Assessing changes in healthcare access, experiences, ER use, hospitalizations, and outcomes before, during, and after implementation of a patient-centered medical home in Alaska

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Institute for Circumpolar Health Studies

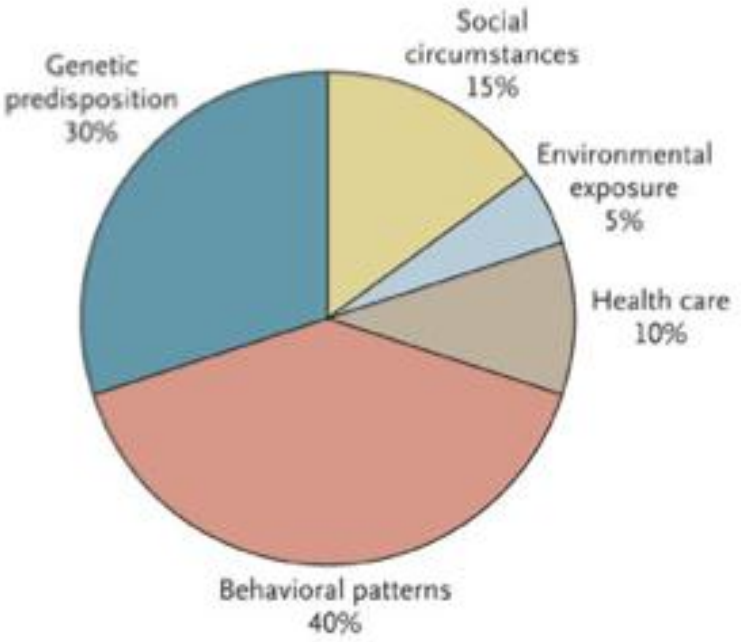
Created by the legislature in 1988 (AS 14.40.088)

1994: "to improve the health of the peoples of Alaska and other circumpolar areas through instruction, information services, and basic and applied research in health and medicine."

2008: enhanced focus on social and physical determinants of population health.

Why Health Care?

Proportional Contribution to Premature Death



McGinnis, Social Determinants of Health, 2002

History of the Nuka System of Care

Left Photo: Robert Fortuine papers, Archives and Special Collections, Consortium Library, University of Alaska Anchorage.

Right photo: Southcentral Foundation

March 1998
- SCF assumes complete responsibility of PCS at ANMC.

July – Aug 1999
- Empanelment process begins (Family Medicine) and roles of integrated care team members developed.

Oct – Nov 1999
- Open access begins (Family Medicine).

Nov 1999 – Jan 2000
- Empanelment process begins (Pediatrics).

Jan 2000
- Open access begins (Pediatrics).

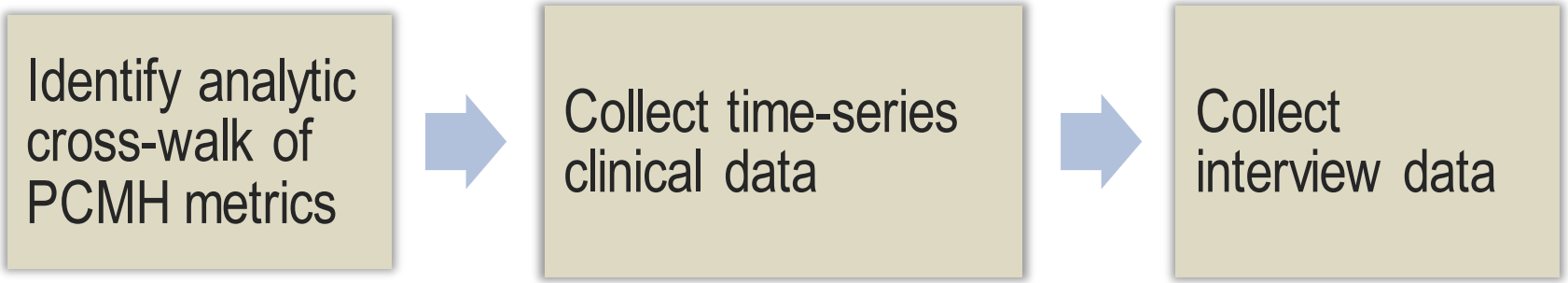
May 2004
- Integrated care teams expand (e.g. BHCs integrate into teams).

ANMC – Alaska Native Medical Center
BHC – Behavioral Health Consultants
PCS – Primary Care Services
SCF – Southcentral Foundation

Study Objectives

To collect and integrate quantitative, secondary and qualitative, primary data related to heath care processes and outcomes over a period of 16 years.

The sequential mixed methods strategy consists of three phases:



Data Collection Methods

Identify Analytic Crosswalk:

Research Question or Purpose	Secondary Data Measures	Broad Q Sub-Category	Interview Guide Qs	ID	Comments
*SCF female patients aged 21 – 64 with cervical cancer diagnosis per 1000 enrolled SCF female patients aged 21 – 64 (monthly measure)					
*			Addressing conditions of health and wellness	PV, TL	Which conditions/health issues were most or least affected by empanelment?
Utilization of Emergency					
Emergency Room/Urgent Care for SCF patients with diabetes, total number of visits (monthly measure)				PV	Can you tell me which conditions associated with ER/UCC visits have been impacted by empanelment?
ER/UCC utilization for SCF patients with adult asthma diagnosis per 1000 enrolled SCF patients					
*				PF, PV	Considering all of these changes, can you share with me how customer-owner health outcomes have changed?

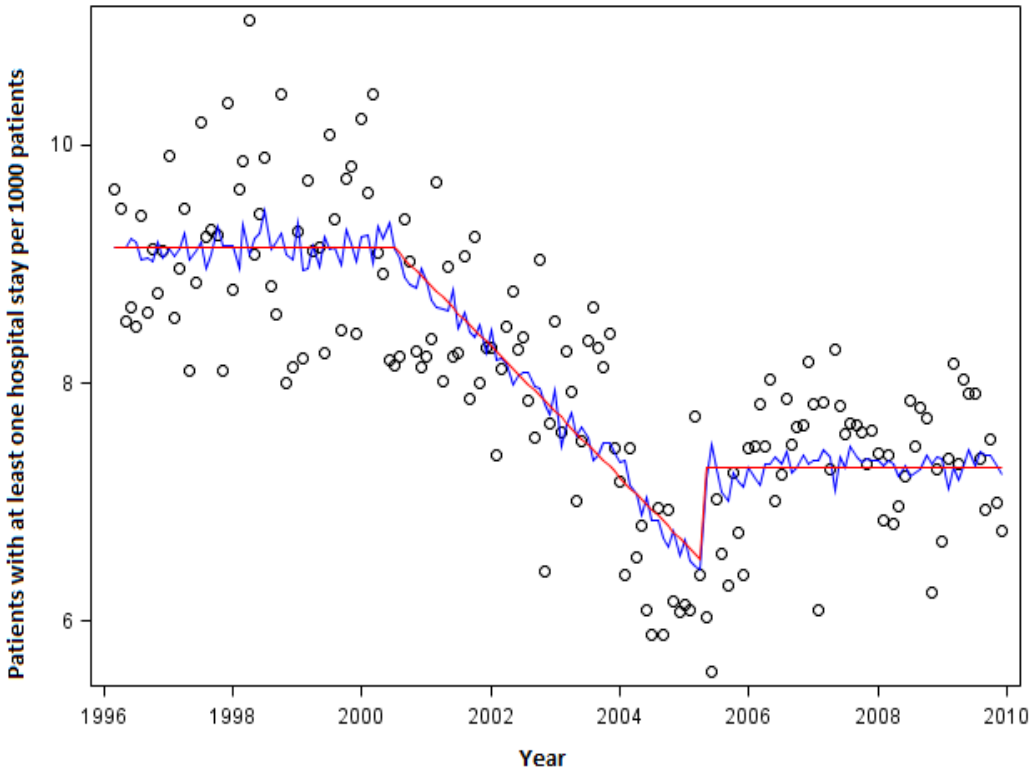
Data Collection Methods: Quantitative

- Time series analysis examining changes in health outcomes before, during and after PCMH implementation for several outcomes including:
  - **Emergency care (EC)** use for any reason, asthma, and for unintentional injury (control)
  - **Hospital use** for any reason, for diabetic patients and unintentional injury (control)

- Use segmented regression with autocorrelation

Quantitative Results

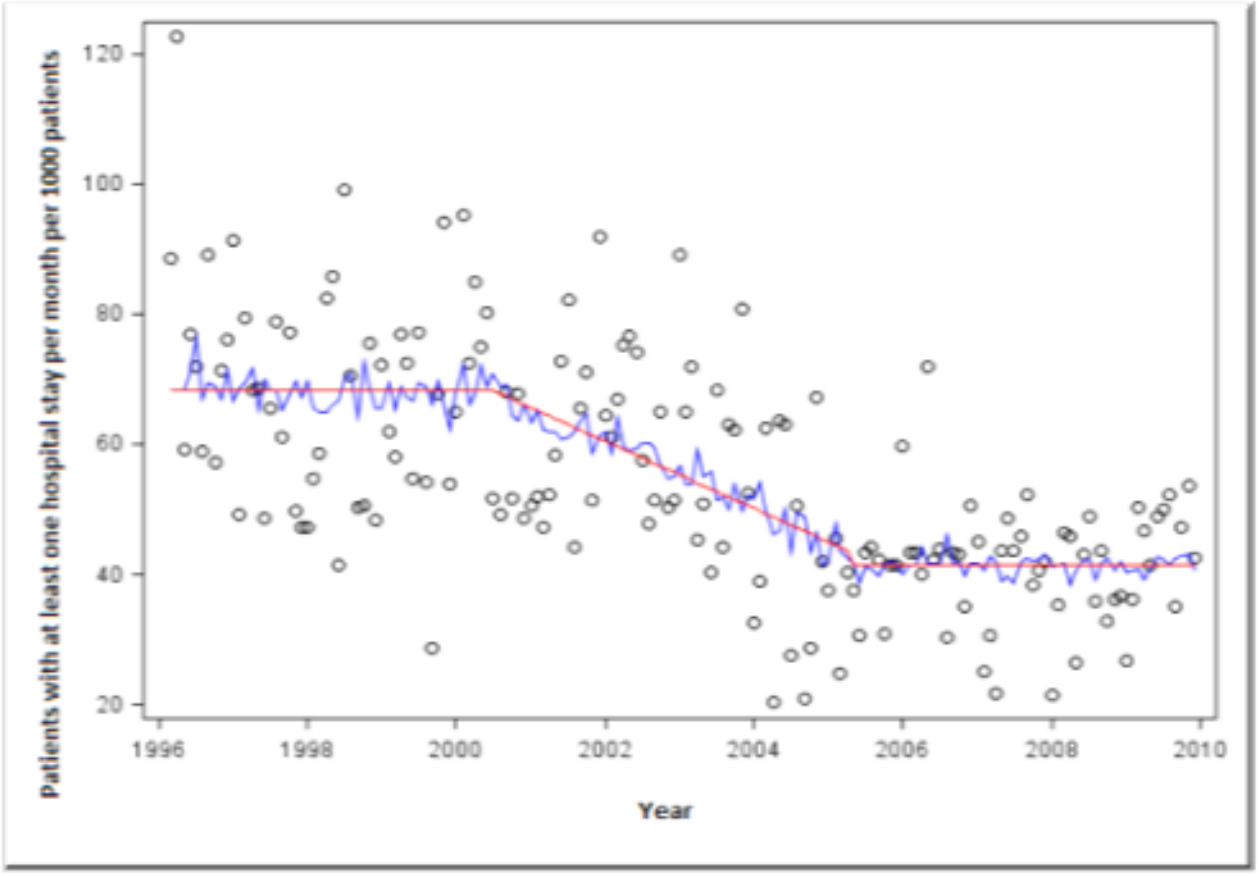
Monthly Hospital Use per 1000 patients.



- Monthly rate extracted from RPMS
- Inner product of estimated coefficients and independent variables
- Predicted value including autoregressive components

Quantitative Results

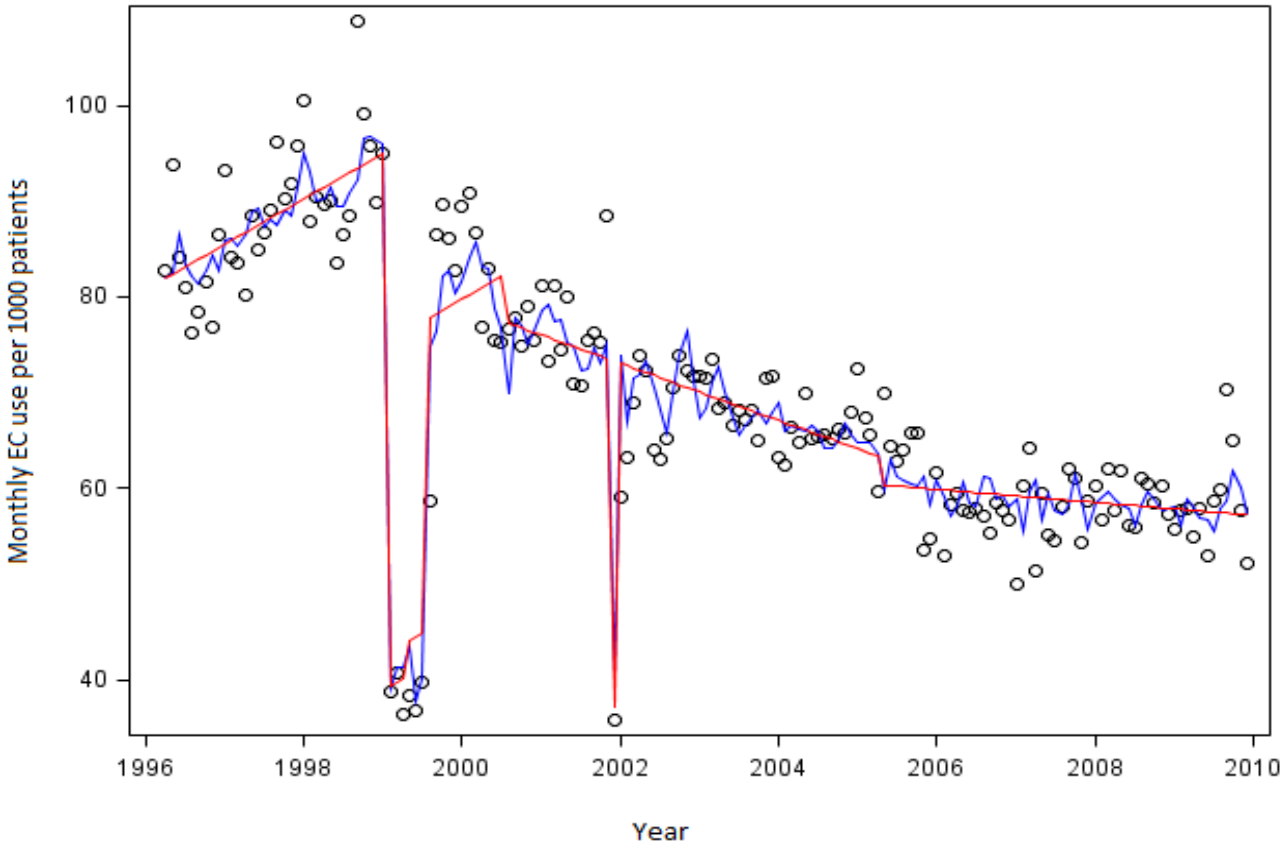
Monthly Hospital Use per 1000 Diabetic Patients



- Monthly rate extracted from RPMS
- Inner product of estimated coefficients and independent variables
- Predicted value including autoregressive components

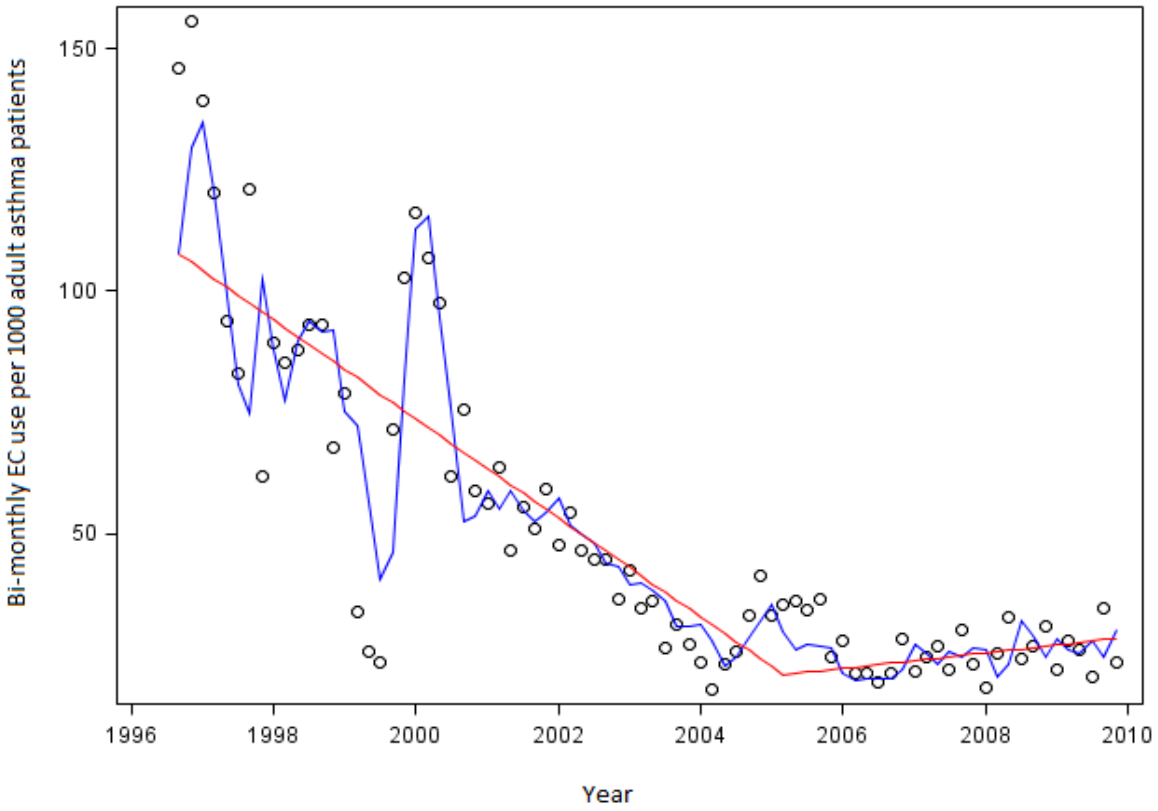
Quantitative Results

Monthly EC use for any reason per 1000 patients.



Quantitative Results

Bi-monthly EC use for asthma (primary or secondary diagnosis) per 1000 adult asthma patients.



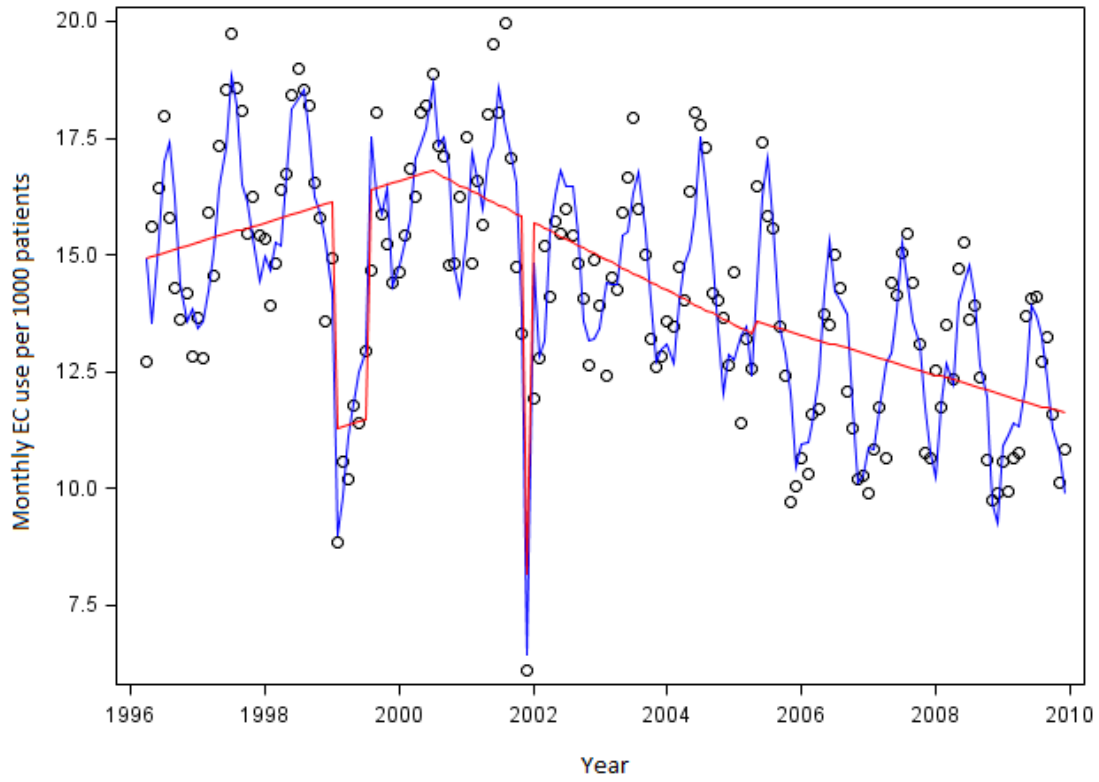
Bi-monthly rate extracted from RPMS

Inner product of estimated coefficients and independent variables

Predicted value including autoregressive components

Quantitative Results

Monthly EC use for unintentional injuries per 1000 patients.



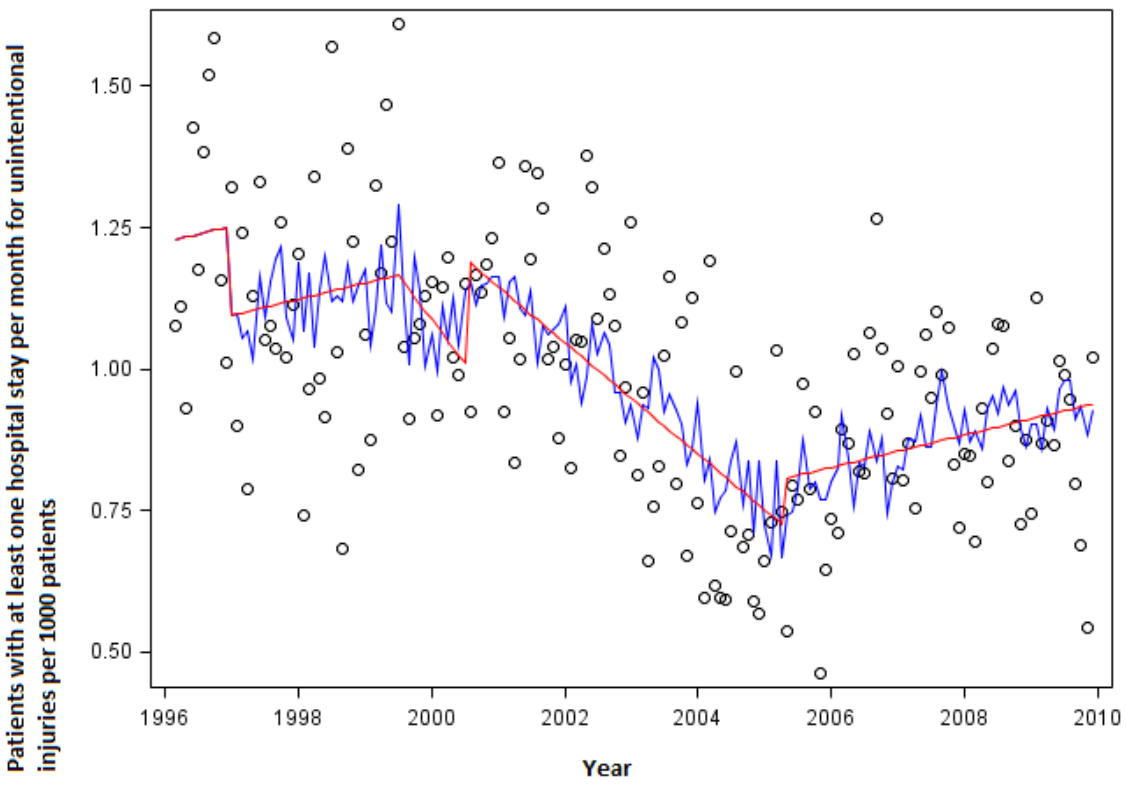
Monthly rate extracted from RPMS

Inner product of estimated coefficients and independent variables

Predicted value including autoregressive components

Quantitative Results

Monthly hospital use for unintentional injuries per 1000 patients.



- Monthly rate extracted from RPMS
- Inner product of estimated coefficients and independent variables
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Data Collection Methods: Qualitative

45 semi-structured interviews conducted by research teams at UAA and SCF:

Study Participant Category	(n)
PCMH primary health care providers	8
PCMH specialty clinic providers, administrators, and support staff (quality improvement, finance, data managers, etc.)	15
PCMH patients	11
Tribal leaders	11

- Patients recruited through flyers posted in clinical settings and advertisements in AI/AN publications,
- SCF tribal leaders recruited by invitation and via advertisements in a tribal leadership list-serve, and
- employees randomly selected from those employed by SCF between 1995 and 2004 (current and former).

Interviews transcribed and coded on emergent themes:

- patient match to a primary healthcare provider (empanelment),
- enhanced and often same-day access to health care (open access), and
- integration of primary care teams (team-based care).

Qualitative Results: Empanelment

Challenges and outcomes:

- 50% of patients were randomly assigned to their providers.
- Some of those who selected their doctors were panel jumpers.
- 67% of patients described improved communication and increased feelings of safety and trust with their provider.

Illustrative Quotes	
Patient 0222:	"Now it's streamlined. One call and you're directed to who is going to help you out and then they get back to you…now, there's so many people that can help you, that can care about you that you're not…you don't stay lost."
Patient 1213:	Q: [Can you tell me how you were matched up with your (provider)?] A: "I was just assigned one; there was no choices or anything."
Provider 0119:	"We dealt with…the panel jumpers…the med seekers who would doctor shop. It was *really* bad the first three or four years I was here because…people could switch doctors as much as they wanted…a few years ago we put in place that…you could only do two [panel] jumps in a year and then you had to meet with a BHC."

Qualitative Results: Open Access

Challenges and outcomes:

- 63% of providers described a burdensome process resulting in high turnover.
- Case manager role an important adjustment to prevent overbooks.
- All patients described more timely access to primary care services.

Illustrative Quotes	
Tribal Leader 0323:	"But for the doctors, [same day access and overbooking] is hard on family life. There was high turnover which wastes money to rehire and retrain. You don't need same day access for everything. We have taken same day access way too far."
Patient 0222:	Q: [What was it like to receive care (prior to the new model of care)?] A: "It was good care. Like long wait times, I remember. It's a lot more efficient now. The whole process of making appointments and getting called back, and stuff like that, reminders. When I would book appointments [before the transition], they would be really far out. I remember it used to be a lot easier to just go into the ER for *anything*. So if someone had a sore throat, we'd just go to the ER instead of going to make an appointment with the Family Medicine provider."
Tribal Leader 1214:	"By 1996…we created the very first case manager…we took the one RN we had and said, alright, you're not going in and out of rooms anymore, you're going to do case management and care coordination."

Qualitative Results: Team-Based Care

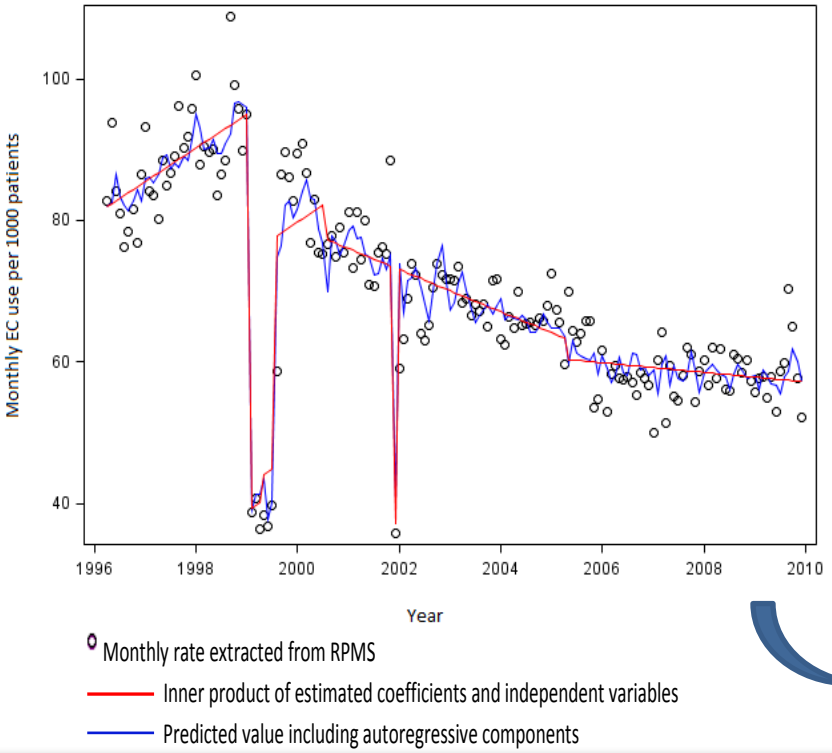
Challenges and outcomes:

- Physicians were unfamiliar with team-based model of care.
- Physical layout of clinical offices were revised to promote teams.
- Behavioral health consultants, nutritionists and schedulers were added to the teams.
- Integrated care teams allow for non-physician clinical visits.

Illustrative Quotes	
Care Team Member 0119:	"That was a big thing. First the doctors had to let go of all of the things they did to the nurses and then let go of other things they did with [the behavioral health consultants]."
Case Manager 1118:	"We now sit with our [certified] medical assistant [CMA] which is new… The communication was primarily between the nurse and the provider…and then the provider and the CMA, but never—very rarely—was it between the nurse and the CMA because we weren't really sitting in the same location. [And that changed…?] That's changed, yes, since the move. We're all in one area. There's four members of that core team…and we're all right next to each other."
Provider 0202:	"I mean the integrated teams are the way it should be, absolutely, because we all see different pieces of the customer-owner and all of our input is helpful and it all needs to be put together and everybody needs to have some weight in helping making care the most it should be."

Linking Secondary and Primary Data: EC Use

Monthly EC use for any reason per 1000 patients.



Patient 0305:	Q: [How often did you go to the ER (prior to the implementation of the new model of care)?] A: "I'm really not sure how often, but it seemed like I was there, like once every three months. If you couldn't get an appointment to see somebody, you have to go to the ER."
Patient 0222:	Q: [How often did you or people you know go to the ER (prior to the new model of care)?] A: "At least a few times a year. Like I said, just for regular illnesses, people would just go to the ER."

Conclusions

- Time-series evaluations of PCMH transitions can be constrained by the availability of process and outcome data related to primary care sensitive conditions.

- Secondary quantitative analyses indicate reductions in monthly hospital and EC use for any reason, reductions in hospital use for diabetes care, and EC use for asthma. These findings are also reflected in EC use for unintentional injury, which represents a control variable unlikely to be affected by PCMH.

- Primary qualitative analyses indicate that implementation of open access, empanelment, and team-based care were associated with provider overload, patient frustration, and some doctor shopping but eventually resulted in enhanced access and more trusting healthcare relationships.

- Integration of quantitative and qualitative data indicated that some aspects of the reduction in EC use can be associated with enhanced access.

Acknowledgments/Contact Information

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