

Usability of Montana PCMH 2014 Quality of Care and Utilization Data

**Presentation at the Patient-Centered Medical Home
Stakeholder Council Meeting
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Nancy McCall, Sc.D. • Juliet Rubini, R.N. • Kristin Geonnotti •
Brianna Sullivan, B.A.

Agenda

- Introduction
- Usability of quality of care data and recommendations for future data collection
- Usability of utilization data and recommendations for future data collection
- Strategies for incorporating data into a meaningful evaluation and public report
- *This study was conducted with the support from the Robert Wood Johnson Foundation's State Health and Value Strategies Program*

Goal for Performance Measurement

- **Our assessment of usability focuses upon validity and integrity of data submitted in first reporting period of 2014**
 - **Measuring what is intended to be measured**
 - Fidelity to measure owner's specifications
 - Free of systematic errors
 - Cannot directly assess the degree to which patients with targeted clinical conditions were systematically and correctly identified for quality of care measures
 - **What we can assess varies between patient-level and aggregate data reported**
- **Without validity and integrity of data you cannot achieve your aims of measuring PCMH performance**

Quality of Care

2014 Quality of Care Reporting Requirements

- **Four measures**
 - Blood pressure control
 - Tobacco use and intervention
 - A1c control
 - Age-appropriate immunization for children
- **Guidance**
 - Patient-level (Option 1) data or attested aggregate statistics (Option 2)
 - Specifications
 - Physician Quality Reporting System (PQRS)
 - National Immunization Survey (NIS)
- **69 PCMHs reported**

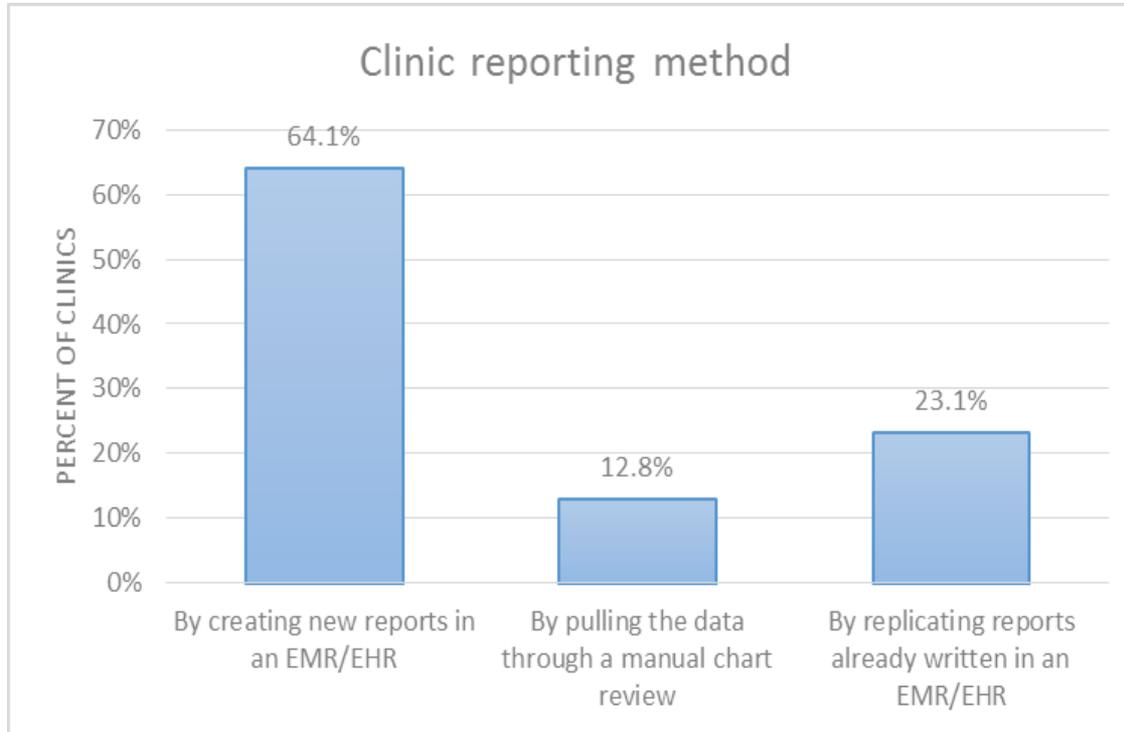
Evaluation of Guidance

- **Evaluated fidelity to PQRS and CHIPRA specifications**
 - Identified inconsistencies that might lead to differences in reporting across PCMHs
 - **Minor differences between guidance and PQRS specifications for blood pressure control and A1c**
 - Greater specificity in PQRS for all three measures
 - **Major difference for tobacco cessation and intervention**
 - Denominator included only users versus all adults with clinic visits
 - Numerator includes only patients who received intervention versus patients screened for tobacco use *and* users who received intervention
 - **Differences in childhood immunization relative to CHIPRA**
 - No numerator or denominator definition in NIS
 - Refusals/contraindications in denominator versus not in denominator
 - Montana guidance excluded seasonal flu and 2-dose Rotavirus

PCMH Survey and Analysis of Data Integrity

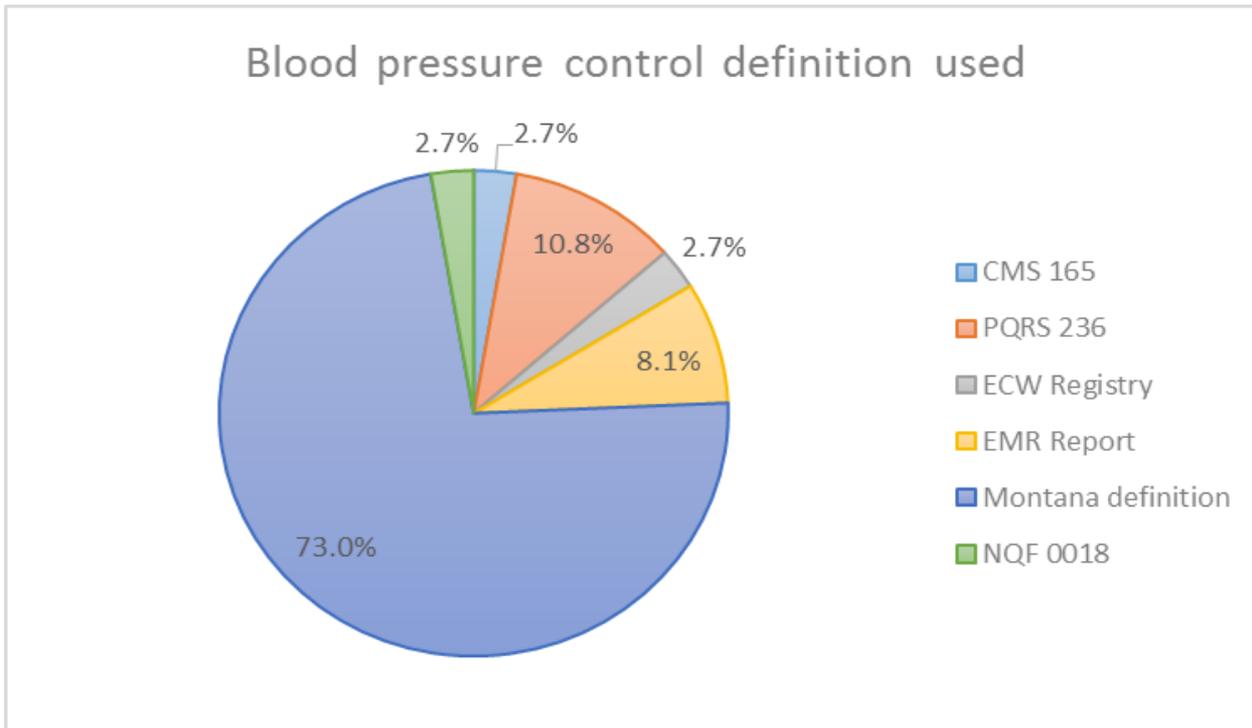
- **Survey asked PCMHs to**
 - Identify the methods used to collect the data they reported
 - Explain reporting criteria used(PQRS versus Montana guidance versus other)
 - 39 entities completed surveys for the universe of 69 clinics
- **Analysis of Data Integrity**
 - Reviewed findings from Montana Department of Public Health’s review of initial submission
 - **Analyzed face validity of data**
 - High level findings on missing data or anomalous data patterns
 - National prevalence of diabetes, hypertension, tobacco use and control
 - Comparison between aggregate and patient-level PCMHs
 - Not intended as a thumbs up or down but identify areas for improvement

Clinic Reporting Method



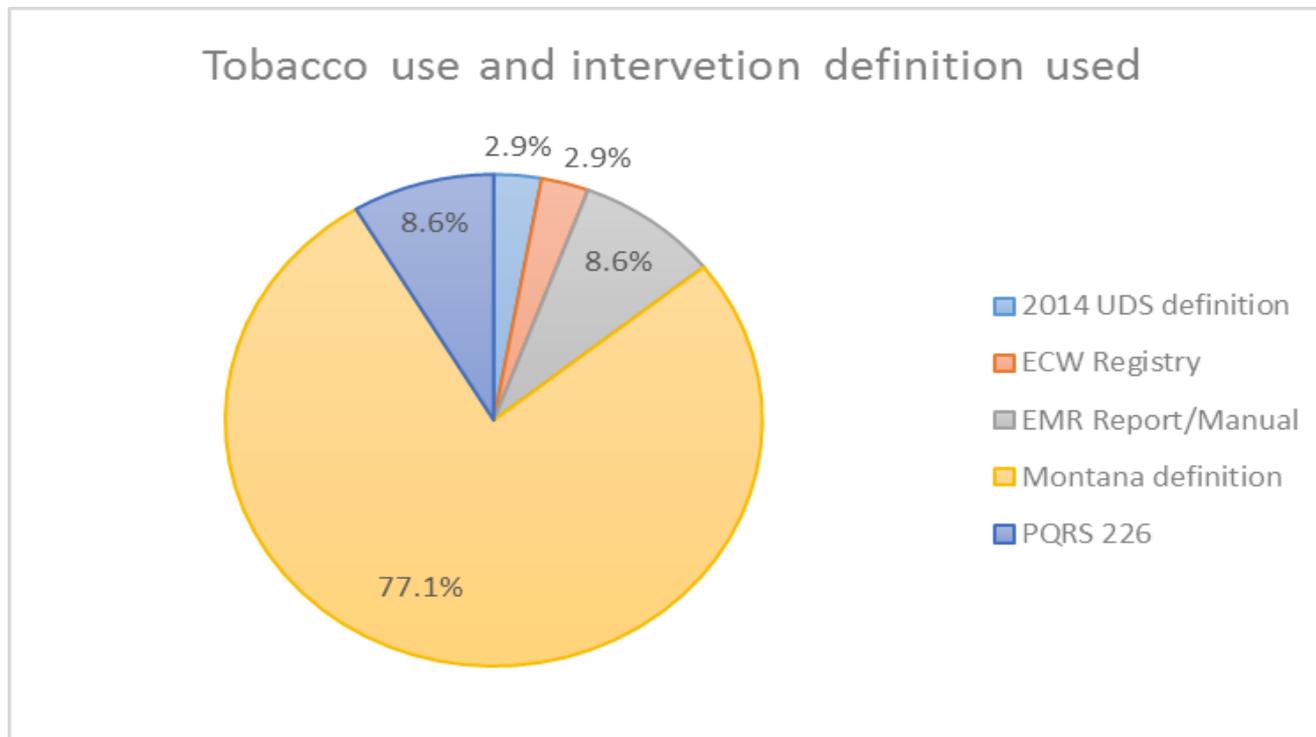
Source: Mathematica analysis of Montana PCMH Quality of Care Reporting Survey, 2015.

Blood Pressure Control Definition



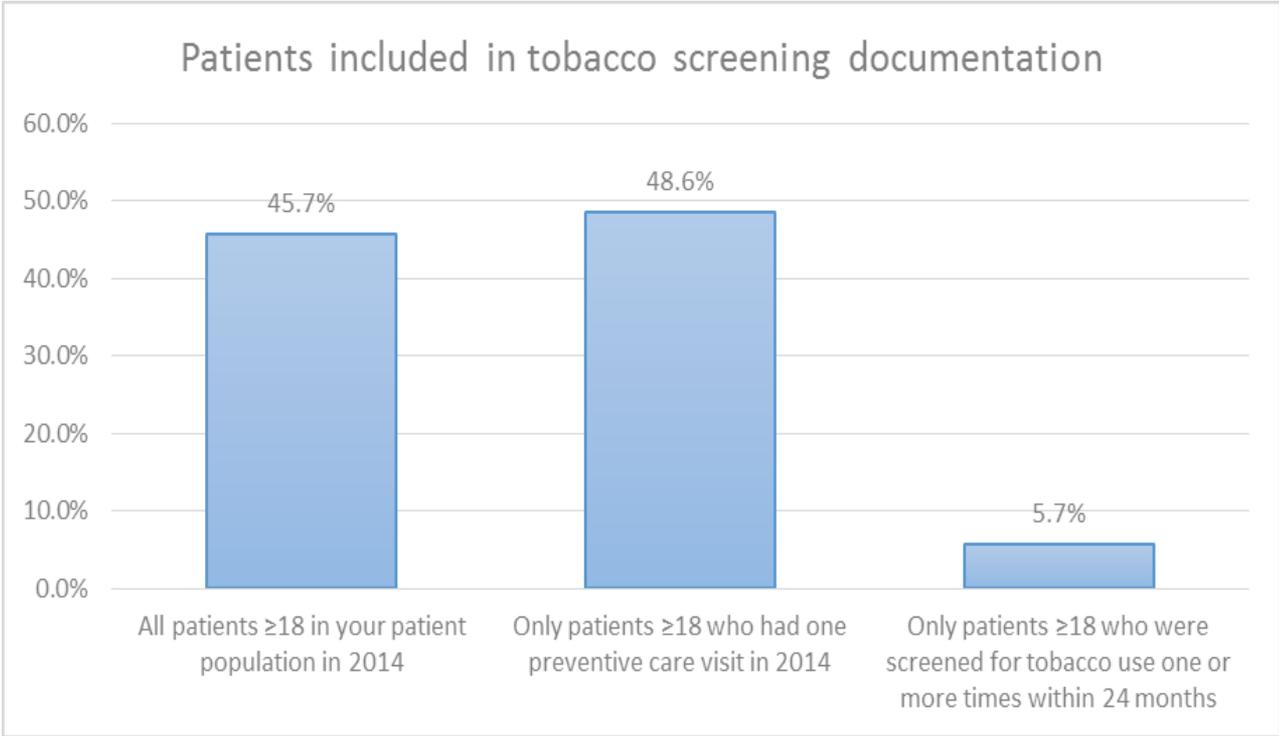
Source: Mathematica analysis of Montana PCMH Quality of Care Reporting Survey, 2015.

Tobacco Use and Intervention Definition



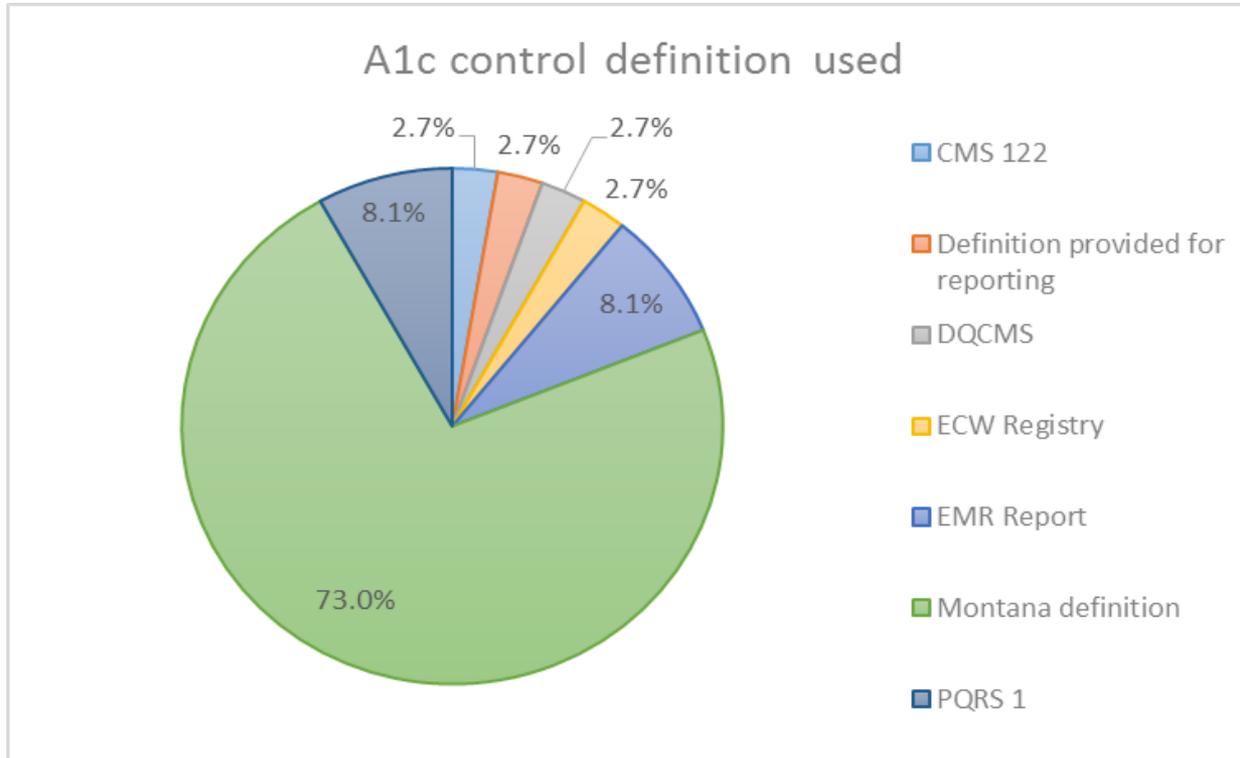
Source: Mathematica analysis of Montana PCMH Quality of Care Reporting Survey, 2015.

Patients Included in Tobacco Screening



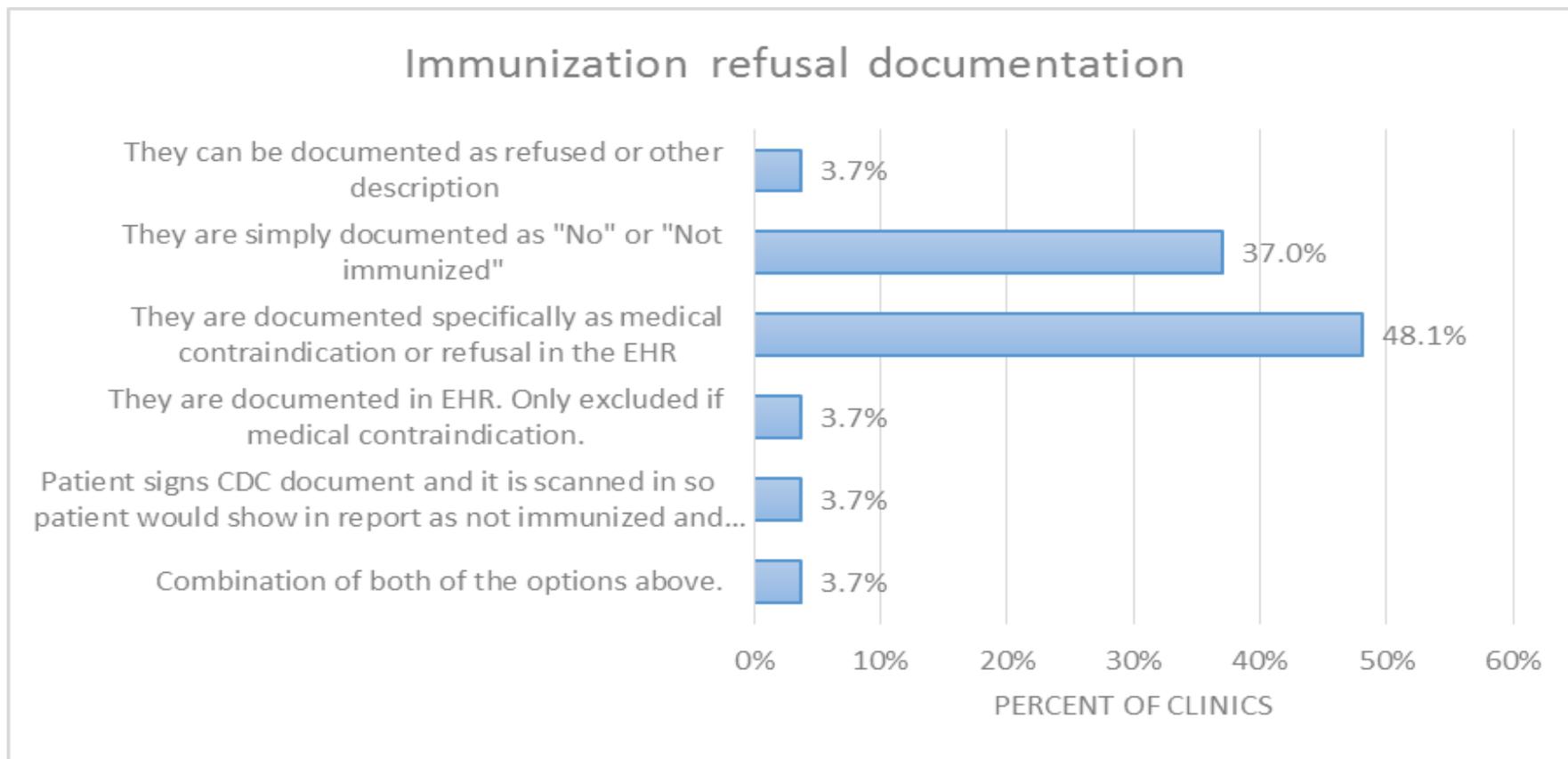
Source: Mathematica analysis of Montana PCMH Quality of Care Reporting Survey, 2015.

A1c Control Definition



Source: Mathematica analysis of Montana PCMH Quality of Care Reporting Survey, 2015.

Immunization Refusal or Contraindication Documentation



Source: Mathematica analysis of Montana PCMH Quality of Care Reporting Survey, 2015.

Missing Data

- **Epidemiologists did a lot of data cleaning!**
- **Missing data**
 - **Patient identifiers – ranging from none to 1/3 of clinics affecting up to 25% of patients**
 - **Age and sex – limited missing data**
 - **Receipt of recommended service –**
 - Considerable variation in missing data across measures
 - Immunization was most problematic with a lot of missing data for the 7 individual immunizations versus the composite measure
 - **No children were documented in the numerator as a refusal or with a medical contraindication**

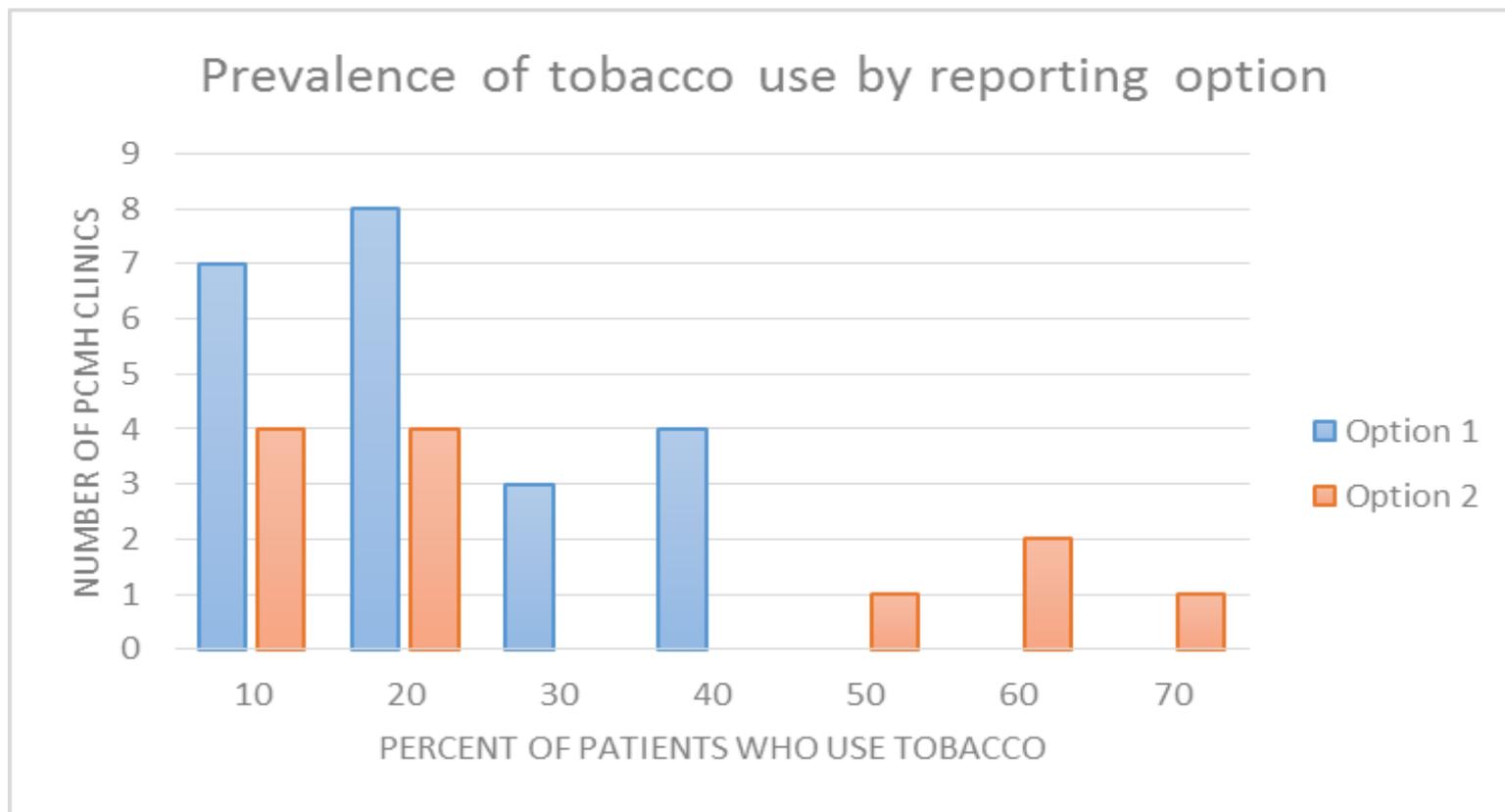
Anomalous Data Patterns

- **Dates of service**
 - **Out-of-range dates included in submission**
 - 70% of clinics had A1c dates not in 2014 or missing affecting 3% of patients
- **Tobacco non-users**
 - **6 clinics reported patient-level data only on tobacco users so prevalence of use could not be estimated**
- **Aggregate data reporting for immunization required resubmission by 25 clinics**
 - **Summation of individual immunizations > composite measure**
- **Inconsistent identification of control when A1c = 9.0**

Anomalous Data Patterns

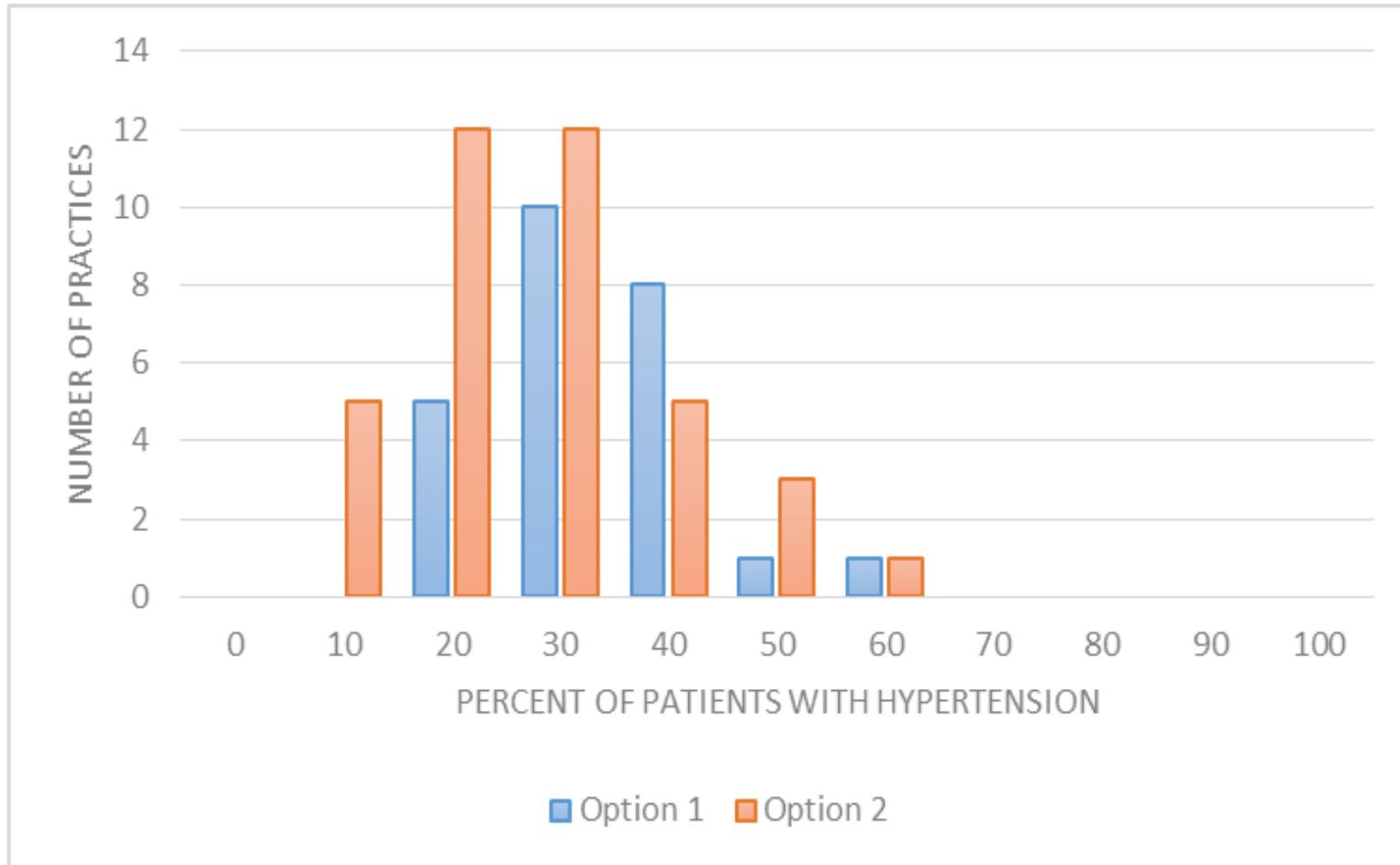
- **Formatting led to the need for a lot of data cleaning**
 - **Dates in non-date formats**
 - **Combined systolic and diastolic readings**
 - **A1c levels reported as numbers and percentages**
 - None done, N or 0 inserted when not done
 - **Immunizations requested Y, N, MC, R**
 - Individual vaccine name, number of vaccines received, 100%
 - **Tobacco cessation intervention request Y, N**
 - Name of intervention often provided with some dates embedded
- **Data editing rules applied**
 - **Greater than 95% of patient-level data are used to assess face validity**

Prevalence of Tobacco Use by Option



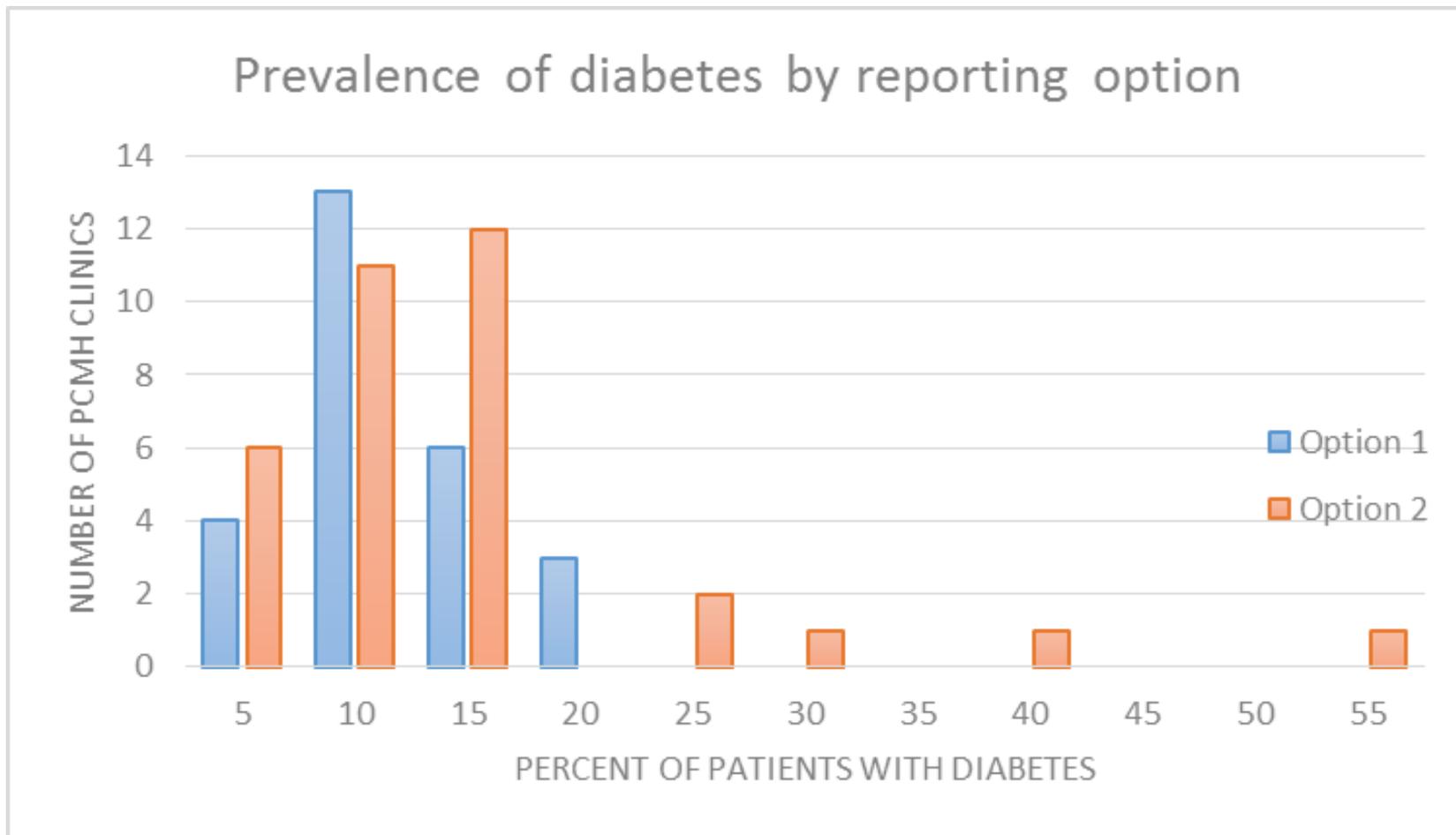
Source: Mathematica analysis of Montana PCMH Quality of Care Data, 2014.

Prevalence of Hypertension by Option



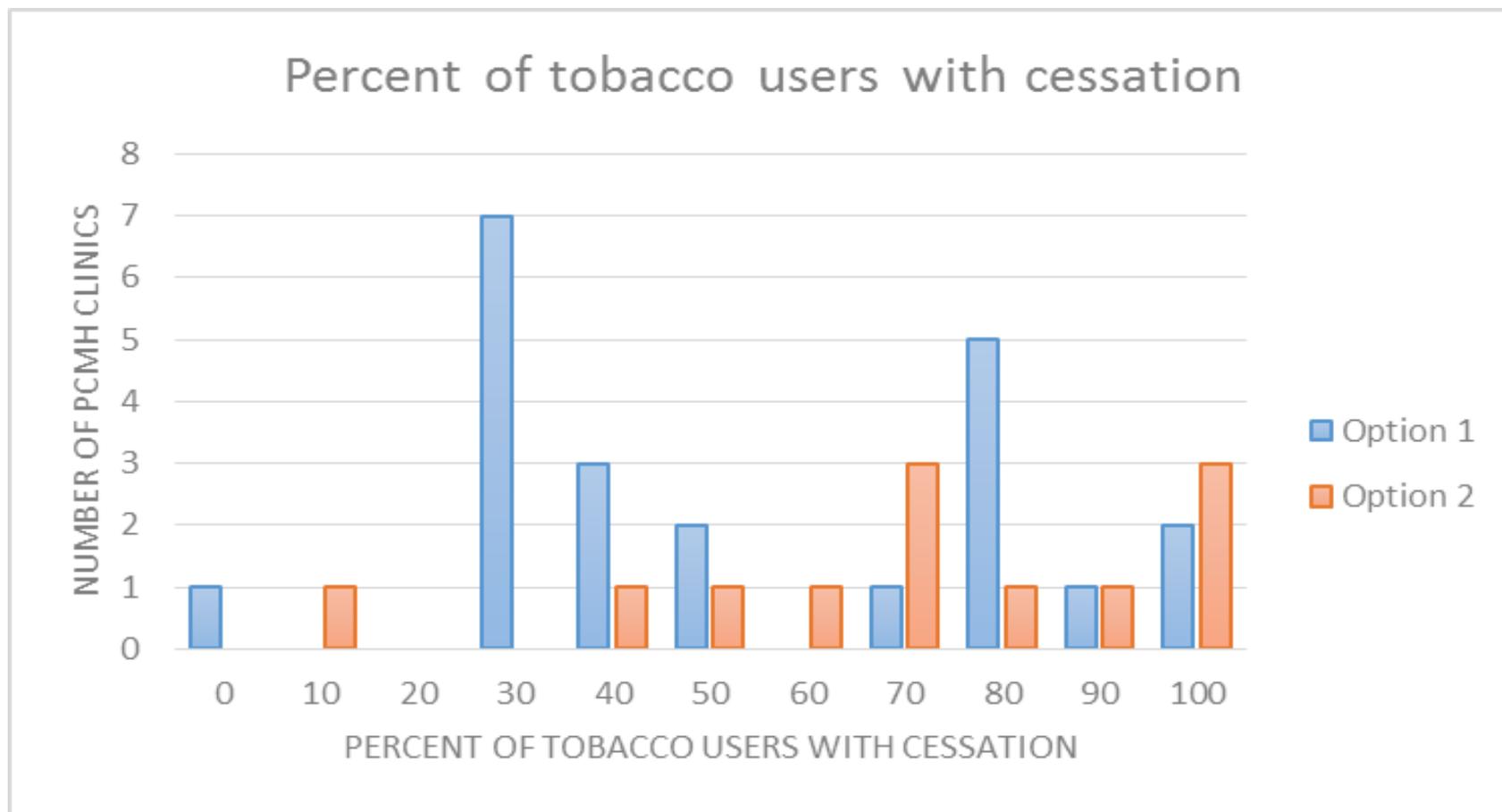
Source: Mathematica analysis of Montana PCMH Quality of Care Data, 2014.

Prevalence of Diabetes by Option



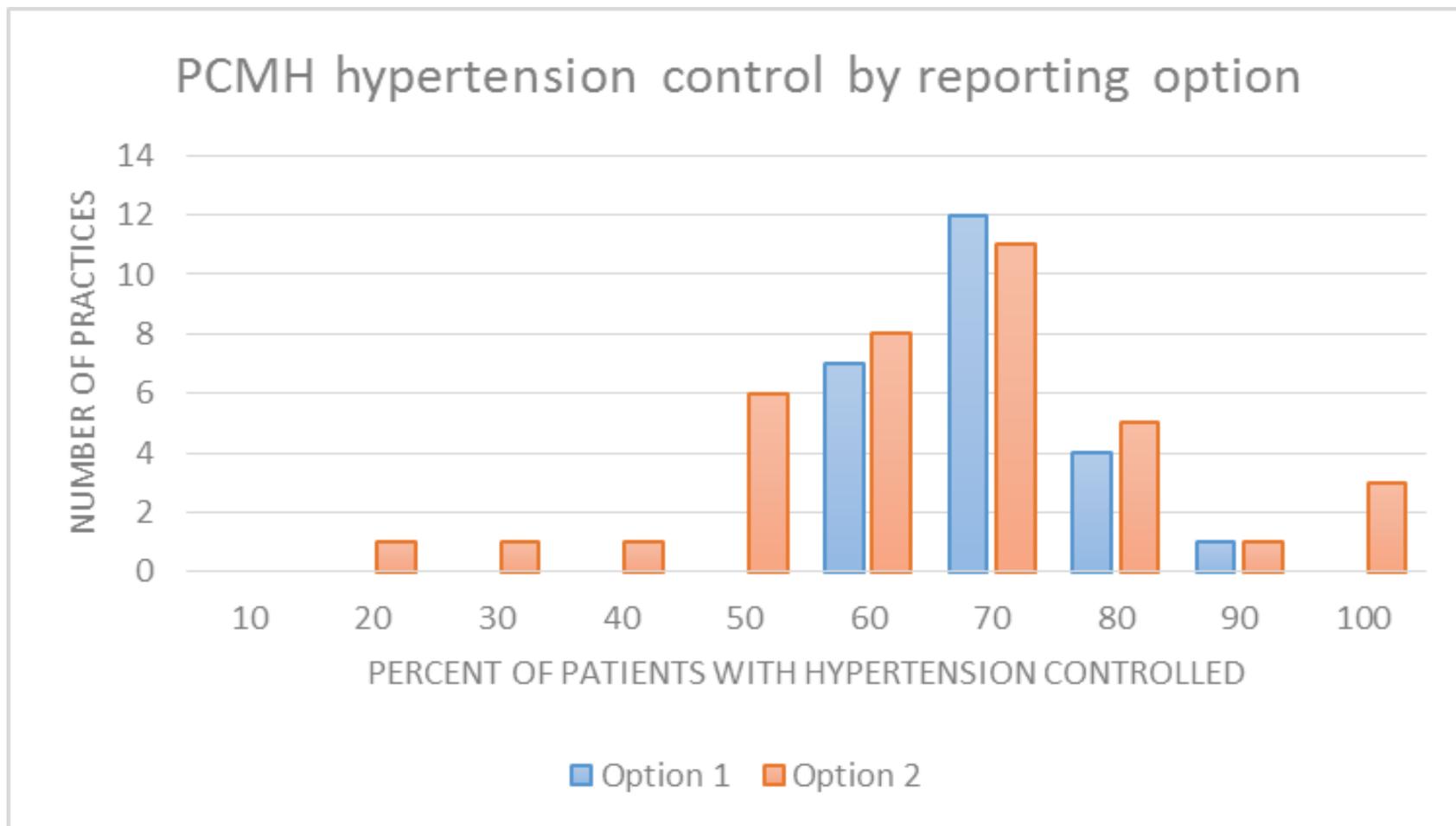
Source: Mathematica analysis of Montana PCMH Quality of Care Data, 2014.

Smoking cessation by Option



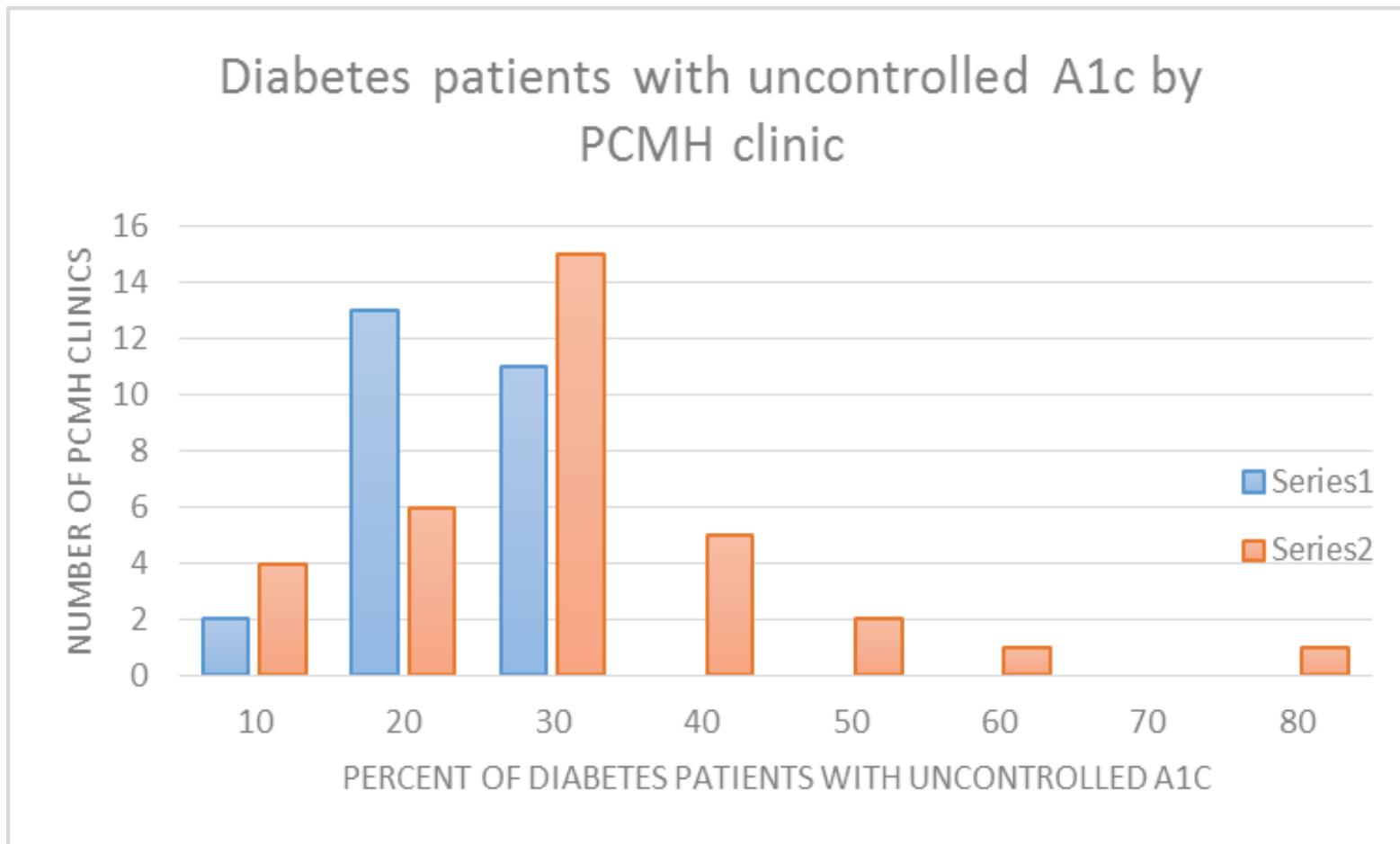
Source: Mathematica analysis of Montana PCMH Quality of Care Data, 2014.

Blood Pressure Control by Option



Source: Mathematica analysis of Montana PCMH Quality of Care Data, 2014.

A1c Control by Option



Source: Mathematica analysis of Montana PCMH Quality of Care Data, 2014

Recommendations

- **Increase fidelity to PQRS measures and provide greater specificity in guidance**
 - Most notable for tobacco cessation denominator definition
 - Develop decision rule for A1c control when A1c = 9.0
- **Revisit the childhood immunization measure**
 - NIS does not provide numerator or denominator definitions
 - Seasonal flu and Rotavirus not included in guidance but in NIS
- **Standardized reporting tool to prompt user when invalid values are added**
 - Increases burden on clinics and costs of development but increases data validity
 - Develop consistent data recoding and cleaning edits and rules

Recommendations

- **Conduct a limited medical record review**
 - **To directly assess accuracy of prevalence and measurement**
 - Examine how the clinics reporting aggregate data compare with known data problems from the patient-level data
- **Target clinics for technical assistance in reporting**
 - If prevalence or measure achievement out of range of other clinics and there is no clinical reason for the discrepancy

Acute Care Utilization Measures

2014 Utilization Reporting Requirements

- **Two measures**
 - Emergency Room (ER) visits
 - Hospitalizations
- **Aggregate statistics from four payers**
 - Fully-insured book of business
 - PCMH-attributed population
- **Evaluated guidance provided to payers**
 - Held discussions with payers to understand how they were constructing the two measures
 - Revised guidance provided to payers
 - Requested clarification on their approach to constructing the metrics

Evaluation of Guidance

- **ER Visits per 1,000 members with medical coverage per year.**
 - **Report Observation Stays as a separate category and exclude them from ER visits and hospitalizations.**
 - **Report ER visits that lead to hospitalization in a separate category from ER visits that do not lead to hospitalization.**
 - **Report multiple ER visits on same day as separate events.**

Evaluation of Guidance

- **Hospitalizations per 1,000 members with medical coverage per year**
 - Include all acute care facilities.
 - Exclude non-acute facilities such as swing bed designations, long-term care hospitals, and rehabilitation hospitals.
 - Include hospitalizations that occur outside of Montana.
 - Roll multiple components of care during a continuous episode into a single admission count, as long as they are all inpatient care.

Payer Definitions for Utilization Measures

Numerator components definitions	Payers			
	Payer A	Payer B	Payer C	Payer D
Emergency Room Visits				
<i>ER visit reporting by disposition</i>				
All ER visits reported as a single rate	-	x	-	-
ER visits reported separately by disposition (lead to hospitalization vs. did not lead to hospitalization)	x	-	-	x
Only reported ER visits that did not lead to a hospitalization	-	-	x	-
<i>Multiple ER visits on the same day</i>				
Reported as a single ER visit	x	-	-	-
Reported as multiple ER visits	-	x	x	x
Observation Bed Stays				
Reported separately from ER visits and hospitalizations	x	-	-	x
Not reported	-	x	x	-

Source: Mathematica analysis of Montana Payer responses to Questionnaire from the Montana Commissioner of Securities and Insurance, 2015.

Payer Definitions for Utilization Measures

Numerator components definitions	Payers			
	Payer A	Payer B	Payer C	Payer D
Hospitalizations				
Included hospitalizations that occurred outside of Montana	x	x	x	x
<i>Rates reported included the following facilities:</i>				
Short-term general and specialty hospitals	x	x	x	x
Critical access hospitals	x	x	x	x
Psychiatric hospitals and units	x	x	x	x
Birth centers	x	-	-	x
Rehabilitation hospitals and units	-	x	-	x
Long-term care hospitals	-	x	-	x
Swing beds	-	x	-	-
Skilled nursing facilities	-	-	x	x
<i>Hospitalizations reported as:</i>				
Separate admissions if change in facility or transfer	x	x	-	-
A single admission for a continuous inpatient episode	-	-	x	x

Recommendations

- **Consider further modifications of measure definitions**
 - Increase performance comparability across PCMHs
 - Increase linkage to actionability
- **Categorizing ER visits**
 - Reporting multiple versus single events
 - Reporting by disposition
- **Categorizing hospitalizations**
 - Types of hospitals
 - Continuous episodes of acute care
- **Categorizing observation bed stays**
 - Reporting out separately

Recommendations

- **Additional considerations**
 - **Report “final action” claims**
 - Roll-up interim and final bills into a single hospitalization count
 - **Clarify reporting of newborn and delivery hospitalizations**
 - Consider removing from hospitalization measure or report only delivery due to lack of actionability by PCMH
 - **Ambulatory Care Sensitive Conditions**
 - AHRQ Prevention Quality Indicators
 - Low-birthweight or premature neonates
 - **Case-mix adjustment**
 - Utilization can vary across patients with different sociodemographic and health status characteristics
 - Aggregate statistics do not allow for standardizing across payers or over time

Strategies for Incorporating Data into a Meaningful Evaluation and Public Report

Evaluation Designs

- Major challenge in evaluating the effects of practice transformation into medical homes is identifying what would have happened absent transformation
 - Need to isolate the medical home effect from all other changes that are occurring simultaneously during the reporting period
 - ACOs, “doc fix”, economy, CVS Health, other factors
- Evaluation designs have varying degrees of *strength of evidence*
 - Stronger evaluation designs have greater data requirements; benefit from a robust intervention and comparison group
- Patient level evaluations allow for greater control of differences in case-mix over time

Evaluation Designs

- **Descending order of *strength* of evaluation approach**
 - **Randomized controlled trial**
 - Not currently practical in Montana
 - **Difference-in-differences**
 - Strongest quasi-experimental design
 - Requires comparison group and data for pre- and post time periods
 - **Pre-post differences for PCMH group only**
 - Strong assumption that all changes are due to practice transformation
 - Multiple pre-intervention periods can strengthen this approach
 - Quality-of-care measures often aim for meeting a benchmark
 - If comparison of cross-sectional samples, must control for changes in case-mix (i.e., Medicaid expansion)
 - **Cross-sectional differences in post-period**
 - Does not account for any pre-PCMH transformation trends in outcomes

Identifying a Robust Intervention Group

- For whom do insurers want to provide additional payments?
- For whom within the practice should the medical home be held accountable for outcomes?
 - Intent-to-treat – all patients attributed to practice based upon specific criteria
 - Minimum “dosage” level of intervention by practice
 - Actively receiving enhanced services – chronic conditions
 - Main concern: dilution of effect on outcomes by including patients not receiving enhanced services

Attribution: Identifying a Robust Intervention Group

– Claims-based algorithm

- Requires decisions about type of services, type of providers, and rules for determining responsible physicians –
- Often based upon a patient's prior number of E&M visits (1-2 years) with primary care providers
- Requires previous patient utilization
- Can produce attribution lists that are only 50% of practice's perceived active patients, and may not identify patients in most need

– Clinic-based roster

- Practices identify patients for whom they believe they are the primary care provider – may identify a non-representative group of patients
- Multiple practices may claim the same patient

– Patient-identified clinics

- Patients select or identify a practice as their primary care provider
- Most prevalent in an HMO model

Identifying a Robust Comparison Group

- **Practice-level interventions with claims-based algorithm**
 - **Identify a pool of potential comparison group practices with similar characteristics but without recognition as a PCMH**
 - Most desirable to stay within same geographic area
 - Need to affirm that there are not systematic differences between practices that are PCMHs and those that are not PCMHs
 - **Apply propensity score matching at the practice level**
 - Identify relevant practice characteristics and data sources
 - Practice ownership, % of practice meeting meaningful use criteria
 - **Apply claims-based algorithm to assign patients**
 - Use same algorithm as intervention group assignment