Washington Patient-Centered Medical Home Collaborative

A joint project of the Washington State Department of Health and the Washington Academy of Family Physicians

Cliff Notes to Emerging Outcomes from Demonstration Projects
Patient-Centered Medical Home and the Transformation of Primary Care
January 2010

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GOAL:
Provide a succinct summary of the most recently described change strategies and outcomes related to patient-centered medical home and the transformation of primary care.

PURPOSE:
Assist the faculty, coaches ,leadership and participants of the Washington Patient-Centered Medical Home Collaborative to plan for learning sessions ,team consultations and quality improvement using a synthesis of current knowledge.

CONTENTS:
1. Bibliography
2. A summary of recent key literature listed by source, with excerpts of key change strategies, evidence reported, challenges noted and qualitative lessons learned. ("Cliff Note" format)
3. Definitions of relevant terms

Cliff Notes to Emerging Outcomes
Bibliography

Please note: Numbers in parentheses at end of citation correspond to document sequence

Bodenheimer (March 6, 2008). Coordinating Care: A Perilous Journey through the Health System. *New England Journal of Medicine.*   (12)

Brown (March 2009). The Promise of Care Coordination: Models that Decrease Hospitalizations   and Improve Outcomes for Medicare Beneficiaries with Chronic Illness. *A Report Commissioned by the National Coalition on care Coordination*. Mathematica Policy Research   (9)

Coleman, Eilertson, Kramer, Magid, Beck, Connor (March-April 2001). Reducing Emergency Visits in Older Adults with Chronic Illness: A randomized controlled trial of group visits. *Effective Clinical Practice*. Volume 4 Number 2   (6)

Gottilieb, Sylvester, Eby (January 2008). Transforming your Practice: What Matters Most. *Family Practice Management.*   (2)

Grumbach, Bodenheimer, Grundy (August 2009). The Outcomes of Implementing Patient-Centered Medical Home Interventions: A Review of the Evidence on Quality, Access and Costs. *Recent Prospective Evaluation Studies.* pcpcc.net   (1)

Milstein (September-October 2009). Gilbertson American Medical Home Runs. *Health Affairs*. Volume 28 Number 5   (11)

Milstein, Kothari (October 20, 2009). Are Higher Value care Models Replicable? *Health Affairs Blog.*   (7)

Nutting, Miller, Crabtree, Jaen, Stewart, Stange (May/June 2009). Initial Lessons from the First National Demonstration Project on Practice Transformation to a Patient-Centered Medical Home. *Annals of Family Medicine.* Volume7 Number 3   (8)

O'Malley, Tynan, Cohen, Kemper, Davis (April 2009). Coordination of Care by Primary Care Practices: Strategies, Lessons and Implications. *Center for Health System Change Research Brief.*   (5)

Paulus, Davis, Steele (September/October 2008). Continuous Innovation in Health Care: Implications of the Geisinger Experience. *Health Affairs.* Volume 27 Number 5   (4)

Reid, Fishman, Yu, Ross, Tufano, Soman, Larson (September 2009). Patient-Centered Medical Home Demonstration: A Prospective, Quasi-Experimental Before and After Evaluation. *The American Journal of Managed Care*. Vol. 15, No. 9   (3)

Rosenthal (September/October 2008) The Medical Home: Growing Evidence to Support a New Approach to Primary Care. *JABFM*. Volume21 Number 5   (10)

SUMMARY OF LITERATURE IN "CLIFF NOTE" FORMAT

ARTICLE REFERENCE

1. Grumbach, Bodenheimer, Grundy (August 2009). The Outcomes of Implementing Patient-Centered Medical Home Interventions: A Review of the Evidence on Quality, Access and Costs. *Recent Prospective Evaluation Studies.* pcpcc.net

KEY CHANGE STRATEGIES

Report on 8 projects
1. *Group Health Cooperative of Puget Sound*
2. Community Care of North Carolina
3. Health Partners Medical Group Bestcare PCMH Model
4. ***Geisinger Health System ProvenHealth Navigator PCMH Model***
5. Genesee Health Plan HealthWorks PCMH Model
6. Colorado Medicaid and SCHIP
7. Intermountain Healthcare Medical Group Management Plus PCMH Model
8. John Hopkins Guided Care Model

Because #1 and # 4 (Italics) are directly referenced in other articles and will not be summarized here**.**

Community Care of North Carolina
Project summary:
 10 years of experience with 1,300 community based practice sites with approximately 4,500 primary care clinician throughout North Carolina.
- Nurses collaborate with primary care to manage "high risk" patients.
- $3 per member per month fee paid to each practice contingent on tracking clinical data
- Technical assistance to practices to improve chronic care services.

Health Partners Medical Group Bestcare PCMH Model
Project summary:
700 physician group, part of a consumer-governed health organization in Minnesota.
- Proactive chronic disease management in the PCMH through phone, computer and face-to-face coaching.
- The program also emphasized more convenient access to primary care through:
    - online scheduling,
    - test results,
    - email consults
    - post-visit coaching**.**

Genesee Health Plan HealthWorks PCMH Model
Project summary:
Four year longitudinal evaluation of PCMH to serve 25,000 uninsured adults in Flint, Michigan.

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- Team approach to improve health and reduce costs
- Health Navigator works with primary care clinicians to support patients to:
    - Adopt healthy behaviors
    - Improve chronic and preventive care
    - Link to community resources

Colorado Medicaid and SCHIP
Project summary:
150,000 low income children in the state Medicaid and SCHIP program, 97 practices with 310 physicians .
Primary care practices who qualify as a PCMH must have:
- 24/7 access
- Open or advanced access scheduling systems
- Provide care coordination

Practices are then eligible for extra P4P indexed at "EPSDT" metrics

Intermountain Healthcare Medical Group Management Plus PCMH Model
Project summary:
Part of an integrated delivery system in Utah, implementation began in 2001, a 2 year-long "well-designed" evaluation.

Care Management plus PCMH model focuses on:
- Primary care based care coordination of high risk elders
- RN care managers embedded in primary care practices
- Enhance EMR to support chronic care and care coordination.

John Hopkins Guided Care Model
Project summary:
John Hopkins Bloomberg School of Public Health Guided Care PCMH model developed by an interdisciplinary team, initial study of 904 patients.
RNs focus on Medicare patients in the top quartile of health risk.
- RN Primary care physician teams working in community based practices.
- Guided Care RN's:
- Coordinate care
- Monitor patients
- Teach patients and families self-management skills
- Self-management skills includes recognition of worsening symptoms that can be addressed *before* an ER visit or hospitalization becomes necessary

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

SUMMARY FINDINGS:
- Quality of care, patient experience, care coordination and access are improved.
- Investments in primary care create reductions in ED use and inpatient hospitalizations that produce savings in total cost. These savings "at minimum offset the new investments in a cost-neutral manner and in many cases appear to produce a reduction in total costs per patient."

Community Care of North Carolina

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- 94% of patients with asthma received maintenance medications
- Diabetes quality measures improved by 15%
- 40% decrease in hospitalizations for asthma,
- 16% lower ER Visit rate,
- Total annual savings to the Medicaid and SCHIP programs are calculated to be $135 million for "TANF-linked" population
- Total annual savings to the Medicaid and SCHIP programs are calculated to be $400 million for the aged, blind and disabled populations.

Health Partners Medical Group Bestcare PCMH Model
5 year evaluation as reported by IHI:
- 129% increase in patients using optimal diabetes care,
- 48% increase in patients receiving optimal heart disease care.
- 350% reduction in appt waiting time
- 39% decrease in Emergency room visits
- 24% decrease in admissions

Genesee Health Plan HealthWorks PCMH Model
4 year longitudinal study
- 72% of all uninsured adults in the county can now identify a primary care practice as their medical home.
- 137% increase in mammography screenings
- 36% reduction in smoking and "improvements in other healthy behaviors."
- 50% decrease in ER visits
- 15% fewer inpatient hospitalizations
- Total hospital days per 1,000 enrollees now cited as 26.6% lower than competitors.

Colorado Medicaid and SCHIP
- 72% of children have had well child visits compared to 27% of controls.
- Median annual costs were $785 for PCMH children compared to $1,000 for controls due to "reduction on ER visits and hospitalizations."

Intermountain Healthcare Medical Group Management Plus PCMH Model
- "Well designed" controlled 2 year evaluation published in peer review journals.
- Absolute reduction of 3.4% in 2 year mortality. (13.1% died in PCMH group and 16.6 % died in control)
- 10% relative reduction in total hospitalizations, with even greater reductions among the subset of patients with complex chronic illnesses.
- Net reduction in total costs was $640 per patient per year ($1,650 among highest risk patients)
Now being implemented at more than 75 practices in more than six states.
(Dorr et al., 2007a, Dorr et al., 2008.)

John Hopkins Guided Care Model
Preliminary evaluation after 8 months of a cluster, randomized trial of the model involving 904 patients-published in a peer review journal.
- 24% reduction in total hospital inpatient days
- 15% fewer ER visits
- 37% decrease in skilled nursing facility days

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- Annual net Medicare Savings of $1364 per patient and $75,000 per nurse deployed in a practice.

ARTICLE REFERENCE

2. Gottilieb, Sylvester, Eby (January 2008). Transforming your Practice: What Matters Most. *Family Practice Management.*

KEY CHANGE STRATEGIES

Product is focus of mission & operating principles
- Core product = longitudinal, personal, trusting relationships with customers; not tests, diagnoses and pills.

Role changes
- Customer is in control and makes the decisions; defines needs, goals of treatment and values to be applied.
- Provider/staff role = provide expertise, keep track of preventive care, explain options and make recommendations.

Patient input
Use multiple strategies to obtain input on patient experience

Care team structure
Small integrated primary care team and patient selects their doctor,
Each doctor has a team composed of:
- 1-2 MAs
- a full time RN who provides care coordination,
- An administrative assistant who provides case management support.
- Behavioral health staff are integrated into the care team, become primary to those for whom it is appropriate.

All work to top of their license: doctors give work to nurses, nurses to administrative support, etc.

Expanded team concept
- Specialists, nutritionist, pharmacists, or midwives are assigned to work with specific teams.

Remove barriers to care/Expanded access
- Same day appointments: 70% to 80% of appointment slots are open at the start of the day.
- 2/3 of the teams give out a direct phone line to their panel. The staff discuss with the caller whether the patient will meet with the case manager, behavioral health staff member, MA or doctor, usually the same day.
- Email and phone is used as needed (although there is no payment for either)

Significant training is provided to all staff
- Staff members, particularly front line staff members are critical in building relationships in health care.
- A lot of time is given to helping employees to understand their role.
- All new hires have a week-long orientation and front-desk staff get two additional weeks of training.
- Every employee is required to be familiar with basic quality improvement methods and to apply them in their work.
- After initial training, front office staff and medical assistants participate in a 6 month mentoring system.

Teams share their results
Teams are rated by:
- clinical quality measures

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- patient experience factors
- Team ratings are shared among teams.
- Teams are given the time together to discuss methods of achieving success.

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

SUMMARY FINDINGS:
Customer –driven approach led to improved outcomes and satisfaction.

QUALITATIVE LESSONS LEARNED
Role changes
- When given control and partnership in decision making over time, customers make knowledgeable decisions about their treatment and generally chose less aggressive treatment than medical professionals (cite #2 from article).

Patient input
- SCF uses 10, including surveys, focus groups, mystery shoppers, project teams and advisory councils.

Care team structure
- Object = patient sees same team every time.
- A team that doesn't manage its schedule efficiently suffers the consequences and stays late.
- This forces the team to manage minor issues on the phone or by email and hand off work to case managers.
- Panels = 1,200 and they open and close panels to keep size stable.
- They adjust panel size by age and gender but not by severity; believing that when patients chose select their own doctor a random distribution of complexity occurs**.**
- The expanded team concept reinforces the relationships among team members which produces more effective care.

Remove barriers to care/Expanded access
- Often the team members are meeting with patients in parallel and this improves access and reduces waiting times because more people move through the clinic in the same amount of time.
- They have found that they lose money on low level office visits. Physician reimbursement is based on team performance.

Significant training is provided to all staff
- Behavioral-based interviewing ("Tell us about a time you encountered an angry customer." vs. "Tell us a bit about yourself.") is more effective in selecting new hires.

EVIDENCE REPORTED
SCF success since beginning changes in 1999
Each year the population served increases 7% but the funding increases only 2% with the following results of these methods.
- A 40% in urgent care and ER use, a 50% decrease in specialist use, and a 30% decrease in hospital days are attributed to the relationship-based approach, same-day access and better management of chronic conditions.
- Clinical quality data from Medicaid children showed "perfect care" 85% of the time for children with asthma (from 35%),

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- HIV positive hospital admissions went from 22% to 8%,
- Childhood immunizations went from 85% to 94%.
- By implementing same-day access they reducing the behavioral health wait-list form a back log of 1,300 to zero in one year.
- Achieved a 91% patient satisfaction rating.

ARTICLE REFERENCE

3. Reid, Fishman, Yu, Ross, Tufano, Soman, Larson (September 2009). Patient-Centered Medical Home Demonstration: A Prospective, Quasi-Experimental Before and After Evaluation. *The American Journal of Managed Care*. Vol. 15, No. 9

KEY CHANGE STRATEGIES

Structural and team changes
- Smaller physician rosters
- Physician/medical assistant pairing
- Team member co-location
- Longer standard visits
- Automated phone call routing system
- Dedicated desktop medicine time

Point of care changes
- Communication of team roles to patients
- Promotion of email and phone visits
- Pre-visit chart review and visit planning
- Real-time specialist consulting re: EMR
- Collaborative care planning
- Motivational interviewing techniques
- EMR "best practice" alerts
- EMR Health maintenance reminders
- Promotion of patient Web portal functions
- Redirect consulting nurse calls to team

Patient outreach changes
- New patient outreach
- Emergency visit and inpatient follow up
- Chronic disease medication outreach
- Outreach using care deficiency reports
- Group visit outreach
- Mailed birthday reminder care letters
- Abnormal test outreach
- Promotion of electronic health risk assessment (e-HRA)
- Promotion of self-management workshops

Management changes
- Daily team huddles
- Visual reporting system to track changes

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- Rapid process improvement cycles
- Salary only physician compensation

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

EVIDENCE REPORTED

- Improved patient experience
- Decreased physician burnout
- Increased investment of $16 per patient per year recouped in 12 months by decrease in utilization, particularly in emergency services.
- Improvement in "composite" measures of clinical quality
- Integration of email, telephone visits, and proactive care activities "integrated into workflow"by 12 months.

CHALLENGES NOTED

- Largely capitated nature of enrollment and salaried physicians makes the applicability to fee-for-service settings unclear. (exemption from RVU based variable compensation model)
- Multiple design components implemented at the same time makes it difficult to discern if particular elements were more or less responsible for the effects.

ARTICLE REFERENCE

4. Paulus, Davis, Steele (September/October 2008). Continuous Innovation in Health Care: Implications of the Geisinger Experience. *Health Affairs.* Volume 27 Number 5

KEY CHANGE STRATEGIES

Improvement strategies

- Highly collaborative change teams include clinical, operational, financial, payer, patient or consumer participants.
- Design teams specifically target:
  - those provider services with the largest impact by patient population or resource consumption,
  - those with evidence based or consensus derived best practice and readily available metrics,
  - those with the most interest from clinical champions or consumers
  - or those with observed outcomes farthest from expected performance.
  - Leaders select initiatives that meet preceding criteria and are most likely to produce impact quickly.
- A clinical business case is developed.
- Uses any number of improvement methods without exclusively focusing on a single approach.
- "Organization's permission to try, fail, learn from failure and ultimately succeed."
- Aligned incentives; teams directly link redesigned care processes to expected efficiency and quality goals.

Practice Innovations

- Personal Health Navigator; person who focuses on evidence based care to prevent hospitalization, respond to consumer inquiries, promote health and optimize management of chronic illness.
- Care "flows" for high prevalence chronic illnesses with a systematic, coordinated approach.

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- Home based monitoring

- Use of written patient "compacts" signed by patient and provider to highlight the care partnership
- Standardized clinical practices with an information summary before the patient enters the exam room
- Support for end of life care decisions

- 24/7 access to primary/specialty care
- Nurse coordinator in each practice site
- Automated reminders to both the clinical team and patient.
- Self-scheduling option
- After visit summaries provided to patient comparing progress to goal and an explanation of the risks associated with failing to meet the goal.
- Financial incentives linked to patient satisfaction, quality and value goals.
- Predictive analytics to identify risk trends
- "Virtual" care management support
- EHR access for all participants including physicians, care managers and patients via "Patient Portal'
- Practice based payments
- Performance reports using "all-or-none" bundled scores

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

EVIDENCE REPORTED
1. "Early evidence" showed a 20% reduction in "all cause" admissions to hospitals.
2. 7% decrease in overall cost.
3. $3,800 per year drug cost savings for chronic kidney disease patients who received "remote care management."

CHALLENGES NOTED
- Separate payers with fears of anti-trust may not be able to replicate the Geisinger experience without significant reforms to realign financial incentives away from fee-for –service.
- New mechanisms are needed to "support collaboration and coordination of policies among private insurers and public programs."

QUALITATIVE LESSONS LEARNED
Enabling factors that made innovation possible:
- Health information technology infrastructure is viewed as an "enabling" factor for the success.
- Committed staff with an "entrepreneurial bent" seen as an advantage
- Solid financial base
- Organizational permission to try, fail, learn from failure and ultimately succeed.

Other lessons learned:
- A focus on empirical data mining and direct performance measurement from the beginning of each initiative is essential.
- A willingness to actively engage patients in care design and delivery, even when it is unclear how best to do so, can produce substantial progress.
- Linking financial and quality budgets together provides an organizing framework.
- Failure can offer tremendous insights.

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ARTICLE REFERENCE

5. O'Malley, Tynan, Cohen, Kemper, Davis (April 2009). Coordination of Care by Primary Care Practices: Strategies, Lessons and Implications. *Center for Health System Change Research Brief.*

KEY CHANGE STRATEGIES

Four categories of care coordination
1. **Within practice including with patient/family caregivers**
   - In practice referral coordinator
   - Pods/teamlets
   - Restriction of panel size
   - Links to community based care coordinators
   - Specialized outpatient programs for certain high risk populations, with home visit component
   - "Cluster" encounters, team based care for specific conditions
   - Phone triage and open access systems
   - designated call in periods for patients to speak directly with physician
   - Encouraged caregiver/family involvement as "invaluable team members."
   - Self-management
   - Medication coordination
   - Systems to identify self-referrals and specialist cross referrals
   - Use of huddles, HIT and standardized clinical processes.
   - Planned care visits
   - E-mail with patients
   - Delegation of some coordination tasks to non-physicians.

2. **Between practices**
   - Limiting referral networks
   - E-referrals
   - Co-location of primary care and specialty care
   - PCP-Specialists service agreements
   - Referral tracking systems
   - Well constructed referral notes
   - Effective phone communication between providers
   - Enlisting patient assistance in information transfer.

3. **Between primary care and hospital settings**
   - PCP's provide inpatient care
   - Advance practice nurses for care transitions
   - Care transitions programs
   - PCP working closely with hospitalists
4. **Community based services** (generally less common and tend to be grant funded)
   - Web based common registries
   - Interoperability of health records

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

CHALLENGES TO COORDINATION:
Patient factors
- Tendency of some patients to self-refer to numerous specialists.
- Misunderstanding of recommendations*

(*May be considered a failure by providers to "close the loop" and ask for playback of instructions by the patient and family to ensure understanding.)

- Risky behavior

Physician factors
- "Culture of non-communication and non-ownership of coordination" among providers, described as a direct result of lack of incentives in the reimbursement system for coordination.
- "Lack of emphasis in medical schools and residency around coordination of care."
- Extensive conversation is required to build coordination structures and processes across providers and settings.

System factors
- "Although coordinated care would likely lower overall costs to the patient and health care system over time, immediate costs are borne by physicians."
- Health plan specialists' networks are a barrier to coordination when inconsistent with primary care referral base.
- Frequent changes in provider networks
- Disruptive and frequent changes to drug formularies
- Administrative burden for referrals

QUALITATIVE LESSONS LEARNED
Commitment to interpersonal continuity
- Ensure patient is familiar with team members
- Teams present a challenge to coordination if multiple people are in communication with the patient.
- Delegation, role definition and training of each team member is important for efficiency.
- System support for standardization of office processes is important
- Strategies may need to vary in response to practice and patient characteristics.
- "Physician leadership, culture and control of the practice can foster attempts to improve coordination…"
- Balancing patient access with continuity and coordination is possible, e.g. blend of open access and planned care appointments.
- Chart prep, pre and post visit planning and planned care visits facilitate coordination.
- "Providers universally felt that financial support for coordination is necessary."

ARTICLE REFERENCE
6. Coleman, Eilertson, Kramer, Magid, Beck, Connor (March-April 2001). Reducing Emergency Visits in Older Adults with Chronic Illness: A randomized controlled trial of group visits. *Effective Clinical Practice*. Volume 4 Number 2

KEY CHANGE STRATEGIES

Study Summary
- Monthly group visits for 146 chronically ill older adults (>60 years of age) in group model HMO (Kaiser Permanente) in Denver, CO. Another 147 chronically Ill older patients were assigned the control group for a total of 295 study participants spread across 19 participating physician practices.

- Monthly visits included a primary care physician, nurse and pharmacist and emphasized:
    - Self-management of chronic illness
    - Peer support
    - Regular contact with the primary care team
    - Attention to the psychosocial impacts of living with chronic illness.
- The 2- hour group visits used a standard format of warm up, presentation of a health topic, blood pressure checks, medication refills and immunizations, questions and answers on a health topic, the plan for the next meeting and then finished with a brief one-on-one visit with MD and or nurse.
- Initial group topics were offered by providers and later group topics were selected by group consensus.

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

EVIDENCE REPORTED
- 295 older adults with frequent utilization of outpatient services and one or more chronic illnesses demonstrated reduced emergency department utilization.
- On average patients in the intervention group attended 10.6 group visits during the 2 year study period. These patients averaged fewer emergency department visits (0.65 vs. 1.08 visits; P=0.005) and were less likely have any emergency department visits than controls. (34.9% vs. 52.4%; P=0.003)

CHALLENGES NOTED
- Conducted in a staff model HMO and it is not clear how transferable the model might be.
- Analysis focused on patients who expressed significant interest in group visit approach and the results may differ for patients who prefer care in an individual setting.
- The participants were not particularly frail, and were primarily unimpeded by cognitive impairments.

QUALITATIVE LESSONS LEARNED
Important characteristics of the intervention were hypothesized to be:
- Planned scheduled contact with the primary care team
- Focus on self-management
- Peer support from persons with similar illnesses
- Emphasis on prevention of short term and long term complications of chronic illness
- Use of information systems to support treatment priorities.
- Early problem identification and intervention
- Active coordination both within the primary team and between other care settings.
- Group visits provide a continuity of relationship that is distinct from simply having the same physician over time.

ARTICLE REFERENCE
7. Milstein, Kothari (October 20, 2009). Are Higher Value care Models Replicable? *Health Affairs Blog.*

KEY CHANGE STRATEGIES

"Common Pivotal" features;
- **Exceptional individualized care for chronic illness**, tailored to preventing ED use and unplanned hospitalizations for chronic illness. This commitment implicitly embedded several or all of the following "exceptional caring promises."
  - We will take enough time during office visits to fully understand your illness and self-management capability and fine tune your treatment plan.
  - Between office visits we will directly provide or mobilize the help you need to succeed in implementing your self-management plan with special emphasis on medication management.
  - We will serve your promptly 24/7 when you ask for urgent help between visits.
  - We will link you with a small group of carefully selected specialists with whom we actively coordinate.
  - We care personally about protecting you from health crises.

- **Efficient service provision**
  - Standardized care practices enables use of ARNP instead of MD, ARNP's with RNs. RNs with LPNs
  - Greater use of HIT
- **Careful selection of and coordination with medical specialists**
Concentration of referrals allows:
  - Greater standardization of treatment protocols
  - More reliable transfers of information
  - Greater clarity regarding division of responsibilities
  - Extend customer service model by reserving half day or full day of specialist's weekly schedules.

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

Practices selected as "home runs":
- Average annual per capita combined payer and patient out-of-pocket spending for all covered health services was at least 15 percent lower after adjusting for health spending risk factors such as age and diagnosis.
- Scores on publicly released or payer collected measures of quality and patient experience generally equaled or exceeded average regional scores.

Unique characteristics of the four offices described:
- Persistence
- Risk tolerance
- Instinct for leverage on clinical and financial outcomes
- Personal accountability-regarded emergency hospitalization and ED use as personal failure.

ARTICLE REFERENCE
8. Nutting, Miller, Crabtree, Jaen, Stewart, Stange (May/June 2009). Initial Lessons from the First National Demonstration Project on Practice Transformation to a Patient-Centered Medical Home. *Annals of Family Medicine.* Volume7 Number 3

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

QUALITATIVE LESSONS LEARNED
- Change requires a whole practice re-imagination and redesign and is much more than a series of incremental changes.
- The multiple components of PCMH are highly interdependent.
- Most current practice models are designed to enhance physician workflow. The PCMH should be designed to enhance the patient experience; this shift requires a transformation, not incremental change.
- New technology implementation is more difficult and time consuming than originally envisioned.
- To function in this team-based environment, physicians need facilitative leadership skills instead of the more common authoritarian ones.
- Focus must expand from one patient at a time to proactive population based approach, particularly for chronic care and prevention services.
- Physician/patient relationships much shift toward a style of relationship centered partnership to achieve patient goals rather than merely adhering to clinical guidelines.
- Transformation requires a strategic developmental approach that starts with assuring a strong structural core and implements small changes to build adaptive reserve.
- Transformation is a local process: tailor the approach to the practice.
- Assure adequate financial resources; transforming to a PCMH costs dollars.
- Assist physicians with their personal transformation: to learn the "new doctoring skills."
- NCQA should modify its accreditation process.
- Establish realistic expectations for time and effort required.
- Develop a practice technology plan; be flexible and reflective
- Monitor change fatigue
- Learn to be a "Learning Organization."

ARTICLE REFERENCE
9. Brown (March 2009). The Promise of Care Coordination: Models that Decrease Hospitalizations   and Improve Outcomes for Medicare Beneficiaries with Chronic Illness. *A Report Commissioned by the National Coalition on Care Coordination*. Mathematica Policy Research
    Key references:
    Chad Boult's 2008 survey of the literature - Findings from the Medicare Coordinated Care Demonstration Project (Peikes et. Al)

KEY CHANGE STRATEGIES

Three types of interventions demonstrated to be effective in reducing hospitalizations for Medicare beneficiaries with multiple chronic conditions who are in general not cognitively impaired:
- **Transitional care interventions** in which patients are first engaged in the hospital and then followed intensively over the 4-6 weeks after discharge by an advanced practice nurse.

- **Self-management interventions** that engage patients for 4-7 weeks in community based programs designed to "activate" them in the management of their chronic conditions. Education provided by a mix of medical and trained non-medical professionals.
- **Coordinated care interventions** that identify patients with chronic conditions at high risk of hospitalization, conduct initial assessments and care planning and providing ongoing monitoring of patient's symptoms and self-care working with the patient, primary care physician and caregivers to improve the exchange of information.

Six factors that distinguished the 3 of the 15 programs in the Medicare Coordinated Care Demonstration Project (MCCD) who were able to reduce hospitalization and costs over the first four years of operations

1. **Targeting**-target those at substantial risk of hospitalization in the coming year but not necessarily the most severe with high risk of repeated hospitalizations.
2. **In-person contact**-though all programs used some telephone contact, the successful programs averaged one in person contact per month, far higher than most unsuccessful programs.
3. **Access to timely information in hospital and emergency room admissions.** Learning about acute episodes in a very short time is critical factor. Patients are particularly vulnerable and there is a "heightened opportunity to explain how better adherence and self-care may prevent such occurrences."
4. **Close interactions between care coordinators and primary care physicians**-two primary factors affect the strength of the relationship:
   - the opportunity to interact face to face on occasion.
   - Same care coordinator working with all the program patients for given primary physician.
5. **Services provided**

All successful programs focus on:
   - Assessing
   - Care planning
   - Educating
   - Monitoring
   - Coaching self-management
   - Medication management is a particularly important driver of success
   - Some clients require social supports such as assistance with daily living activities, transportation or overcoming isolation. The successful programs had staff who could arrange these needed services.
6. **Staffing**

The MCCD program relies on registered nurses to deliver the "bulk of the intervention, with each patient assigned to a particular nurse coordinator to create rapport and preserve continuity with both the patient and the primary care physician.

For some patients, social workers provide valuable assistance with assessing eligibility and arranging services such as:
- Home delivered meals
- Transportation
- Emergency response systems
- Advanced care planning
- Coordination with home health agencies

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

EVIDENCE REPORTED
- Reduce hospitalizations.
- Reduce overall cost of care, and cover the cost of the intervention.

CHALLENGES NOTED
- If medical homes try to serve too broad based a population with all services, they are "unlikely to be successful."
- "That is, the medical home model, even if implemented well, is unlikely to generate savings for low risk cases." (pg.22)
- Large clinics, group practices and academic medical centers may be have the array of staff and resources to build these teams; small physician practices of one or two physicians (83% of practices and 45% of all physicians) have to link to community health teams (reference to Community Care of North Carolina)
- Large scale "disease management" telephonic programs have shown little or no success in credible randomized trials.
- Even the most successful MCCCD programs have generated reductions in Medicare costs of no more than $100 to $120 per member per month (PMPM) over their full population served and that is "barely enough to cover the program's fees, leaving no net savings. However, combining all three components* in a single program should yield greater cost reductions and could generate net savings."

*Transitional care interventions, Self-management interventions, Coordinated care interventions.

QUESTIONS/ISSUES
- How to identify the optimal target population for care coordination?
- Recent unpublished work conducted by the author and colleagues suggests that the target population for care coordination should include those who have high risk conditions (Congestive heart failure, coronary artery disease or Chronic Obstructive Pulmonary Disease) *and* who have a hospitalization in the past year plus those with any chronic conditions that have multiple hospitalizations in the past two years."
- Episodic versus continuous enrollment/eligibility for care coordination?
- How best to provide transitional care interventions?
- How to provide care coordination as efficiently as possible?
- What mix of medical care interventions and social service supports is most effective?

ARTICLE REFERENCE
10. Rosenthal (September/October 2008) The Medical Home: Growing Evidence to Support a New Approach to Primary Care. *JABFM*. Volume21 Number 5

KEY CHANGE STRATEGIES

Article summarizes the key elements of the Joint Principles of Medical Home:
- Team directed medical practice takes collective responsibility for ongoing patient care.
- Whole person orientation includes care for all stages of life: acute care, chronic care, preventive services and end of life or palliative care.
- Care is coordinated or integrated across all domains of the health system

Quality and Safety

- Evidence based medicine and clinical decision support tools should be incorporated into practice
- Physicians will accept accountability for continuous quality improvement through voluntary engagement in performance measurement
- Patients actively participate in decision making, including seeking feedback to ensure that patients' expectations are being met.
- Information technology has potential to support optimal patient care, performance measurement, patient education and communication.
- Practices go through a voluntary recognition process be any appropriate non-governmental entity to demonstrate that they have the capabilities to provide patient centered services consistent with the medical home model.
- Enhanced access to care through systems such as open scheduling, expanded hours, and new options for communication between patients, their personal physicians and office staff.

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

SUMMARY OF RESEARCH REVIEWED
- Patients who have a continuity relationship with a personal care physician have better health process measures and outcomes.
- Multiple visits over time with the same provider create renewed opportunities to build management and teaching strategies tailored to individual progress and receptivity.
- Minorities become as likely as non-minorities to receive prevention screening and have their chronic conditions well managed in a medical home model.
- The more attributes of the medical home that are present, the more likely patients are to be up to date on screening, immunizations and health habit counseling and the less likely they are to use emergency rooms.
- Continuity of care increases the likelihood that the provider is aware of psychosocial problems impacting health.
- Continuity has been shown to achieve quality at a lower cost.
- Full integration of primary medical care with mental health care improves outcomes in both arenas.

CHALLENGES NOTED/RELEVANT FACTS
- In primary care, patients present at most visits with multiple problems.
- Specialists generate more diagnostic hypotheses within their domain than outside and assign higher probabilities to diagnoses within that domain.
- Specialists practicing outside their area of expertise order more tests and make more referrals than generalists.
- Patients have more monitoring of more parameters of all their conditions if they received care within a continuous primary care physician relationship as opposed to a disease specific-specialty care.
- Patients with multiple co-morbidities require coordination of strategies across the co-morbidities.
- Specialists who feel unsupported by primary care will schedule more follow up appointments, many of which duplicate services provided by primary care.
- Only 36% of generalists and 20% of specialists survey their patients.

ARTICLE REFERENCE

11. Milstein, Kothari (October 20, 2009). Are Higher Value care Models Replicable? *Health Affairs Blog.*

KEY CHANGE STRATEGIES

IOCP (Intensive Outpatient Care Program) Medical Home model piloted at Boeing
Employees, pre-Medicare retires, adults spouses
- Predictive modeling from claims and prescription drug utilization data identified highest cost quintile.
- A teamlet dyad of a RN coach plus a PCP
- Not all the physicians at the clinics participated in the IOCP program.
- A clinic location near Boeing offices participated from Virginia Mason, Everett Clinic and Valley Medical Center IPA.
- The RN coach was the primary interface with the patient and provided intensive interaction by phone and email.
- Initiated by invitation from the patient's then PCP
- Upon entry to the program, the patient received:
    o a comprehensive face-to-face intake interview,
    o physical exam and diagnostic testing.
    o SF-12 and PHQ-9 scores were taken at intake and periodically throughout the pilot.
- The RNs provided self-management education to those patients with chronic diseases.
- Patients had access to the RN coaches by phone during business hours Monday – Friday.
- The dyad used daily planning huddles**.**
- A care plan was developed jointly with the patient.
- Specialists and behavioral health providers were directly involved in care planning for selected patients.
- The RN coaches were supported with weekly phone conferences with each other and a physician advisor who facilitated the conversation.
- The facilitator regularly provided speakers to the coaches on relevant topics, particularly behavior change.

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

IOCP (Intensive Outpatient Care Program) Medical Home model piloted at Boeing
- Control group= A group of Boeing employees and dependents with similar risk scores who were not invited to participate in the pilot, The costs of these two populations were compared for a 12 month period.
- Per capita spending dropped for the pilot participants by 20%; primarily in the areas of ER visits and hospitalizations.
- These savings were calculated net of the case management fees paid to the three clinics for management of the pilot participants.
- Other improvements for pilot participants compared to their baseline included:
    o A 14.8% improvement in SF12 physical functioning scores, and
    o A 16.1% improvement in SF12 mental functioning scores.
- Absenteeism in the pilot group was reduced by 56.5%.
According to program designers the participation of at least one large payer was required to:
- coordinate care
- and provide technical assistance such as the predictive modeling analysis and scores
- produce these successes

<div align="center">**ARTICLE REFERENCE**</div>

12. Bodenheimer (March 6, 2008). Coordinating Care: A Perilous Journey through the   Health System. *New England Journal of Medicine.*

<div align="center">**KEY CHANGE STRATEGIES**</div>

E-Referral
- Suitable for integrated systems, community health centers and academic medical practices in which physicians are salaried (i.e. not paid on a productivity basis).
- PCP emails Pt. history, physical exam, lab results and x-ray results to selected specialists with specific questions.
- If the question can be answered without seeing patient, specialist sends answer within agreed timeframe.

Referral Agreements
- Negotiated agreements between PCP practices and specialty groups that specify all or a portion of the following elements:
- the diagnoses/conditions included,
- studies the PCP must provide,
- turnaround time for appointments and consult notes, and
- PCP specifies if intent of the referral is:
    - 1X only,
    - co-management between PCP and specialist,
    - or a permanent transfer of the patient for issues of the referred condition.

Hospital Care Coordination at discharge

Some hospitals have begun to create defined processes for patient discharge that coordinate with ambulatory practices and include patient education. Two are such processes profiled below.
- Boston Medical Center's discharge plan includes:
    - medications,
    - lifestyle changes,
    - follow-up care,
    - patient education geared to the patient's language and literacy level, and
    - timely information flow to and from primary care.
- The Hospital Patient Safe Discharge project developed a "discharge bundle" of 3 interventions:
    - a reconciliation of medications,
    - discharge education, and
    - post-discharge continuity check by a clinician.

Advanced Practice Nursing Coaching with hospital discharge
- Advanced practice RNs make in-hospital visits, post-discharge visits and phone consultations to patients complex chronic disease patients.

Care Transitions Program

Employs coaches to improve care coordination and teach the patient to navigate the H/C system upon discharge (i.e. coordinate their own care).

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- ARNP nurses are trained as coaches assisting patients and their families in developing self care skills and to perform self care.
- Coaches teach the patients and families how to coordinate care for themselves. For example, if the patient needs to contact the PCP, the coach teams the patient how to approach the PCP rather than make the call for the patient.

Teamlet Model in Team-based Care

The teamlet dyad may be used within a larger team.

- The primary care physician is teamed with a re-trained Medical Assistant or RN "coach".
- The coach handles care and teaching before visits, after visits and between visits, and may accompany the physician during visits.
- Using reminder systems and checklists, the coach makes sure that consult reports and diagnostic results are available for the visit and transmitted to the patient.
- The coach coordinates care by assisting with paperwork and authorizations and helping to make sure that patients have necessary tests and appointments before the visit.

EVIDENCE REPORTED / CHALLENGES NOTED / QUALITATIVE LESSONS LEARNED

E-Referral
- Anecdotal reports of less waiting time for consults and quicker receipt of consult reports from specialists.

Referral Agreements
- Diagnosis-specific templates make the referral process quick and easy for primary care physicians and specialists.
- Anecdotal reports of less waiting time for consults and quicker receipt of consult reports from specialists.
- Sample of a Referral Agreement template available from Family Care Network.

Hospital Care Coordination at discharge
- See attached sample discharge form from the Hospital Patient Safe Discharge project.

Advanced Practice Nursing Coaching with hospital discharge
- Rehospitalizations, deaths and total costs were significantly lower for the intervention group than the control group.

Care Transitions Program
- Rehospitalizations and total costs were significantly reduced as of 6 months after discharge.

Teamlet Model in Team-based Care
- Training of the coach is crucial. The clinician-coach teamlet decides which functions the coach is adequately trained to perform; the clinician must be confident in the coach's competence before delegating any task.
- In two fee-for-service practice settings employ MAs in the teamlet model, find that enough routine functions are handled by the MAs to allow the physicians to see one to two more patients a day, thereby increasing revenues.

RELEVANT DEFINITIONS

Accountable care organization:

"The Accountable Care model emphasizes the alignment of incentives and accountability for providers across the continuum of services."

"An ACO is a provider-led organization whose mission is to manage the full continuum of care and be accountable for the overall costs and quality of care for a defined population."

"Multiple forms of ACO's are possible, including large integrated delivery systems, physician-hospital organizations, multi-specialty practice groups with or without hospital ownership, independent practice associations and virtual inter-dependent networks of physician practices."

"The patient-centered medical home could serve as a linchpin for an emerging health care delivery model known as an accountable care organization, or ACO"

An ACO is "an integrated health care delivery system that relies on a network of primary care physicians, one or more hospitals, and subspecialists to provide care to a defined patient population. Under the model, hospital and physician networks would be responsible for the quality of care delivered to patients and would receive bonuses for providing high-quality, low-cost care."

Sources:
Rittenhouse, Shortell, Fisher. Primary Care and Accountable Care-Two Essential Elements of Delivery System Reform. New England Journal of Medicine, November 3, 2009 and Arvantes, James MedPAC Considers Accountable Care Organizations as Possible Path to Health Care Reform
http://www.aafp.org/online/en/home/publications/news/news-now/government-medicine/20090420acc-care-orgs.printerview.html

Adaptive reserve:

"Includes such capabilities as a strong relationship system within the practice, shared leadership, protected group reflection time, and attention to the local environment."

Source:
Nutting, Miller, Crabtree, Jaen, Stewart, Stange (May/June 2009). Initial Lessons from the First National Demonstration Project on Practice Transformation to a Patient-Centered Medical Home. *Annals of Family Medicine.* Volume7 Number 3   (8)

Care coordination:

"Care coordination is client-centered, assessment-based interdisciplinary approach to integrating health care and a social support service in which an individual's needs and preferences are assessed, a comprehensive care plan is developed, and services are managed and monitored by an identified care coordinator following evidence-based standards of care."

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 "Care coordination encompasses both health care and social support interventions across the range of settings from home to ambulatory care to the hospital and post-acute care."

Source:
Brown (March 2009). The Promise of Care Coordination: Models that Decrease Hospitalizations   and Improve Outcomes for Medicare Beneficiaries with Chronic Illness. *A Report Commissioned by the National Coalition on care Coordination*. Mathematica Policy Research   (9)

Chronic condition:
"Likely to last more than one year, limits a person's activities and may require ongoing medical care."

"Care for people with chronic conditions consumes 78 percent of all health care spending, 95 percent of Medicare spending and 77 percent of Medicaid spending for beneficiaries living in the community."

Source:
Bodenheimer (March 6, 2008). Coordinating Care: A Perilous Journey through the Health System. *New England Journal of Medicine.*   (12)

Evidence based care:
Evidence-based medicine is the integration and application of research evidence with clinical expertise and patient values in clinical care.

Source:
Wall, Eric, Linscott, Karen (November 18, 2009) Presentation at the Health and Capital Conference in Washington DC

Patient-centeredness:
"Patient centeredness refers to health care that establishes a partnership among practitioners, patients and their families (when appropriate) to ensure that decisions respect patient's wants, needs, and preferences and that patients have the education and support they require to make decisions and participate in their own care."

When describing the health care team, the patient should be able to say: "I work with my team and have determined what I need and when, where and how I want it. I know the team, and the team knows and cares about me. The team listens, provides advice and supports my health journey. My questions and concerns are answered. Care is coordinated. My values and goals drive care plans."

Sources:
Institute of Medicine Envisioning a National Health Care Quality Report

Gottilieb, Sylvester, Eby (January 2008). Transforming your Practice: What Matters Most. *Family Practice Management.*   (2)

Preference-sensitive care:
"Misuse results from the failure to accurately communicate the risks and benefits of the alternative treatments and the failure to base the choice of treatment on the patient's values and preferences."

  "Preference-sensitive care comprises treatments that involve significant trade-offs affecting the patient's quality and or length of life. Decisions about these interventions-whether to have them or not-ought to reflect patient's personal values and preferences."

Source: Dartmouth Atlas topic brief

Supply sensitive care:

"Supply-sensitive care is care whose frequency of use is not determined by well-articulated medical theory, much less by scientific evidence. Supply-sensitive services include physician visits, diagnostic tests, hospitalizations and admissions to intensive care among patients with chronic illnesses."

"Overuse of supply-sensitive care is particularly apparent in the management of chronic illness. The cause is an overdependence on the acute care sector and a lack of infrastructure necessary to support the management of chronically ill patients in other settings."

Source: Dartmouth Atlas Project Topic Brief, 2007

Unwarranted variation:

"There is unwarranted variation in the practice of medicine and the use of medical resources in the United States. There is underuse of effective care, misuse of preference sensitive care and overuse of supply sensitive care."

"Underuse of most kinds of effective care (such as the use of beta blockers for people who have had heart attacks and screening of diabetics for early signs of retinal disease) is very common even in hospitals considered among the "best' in the country-including some academic medical centers."

Source: Dartmouth Atlas Project Topic Brief, 2007