-specified



# Conclusion

Among clinicians who have certified for MU, organizational factors related to EHR implementation, such as purposeful use of EHR functionality coupled with staff education in a milieu where QI and the EHR are valued and supported, are associated with higher performance on primary care-relevant CQM. High quality care requires more than MU certification.