**Supplementary materials for**

Alidina S, Rosenthal MB, Schneider EC, Singer SJ, Friedberg MW. Practice environments and job satisfaction in patient-centered medical homes. *Ann Fam Med*. 2014;12(4):331-337.

**Appendix 1: Design elements of the Rhode Island and Colorado PCMH pilots\***

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| **State** | **Rhode Island** | **Colorado** |
| **Setting** |  |  |
| Pilot duration | October 2008-September 2013 | May 2009-April 2012 |
| Participating practices | 5 volunteering internal medicine and family medicine practices responsible for approximately 24,000 covered lives. | 15 volunteering internal medicine and family medicine practices in the Front Range region; 20,000 lives are covered by participating insurers, but pilots agreed to act as PCMHs for their entire panels (90,000-100,000 patients). |
| Participating insurers | Blue Cross Blue Shield of Rhode Island, Neighborhood Health Plan, and United Health Care (collectively cover 67% of insured Rhode Island residents). | Aetna, Anthem-Wellpoint, CIGNA, CoverColorado, Colorado Medicaid, Humana and United Healthcare. |
| Selection process | Hand selected by pilot steering committee based on their diverse practice characteristics, history of working together, readiness for change and use of an electronic medical record. | Competitively selected based on a written application with particular attention paid to demographics, quality improvement history, culture, technological capabilities and insurer penetration. |
| **Intervention** |  |  |
| Financial incentives | Graduated fee of $3 to $4.50 per member per month care management fee based on NCQA PPC-PCMH recognition level. | Graduated fee of $4-$8 per member per month care management fee based on NCQA PPC-PCMH recognition level.  Pay for performance related to 9 clinical quality and 3 cost trend measures (phased in October 2010). |
| Enhanced staffing | Salary and benefits for 1 nurse care manager per practice. | -- |
| Technical support | Rhode Island Chronic Care Collaborative support for quality improvement, training based on IHI Breakthrough Series/Chronic Care Model (quarterly meetings) | Quality Improvement Coach engages with practices onsite on a monthly basis, focusing pedagogy on four key areas: office redesign, use of technology, integrating care, and patient centeredness. |
| Regular collaborative meetings. | Pilot-wide learning collaboratives organized 2-3 times per year. |
| Semi-monthly webinar to share best practices.  Monthly physician advisory meetings. |
| **Contractually-specified obligations** | | |
| NCQA PPC-PCMH recognition | Achieve Level 1 recognition by July 1, 2009 and Level 2 recognition by October 1, 2010. | Achieve, at minimum, Level 1 NCQA PPC-PCMH recognition and work towards higher level of recognition throughout pilot. |
| Data collection and reporting | Track and produce quarterly reports on 5 clinical quality measures related to 3 chronic conditions (diabetes, coronary artery disease and depression), beginning Q2 of pilot. | Produce monthly clinical quality reports on agreed-upon set of measures; submit written reports as requested. PMPM fees may be discontinued if reports are not submitted for 2 consecutive months. |
| Use of practice assistance | Engage with nurse care manager provided by pilot, send care managers to training program and produce reports on care manager activities | Actively work with Quality Improvement Coach around redesigning practice, improving satisfaction for patients and staff, and improving quality measures |
| Training | Participate in one year of practice transformation training (all physicians and key staff). | Participate in day-and-a-half-long Learning Collaborative Sessions three times annually and monthly Learning Collaborative conference calls  Organize a Practice Improvement Team (providers and key staff) that meets at least twice per month |
| Patient engagement | Notify patients about medical home; participate in patient experience survey. | Implement HIPAA-compliant electronic communication portal; participate in patient experience survey |
| Utilization | Review and act upon utilization data provided by health plans; work to reduce unnecessary utilization. | -- |

\* Our framework for categorizing salient elements of the design of each pilot is derived from Friedberg MW, Lai DJ, Hussey PS, Schneider EC. A Guide to the Medical Home as a Practice-Level Intervention. *American Journal of Managed Care.* Dec 2009;15(10):S291-S299.

**Appendix 2**

**Key Elements of Rhode Island PCMH Pilot Activities**

|  |  |  |
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| **Category** | **Component** | **Description** |
| **PCMH recognition** | Policy development | Practices established new policies and protocols for care management, care coordination and other elements of PCMH |
| Documentation | Policies were documented and disseminated to staff, required documentation for NCQA was completed |
| Submission | Applications were uploaded, errors corrected |
| Recognition | All 5 pilots received level 3 recognition after two years |
| **Health information technology** | Registry building | Build new registries for targeted conditions |
| New decision support | Defaults and clinical messaging built into electronic health records |
| Reporting functions | Augment use of routine and specific condition reports |
| Patient access | Allow patients access to their medical record and foster communication between providers and patients through the EHR system |
| Tracking | Enable tracking of referrals, lab test results, medication lists, and outcomes |
| EMR and billing integration | Implement combined EHR-billing suite so billing information, diagnosis codes, and insurance are integrated with health records |
| **Staffing** | New dedicated care coordinator | Hire nurse care managers to improve care coordination |
| Dedicated time for QI work for staff | Use funds to take physicians and staff off-line for QI activities |
| New clinical quality coordinator | Hire coordinator in charge of entering, extracting, and analyzing quality improvement data |
| Expand roles for current staff | Increase time and responsibility for current medical assistants, nurses, and others to work at the top of their licenses and take on more clinical responsibility |
| Expand workforce | Hire new physicians and other providers, such as behavioral health workers, social workers, nurses, and others |
| **Culture change** | Team-based care | Evolving team roles and membership and improved sense of team cohesiveness |
| Population-based approach | Providing proactive – as opposed to reactive – patient care |
| Defined accountability | Define roles more clearly so individual responsibilities are clarified |
| Patient engagement | Implement focus groups, advisory groups and surveys to gauge patient’s opinions and recommendations |
| **Quality Improvement** | Measurement and internal reporting of quality metrics | Measure, track, and report quality measures for each physician |
| PDSA cycles | PDSA cycles to target evidence-based measures for diabetes, CAD, and depression |
| Competition among teams | Friendly competition among teams to encourage quality improvement initiatives in order to improve outcomes |
| Outreach to specialists | Service agreements, meetings, and tracking of patients that were referred to specialists |
| Outreach to hospitals | Patient tracking, admissions protocol, meetings, shared data, hospital logs, outcomes, etc. |
| Outreach to pharmacists | Inform doctors whether patients are filling their prescriptions |
| **Expanded Access to Care** | Extended hours | Extend clinic hours on evenings and weekends |
| Urgent care clinic | Provide shorter, more focused urgent care visits when relevant to avoid unnecessary ER visits |
| Same day appointments | Hire new individuals, free up space, limit waiting, and shorten visit times to enable appointments for walk-in patients |
| Decrease wait times |  |
| Greater use of email and telephone consults | Expand access to physicians via email or phone when the practice is closed to avoid unnecessary ER or hospital visits |
| **CSI Collaborative activities** | Benefits from collaboration | Share best practices between sites and reach out externally for advice and support |
| Compare data | Run charts for common measures made transparent to participants |
| Unity with payers, providers, and legislators | Collaboration between payers, providers and legislators to address policy issues they face |

**Key Elements of Colorado PCMH Pilot Activities**

|  |  |  |
| --- | --- | --- |
| **Category** | **Component** | **Description** |
| **PCMH recognition** | Policy development | Practices established new policies and protocols for care management, care coordination and other elements of PCMH |
| Documentation | Policies were documented and disseminated to staff, required documentation for NCQA was completed |
| Submission | Applications were uploaded, errors corrected |
| Recognition | 14 Practices awarded Level 3 and 2 Practices awarded Level 2 PCMH recognition |
| **Health information technology** | Registry building | Build new registries for targeted conditions or learned how to use EHR as an embedded registry |
| New decision support | Defaults and clinical messaging built into electronic health records |
| Reporting functions | Augment use of routine and specific condition reports |
| Patient access | A few practices implemented a patient portal |
| Tracking | Some practices implemented formal tracking process for tracking of referrals and lab results |
| Data Use | Monthly reporting of clinical quality measures |
| **Staffing** | New dedicated care coordinator/care managers | Hire nurse care managers to improve care coordination. Practices hired different levels of care coordinators managers including: Medical Assistants (most), RNs, LCSW, Nurse Practitioners, and Physician Assistants |
| Dedicated time for QI work for staff | Use funds to take physicians and staff off-line for QI activities |
| Project Manager/Quality Improvement Specialist | Two practices hired administrative support staff to help with data extraction, data entry, and as the champion for quality improvement work |
| Expand roles for current staff | Increase time and responsibility for current medical assistants, nurses, and others to work at the top of their licenses and take on more clinical responsibility |
| Expand workforce | Hire new physicians and other providers, such as behavioral health workers, social workers, nurses, and others |
| **Culture change** | Team-based care | Evolving team roles and membership and improved sense of team cohesiveness |
| Population-based approach | Providing proactive- as opposed to reactive – patient care |
| Defined accountability | Define roles more clearly so individual responsibilities are clarified |
| Patient engagement | Implement focus groups, advisory groups and surveys to gauge patient’s opinions and recommendations |
| **Quality Improvement** | Measurement and internal reporting of quality metrics | Measure, track, and report quality measures at the practice and in some cases at the provider level |
| PDSA cycles/Improvement plans | PDSA cycles to target evidence-based measures for diabetes, CAD, and depression |
| Competition among teams | Friendly competition among teams to encourage quality improvement initiatives in order to improve outcomes |
| Outreach to specialists | Service agreements, meetings, and tracking of patients that were referred to specialists |
| Integration of behavioral health | Improved integration of behavioral health through co-location, hiring, or reliable referral |
| Outreach to hospitals | Patient tracking, admissions protocol, meetings, shared data, hospital logs, outcomes, etc. |
| Patient Outreach | Population management, follow up ED discharge including patient education, follow-up on hospitalizations |
| **Expanded Access to Care** | Extended hours | Extend clinic hours on evenings and weekends |
| Urgent care clinic | Provide shorter, more focused urgent care visits when relevant to avoid unnecessary ER visits |
| Same day appointments | Hire new individuals, change scheduling policy, free up space, limit waiting, and to enable appointments for walk-in patients |
| Decrease wait times | Cycle time reporting and improvement plans |
| Greater use of email and telephone consults | Expand access to physicians via email or phone when the practice is closed to avoid unnecessary ER or hospital visits with access to EHR after hours most of the time |
| **CSI Collaborative activities** | Multiple Modalities | Coaching, in-person learning collaboratives, webinars, conference calls, networking |
| Benefits from collaboration | Share best practices between sites and reach out externally for advice and support |
| Compare data | Red-Yellow-Green report on clinical quality measures made transparent to practices |
| Unity with payers, providers, and patients | Collaboration between payers, providers and patients to address policy issues they face |

**Appendix 3: Survey of Practice Environment and Satisfaction in PCMH Pilots**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. **How long have you worked at the practice?** | Less than 6 months | 6-12 months | 1-2 years | More than 2 years |
|  | □1 | □2 | □3 | □4 |

1. What is your job title?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. **Please indicate how much you agree or disagree with the following statement.** | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
| Overall, I am satisfied with my current job | □1 | □2 | □3 | □4 | □5 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. **In a typical day at the practice, how often do you do the following activities?** | Never | Rarely | Sometimes | Frequently |
| 1. Communicating with insurance companies (example: obtaining prior authorizations) | □1 | □2 | □3 | □4 |
| 1. Communicating with pharmacies (example: medication refills) | □1 | □2 | □3 | □4 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. **To what degree do the following statements reflect the conditions in your practice?** | Not at all |  |  | To a great extent |
| 1. We emphasize patient satisfaction. | □1 | □2 | □3 | □4 |
| 1. We have very good methods to assure that our physicians change their practices to include new technologies and research findings. | □1 | □2 | □3 | □4 |
| 1. Quality of care is goal one. | □1 | □2 | □3 | □4 |
| 1. We have developed a common standard of care. | □1 | □2 | □3 | □4 |
| 1. Our clinical leadership is concerned with quality of care issues. | □1 | □2 | □3 | □4 |
| 1. We rely heavily on electronic information systems to provide cost effective care. | □1 | □2 | □3 | □4 |
| 1. We rely heavily on computer-based information when seeing a patient. | □1 | □2 | □3 | □4 |
| 1. Candid and open communication exists between physicians and other practice staff. | □1 | □2 | □3 | □4 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. **In a typical week at your practice, approximately how often is it…** | Never | Rarely | Sometimes | Frequently |
| 1. … difficult to provide high-quality care to patients seen in your practice? | □1 | □2 | □3 | □4 |
| 1. … difficult to provide safe care to patients seen in your practice? | □1 | □2 | □3 | □4 |
| 1. … difficult to spend enough time with patients to meet all of their medical needs? | □1 | □2 | □3 | □4 |
| 1. … difficult to spend enough time with patients to address all issues that affect their health? | □1 | □2 | □3 | □4 |
| 1. … difficult to have medical records available at the time of office visit? | □1 | □2 | □3 | □4 |
| 1. … difficult to track and follow up test results? | □1 | □2 | □3 | □4 |
| 1. … difficult to track the medications your patients are taking? | □1 | □2 | □3 | □4 |
| 1. … difficult to communicate with outside specialists who are caring for a patient seen in your practice? | □1 | □2 | □3 | □4 |
| 1. … difficult to communicate with hospital-based providers who are caring for a patient seen in your practice? | □1 | □2 | □3 | □4 |
| 1. … difficult to communicate with emergency departments caring for a patient seen in your practice? | □1 | □2 | □3 | □4 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. **Which best describes the atmosphere in your office?** | Calm |  | Busy, but reasonable |  | Hectic, chaotic |
|  | □1 | □2 | □3 | □4 | □5 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. **Please indicate how much you agree or disagree with the following statements:** | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
| 1. I feel a great deal of stress because of my job. | □1 | □2 | □3 | □4 | □5 |
| 1. Very few stressful things happen to me at work. | □1 | □2 | □3 | □4 | □5 |
| 1. My job is extremely stressful. | □1 | □2 | □3 | □4 | □5 |
| 1. I almost never feel stressed at work. | □1 | □2 | □3 | □4 | □5 |

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **Using your own definition of “burnout,” please indicate which statement best describes your situation at work.** | | **Check ONE box below:** | |
| I enjoy my work. I have no symptoms of burnout. | □1 | |  |
| Occasionally I am under stress, and I don’t always have as much energy as I once did, but I don’t feel burned out. | □2 | |  |
| I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion. | □3 | |  |
| The symptoms of burnout that I’m experiencing won’t go away. I think about frustrations at work a lot. | □4 | |  |
| I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help. | □5 | |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. **What is the likelihood that you will leave your current practice within TWO YEARS?** | None | Slight | Moderate | Likely | Definitely |
|  | □1 | □2 | □3 | □4 | □5 |

|  |  |  |
| --- | --- | --- |
| **11. Please indicate your gender** | Female | Male |
|  | □1 | □2 |

**THANK YOU for completing this survey. Please return it in the postage-paid envelope.**

**Appendix 4: Interviews with PCMH practice leaders at baseline, 18 months and 30 months**

**Baseline**

1. What does the PCMH mean to you? Probe: What are essential elements? What outcomes will it produce? How radical is the change embodied by the PCMH?
2. To what extent are you already operating as a PCMH as you’ve defined it?
3. Why did the practice get involved in trying to become a PCMH? Probe: To what extent was participation motivated by the need for a new payment model or financial sustainability concerns?
4. How committed are practice leaders to the principles embodied by the PCMH concept, as defined by the program?
5. How committed are practitioners in your practice to the principles embodied by the PCMH concept? How motivated are they to making the changes required to become a PCMH?
6. What about the PCMH principles is compatible with your group’s culture, preferences, and current work practices? What is not compatible? Are there differences among practitioners, e.g., by discipline, age, gender?
7. Tell us about what you have done so far to transform the practice. How have you organized this work? How involved are physicians and staff (all of them?

Probe for things we expect will need to change, e.g., staff mix, staff compensation.

1. How much change do you believe is still required for your practice to become a PCMH?
2. What do you anticipate the challenges will be in becoming a PCMH? Probe for things we expect will be challenging, e.g., staff resistance.
3. What are you doing to address these obstacles?

**At approximately 18 months**

1. When we spoke with you at the beginning of the pilot, we asked you what the “medical home” meant to you. Now that it’s a year later, how has your personal definition or your practice’s definition of the medical home changed, if at all? *Probe: Are there aspects of the medical home that seem more or less important or applicable to your practice?*
2. What have you done over the course of Year 1 toward becoming a PCMH? Please describe specific changes in the practice that are ongoing or have been completed as a result of the pilot.
3. For the practice as a whole, what have been the most challenging aspects of your efforts to change practice? The most surprising? *Probe: For different types of staff members, were there any particular challenges? For example, were there challenges that seemed to be unique to doctors, nurses, or medical assistants?*
4. What has been most helpful to your efforts to change practice? *Probe: Has the pilot provided resources (financial or non-financial) that enabled changes you could not have otherwise made?*
5. Have you solicited patient feedback about the process? Do patients seem to be aware of the changes your practice has made? (If not already clear) How can you tell? Are there things you’ve accomplished that you believe are not apparent to your patients, but may still be important.
6. How have the structural and technological changes required in becoming a PCMH promoted or interfered with the provision of effective, patient-centered clinical care? *Probe: In your opinion, has the “patient-centered” part of the clinical home been more difficult to achieve because of additional requirements delineated by NCQA or others?*
7. How has the pilot affected the culture of the practice? (e.g., from physician-centered care to team approach; from physician-directed care to shared physician-patient decision making). *Probe: Are there new staff meetings devoted to patient experience or quality of care? Have the relationships between staff members changed (e.g., the way medical assistants interact with doctors and nurses)?*
8. *(If not answered in 7)* How have the staff’s roles changed or evolved during Year 1? Have the staff members experienced “change fatigue”?
9. What kinds of changes do you believe would still be required for your practice to become an “ideal” PCMH, as you define it? Which of these do you plan to undertake in the near term? What major hurdles must your practice overcome to succeed and how do you plan to surmount these obstacles?
10. What early lessons can you take away from Year 1 of the pilot? What has been successful? What has been especially challenging? Why?
11. If a leader of another practice were considering participation in a medical home demonstration project, what advice would you have for that leader?

**At approximately 30 months**

1. What aspects of your practice’s transition to a patient-centered medical home have been the most successful to date? Where do you see the most room for improvement? How do you define success/failure, and what measures or changes would you point to in particular (e.g., cost savings, quality improvements, replication by others, physician and staff satisfaction, patient satisfaction, cultural transformation, collaboration with medical neighbors)?
2. Reflecting on your practice’s path towards becoming a PCMH, what factors have been most critical to your accomplishments? (e.g., resources provided by the pilot, leadership, cultural changes, learning orientation, operational changes)
3. Are there ways in which the medical home model has changed people's job satisfaction?  What has been most important for changes in job satisfaction?  As you look to the future, what are two or three things that would most contribute to improving job satisfaction in medical homes?
4. What is your experience in establishing a medical neighborhood? What obstacles have you encountered? How important is the strength of the medical neighborhood to the success of the medical home? *Probe:* *Who are the neighbors and how extensive are your collaborations? To what extent do your medical neighbors have an infrastructure that supports collaboration (systems, processes, staff, shared EHR, etc.)?*
5. How have you engaged patients in the practice’s improvement? (e.g. obtained feedback through patient surveys or advisory councils) Do you think patients will (or do) see Patient Centered Medical Homes as an attractive alternative to standard practices? For what aspects of the PCMH have your patients acknowledged/expressed support?
6. If you were designing a PCMH pilot, what major elements would you incorporate? (e.g., enhanced payment, collaboration with pilot practices, in-office coaching, technical assistance, other in-kind investments) What advice would you have for practice leaders participating in your demonstration? *Probe: Which components would you import from the CSI-RI PCMH pilot and what (if any) major changes would you make?*
7. How would you assess your progress to date relative to where you thought you might be now when you began the pilot? *If not already answered:* Are there any components of the medical home that are not in place? If so, what factors have prevented your practice from actualizing these elements?