

# Next Generation Improvement for Healthcare Systems:

## A Comprehensive Structure-Process-Outcome Patient-Centered Medical Home Model for Redesigning Medical Practices



Lumetra

Linda M. Sawyer, PhD, RN

Fabio Sabogal, PhD

Joseph E. Scherger, MD, MPH

The new **Obama** Administration and Congress have given every indication that healthcare reform is a priority area for legislative and regulatory action.<sup>1, 2</sup> This coupled with the very real prospect that an important portion of the forthcoming economic stimulus package will designate significant resources for health information technology indicates that the healthcare industry is on the verge of another period of transition. Whether this is a positive transformation that

results in improved access to care along with increased quality, safety, and efficiency depends much more on whether we have incorporated important lessons from our recent past than increased spending. A recently released study by the McKinsey Global Institute found American's spent more than \$477 billion more on healthcare than we should have when compared to other peer countries.<sup>3</sup> In addition, the U.S. healthcare system produces poorer clinical outcomes with greater costs compared to other industrialized countries.<sup>4, 5</sup>

More money is not and should not

be our default solution for what ails healthcare today. A thoughtful and lasting approach to improving the quality and safety of care in combination with an effective health information technology infrastructure is the treatment we believe our nation's healthcare system desperately needs.

Throughout Lumetra's 25 years of working with providers, payers, health plans, consumers, and government to improve the healthcare systems, we have seen what works and, quite frankly what has not worked. From this vantage point we learned that in order

for outcomes to improve and for change to take root, we must move beyond a singular focus on process improvement and process quality. As suggested by Donabedian, a pioneer in defining healthcare quality improvement, contemporary quality should be evaluated and emphasized equally on three levels: structure, process and outcomes.<sup>6</sup>

**Structure Quality** - Looks at healthcare system characteristics (e.g. health information technology and facility design) and capacities, as well as availability of resources to deliver healthcare (e.g. provider certification and training).

**Process Quality** - Assesses the delivery of healthcare services, and the extent to which appropriate procedures and treatments for a given condition are delivered, or professional standards are adhered to.

**Outcomes Quality** - Examines the effects of treatment by changes in patients' health status, including improvement in condition or reduction of harmful effects.

Recently we are encouraged to observe Donabedian's multi-dimensional concept of healthcare quality slowly be incorporated into physician office practices. Adopting and encouraging policies and incentives that accelerate the emergence of the Patient-Centered Medical Home Model could go a long way towards reducing the overpayment found in McKinsey not to mention patient safety vulnerabilities highlighted by the Institute of Medicine.<sup>7-9</sup>

Poorly designed healthcare systems are unacceptably common. Bad systems produce bad outcomes, compromise

care quality and patient safety, and increase healthcare costs.<sup>7,8</sup> The vast majority of physician offices are organized around the outdated acute care model consisting of episodic visits, an abundance of paperwork, and rising costs, which restrict practitioners' ability to provide the care patients and their caregivers need.<sup>10-14</sup> This model's shortcomings include:

- Overburdened physicians with insufficient time to provide best-quality care
- Low patient and provider satisfaction in part due to limited quality communication
- Poor model for preventive care and chronic illness management
- Insufficient time for the longer visits that complex patients need
- Inability to educate and activate patients providing good answers to patients' questions
- Low patient awareness, suboptimal treatment and poor control of chronic illnesses
- Common mistakes in prescribing, missed diagnoses, wrong treatment

This ineffective model produces overuse, underuse, disparities, misuse,

and errors in quality of services and treatment.<sup>15</sup> Here are some examples:

- **Underuse.** Effective and appropriate care is often not delivered to patients. Underuse has been documented for preventive, acute and chronic care. About 50 percent of people received recommended preventive care. In fact, "the care delivered in the United States often does not meet professional standards."<sup>18</sup>
- **Overuse.** Unnecessary care is often delivered resulting in waste of resources and time, as well as patient harm, and sometimes death. Overuse of antibiotics is expensive and exposes patients to unnecessary risk.<sup>16, 17</sup> About 51% of patients diagnosed as having colds, 52% of patients diagnosed as having upper respiratory tract infections, and 66% of patients diagnosed as having bronchitis were treated with antibiotics, despite the fact that antibiotics offer little or no benefit for these conditions.
- **Disparities.** Racial or ethnic disparities in healthcare are persistent across a range of illnesses and

### Modernize the System to Lower Costs and Improve Quality

"America spends almost twice as much as other industrialized countries on health care spending per capita with poorer health outcomes. And yet, health care spending is expected to double within the next decade. A growing body of research points to substantial opportunities to improve quality of care while reducing costs. Some researchers estimate that as much as 30% of health care spending does not contribute materially to patient outcomes. We must dramatically redesign our health system to reduce inefficiency and waste and bring down costs for families and individuals."

— Barack Obama. Affordable Health Care for All Americans.  
The Obama-Biden Plan, JAMA, October 22/29, 2008(30),16, 1927-1928.

healthcare services. These disparities remain even after adjustment for socioeconomic differences and other healthcare access-related factors.<sup>79</sup> For example, racial differences in invasive cardiac procedures persist despite severity of disease. African Americans receive disproportionately fewer treatments (catheterizations, percutaneous transluminal coronary angiography (PTCAs), and coronary artery bypass grafting (CABGs)) than white patients. Disparities are also observed for Hispanics and whites, although these were less consistent.<sup>19</sup>

- **Misuse and Error.** Errors in treatment are widespread, and misuse is characterized as the failure to execute procedures and plans correctly.<sup>20</sup> In fact, 44,000 to 98,000 people die each year because of preventable medical errors, making hospital-based errors the eighth leading cause of death in U.S. costing the healthcare system between \$17 to \$29 billion annually.<sup>7</sup> In a survey of primary care experiences in five countries, authors find “Across dimensions of care, the United States stands out for its relatively poor performance. With the exception of preventive measures the US primary care system ranked either last or significantly lower than the leaders on almost all dimensions of patient-centered care: access, coordination, and physician-patient experiences. These findings stand in stark contrast to

U.S. spending rates that outstrip those of the rest of the world.”<sup>21</sup>

- **Public Perceptions of Healthcare Quality.** Consumers are dissatisfied with the healthcare system. In a national survey, 55 percent of respondents said that they are currently dissatisfied with the quality of healthcare in this country. About 40 percent believe that the quality of healthcare has “gotten worse” in the past five years, where as only 17 percent think it is better. Half are worried about the safety of their care.<sup>22</sup>

### Redesigning Physician Office Practices: The Patient-Centered Medical Home (PCMH)

A patient-centered medical home is an innovative model for primary care more effectively structured to provide superior quality of care in physician practices by delivering comprehensive, ongoing and coordinated care for people of all ages and all clinical conditions.<sup>5, 23, 24</sup> Within this framework, every patient has a medical home, a personal physician who leads a team of qualified professionals at the practice level who are in charge of providing ongoing, comprehensive care at all stages of life including preventive, acute care, chronic care and end of life care.<sup>23</sup>

Transformation to a PCMH Model enables practices to replace the brief visit model with a new vision of office practice that reduces costs, improves quality and enhances service. The cornerstones of this system are patients’ continuous access to care, proactive care

and activated patients.<sup>5, 23</sup>

This promising care model focuses in enhancing access and providing high quality of healthcare services through open-access scheduling, online appointments, enhanced hours, improved physician-team-patient-caregiver communication, group visits, e-mail communication, coordinated chronic disease management, web-based health information, better clinical decision support systems, use of electronic health record systems and outcome analyses.<sup>13,</sup>

<sup>14, 25</sup>

### Patient-Centered Medical Home Improves Healthcare Quality, Communication, Coordination and Equality

The PCMH model focuses on quality, communication and coordination. Quality and patient safety are at the core of this model because outcomes are defined in partnership between the care team and the patient and caregivers, and continuously monitored by population management tools that provide real-time feedback to the care team.<sup>5</sup>

<sup>25</sup> In addition, the provision of clinical decision support systems such as up-to-day evidence-based clinical guidelines at the point-of-care, improves healthcare quality and reduce medical errors.<sup>26</sup> Equally important is the establishing of quality standards and related metrics to monitor, report and improve medical healthcare outcomes.<sup>26</sup>

Communication is enhanced via face-to-face, group visits and online communications between and among healthcare professionals, patients and

caregivers. Better care coordination is attained by sharing information across clinical settings and by supporting clinicians with up-to-date medical information using electronic medical record systems and other health information technology tools.

The PCMH model focuses on patient activation. The care team works in very close partnership with the patient and their families. Patients have a central role in managing their chronic illness using effective self-management and problem-solving strategies.<sup>27</sup> They are empowered to ask questions and to learn about how to navigate the complex healthcare system. Also, the care team supports patient-self-management strategies by helping patients to set realistic goals and specific action plans to reach these goals. In addition, the care team provides emotional support, condition-specific information and disease management strategies, and ensures adequate follow-up increasing patient satisfaction and better medical outcomes.<sup>27</sup>

Patient-centered medical homes promote equity in healthcare.<sup>28</sup> When adults have a medical home – healthcare settings that provides timely, well-organized and enhanced access to healthcare providers - and health insurance coverage, racial and ethnic disparities are reduced or eliminated.<sup>28</sup> A national study among 2,830 adults found that linking patients to medical homes increase access, preventive screenings and management of chronic conditions.<sup>28</sup> The survey found that cholesterol rates and breast cancer and

### A New Vision of Office Practice

The redesign of physician offices requires fundamental changes related to:

- Continuous management and monitoring of a patient population prioritizing conditions
- Patient-centered care home managing needs and demands in a new web-based platform of services
- Planned and proactive care
- Best evidence-based clinical knowledge at the point-of-care
- Continuous access to face-to-face and electronic multimodal communication
- Taking the time to be effective (time to heal)
- Fewer time intensive visits
- Culturally appropriate patient education tools to activate patients/caregivers
- Teamwork approach that provide comprehensive primary care across the lifecycle for children youth and adults and interpersonal skills
- Focus on comprehensive and personal care

prostate screening tests were higher among adults who received patient reminders.<sup>28</sup> When adults from different minority groups have medical homes, they are as likely to receive these reminders.<sup>28</sup>

Other important outcomes of the Patient-Centered Medical Home are:

- Technology-enabled communications and ability to interact with more patients per day
- Fewer appointments per day, saved for patients who need more of his/her time
- Improved quality of care, fewer prescribing errors and missed diagnoses
- Enhanced convenience for physicians and patients through continuous communication access, decreased waiting time, and automated prescription refill
- Increase overall savings to the healthcare system through reduced hospitalizations and complications of chronic illness

A Medicaid PCMH program, the Community Care of North Caro-

lina, that focused on superior quality and cost outcome using disease management, evidence-based clinical guidelines, and a physician-led team approach, showed a saving of \$195 to \$215 million in 2003 and between \$230 and \$260 millions saved the state in 2004.<sup>28</sup> A report on financing the new model of family medicine estimated that if every American used a primary care physician as their usual source of care, there would be a 5.6% reduction in healthcare costs and a national saving of \$67 billion dollars per year.<sup>25</sup>

### Recognizing Physician Practices as Medical Homes

The National Committee for Quality Assurance (NCQA) released standards for Physician Practice Connections – Patient Centered Medical Homes (PPC-PCMH).<sup>23</sup> This program recognizes primary care practices that provide superior quality of care using evidence-based standards of care. Some of the dimensions of care measured in the program are:

- Access and communication

- Patient Tracking and Registry Functions
- Patient Self-Management
- Electronic Prescribing
- Test Tracking
- Referral Tracking
- Performance Reporting and Improvement
- Advanced Electronic Communications

For PPC-PCMH recognition, practices must pass at least five dimensions of quality care. NCQA broadly publicizes those physician practices that are recognized as a patient-centered medical home.<sup>23</sup> Quality and professional medical organizations such as the American Academy of Family Physicians (AAFP), the American Osteopathic Association (AOA), the American College of Physicians (ACP) and the Institute for Healthcare Improvement (IHI) support the Patient-Centered Medical Home. These organizations and many payers are looking for more efficient and safer structure-processes-outcomes at the physician practices level that use the Patient Centered Medical Homes model to produce better quality healthcare at reduced costs.

### References

1. Obama B. *Affordable health care for all Americans: the Obama-Biden plan*. *JAMA* 2008;300:1927-8.
2. Obama B. *Modern health care for all Americans*. *N Engl J Med* 2008;359:1537-41.
3. Farrell D, Jensen E, Kocher B, et al. *Accounting for the cost of US health care: A new look at why Americans spend more*. In: McKinsey & Company ([http://www.mckinsey.com/mgi/publications/US\\_healthcare/](http://www.mckinsey.com/mgi/publications/US_healthcare/)); 2008.
4. Ginsburg JA, Doherty RB, Ralston JF, Jr., et al. *Achieving a high-performance health care system with universal access: what the United States can learn from other countries*. *Ann Intern Med* 2008;148:55-75.
5. American Academy of Family Physicians. *Patient-centered medical home. Questions and answers*. In: <http://www.aafp.org/online/enl/home/membership/initiatives/pcmh/brief.html>; 2009.
6. Avedis D. *An introduction to quality assurance in health care*. Oxford: Oxford University Press; 2003.
7. Institute of Medicine. *The err is human: Building a safer health system*. Washington DC: National Academies Press; 2000.
8. Institute of Medicine. *Crossing the quality chasm*. Washington: National Academy of Sciences; 2001.
9. Institute of Medicine. *Unequal treatment: Confronting racial and ethnic disparities in healthcare*. Washington: National Academies Press; 2002.
10. Bodenheimer T. *Primary care in the United States*. *Innovations in primary care in the United States*. *BMJ* 2003;326:796-9.
11. Bodenheimer T. *Primary care—will it survive?* *N Engl J Med* 2006;355:861-4.
12. Bodenheimer T. *The future of primary care: transforming practice*. *N Engl J Med* 2008;359:2086, 9.
13. Bodenheimer T, Wagner EH, Grumbach K. *Improving primary care for patients with chronic illness: the chronic care model, Part 2*. *JAMA* 2002;288:1909-14.
14. Bodenheimer T, Wagner EH, Grumbach K. *Improving primary care for patients with chronic illness*. *JAMA* 2002;288:1775-9.
15. Agency for Healthcare Research and Quality. *Improving healthcare quality*. In: *AHRQ Fact Sheet*. Rockville, MD: AHRQ Publication 02-P032; 2002.
16. California HealthCare Foundation. *Underuse and overuse of medical services*. In: *The quality initiative*. Oakland, CA; 2000.
17. Gonzales R, Steiner JF, Sande MA. *Antibiotic prescribing for adults with colds, upper respiratory tract infections, and bronchitis by ambulatory care physicians*. *JAMA* 1997;278:901-4.
18. Schuster MA, McGlynn EA, Brook RH. *How good is the quality of health care in the United States?* *Milbank Q* 1998;76:517-63, 09.
19. Kressin NR, Petersen LA. *Racial differences in the use of invasive cardiovascular procedures: review of the literature and prescription for future research*. *Ann Intern Med* 2001;135:352-66.
20. Berwick DM. *A user's manual for the IOM's 'Quality Chasm' report*. *Health Aff (Millwood)* 2002;21:80-90.
21. Schoen C, Osborn R, Huynh PT, et al. *Primary care and health*

- system performance: adults' experiences in five countries. *Health Aff (Millwood)* 2004;Suppl Web Exclusives:W4-487-503.
22. Altman DE, Clancy C, Blendon RJ. Improving patient safety--five years after the IOM report. *N Engl J Med* 2004;351:2041-3.
23. National Committee for Quality Assurance. Physician practice connections - Patient centered medical home (PPC-PCMH). In: <http://www.ncqa.org>; 2008.
24. Friedberg MW, Safran DG, Coltin KL, Dresser M, Schneider EC. Readiness for the Patient-Centered Medical Home: Structural Capabilities of Massachusetts Primary Care Practices. *J Gen Intern Med* 2008.
25. Spann SJ. Report on financing the new model of family medicine. *Ann Fam Med* 2004;2 Suppl 3:S1-21.
26. Institute for Healthcare Improvement. The triple aim. Optimizing health, care and cost. *Healthcare Executive* 2009:64-6.
27. Bodenheimer T, Lorig K, Holman H, Grumbach K. Patient self-management of chronic disease in primary care. *JAMA* 2002;288:2469-75.
28. Beal A, FDoty M, Hernandez S, Shea K, Davis K. Closing the divide: How medical homes promote equity in health care: Commonwealth Fund; 2007.



## Notes from NAHQ

Kathleen Tornow Chai

NAHQ has published the second edition of Q-Solutions. The entire references is :

Pelletier, L.R. & Beaudin, C.L. (Eds). (2008). *Q Solutions: Essential Resources for the Healthcare Quality Professional*, Second Edition. Glenview, IL: National Association for Healthcare Quality.

The book can be accessed through the online order information at <http://www.association-office.com/NAHQ/etools/products/products.cfm>

Plan ahead! NAHQ's 34th Annual Educational Conference; Dates: Sunday September 13th, 2009 through Wednesday September 16th, 2009. Gaylord Texan Resort Hotel & Convention Center, Grapevine, TX

Special Interest Groups (SIGs) Starting in early February, six new Special Interest Groups (SIGs) will be available as a NAHQ members-only benefit—

in the areas of acute care, behavioral health, critical access/rural healthcare, home care, long-term care, and managed care. SIGs connect individuals with similar interests and allow them to share knowledge, promote specialties, identify professional challenges, and advance the profession. Watch for an e-mail in early February with instructions for joining the SIG of your choice and signing up for an individual Listserv. If you checked a specific organization or facility type on your NAHQ membership application, you will be automatically added to the appropriate SIG Listserv. If you did not identify an organization or facility type, you will need to sign up through the Members-Only section of the NAHQ Web site. You may join as many SIGs as you like. For more information, go to [www.nahq.org](http://www.nahq.org).

NAHQ e-news Readership Survey Results: NAHQ says thanks to the nearly 300 NAHQ e-news readers

who recently responded to the online readership survey. Ninety-two percent of readers said the newsletter is meeting their needs, and 60% said they share it with others, including personnel from infection control, risk management, patient safety, and nursing. Survey respondents also provided feedback on issues they'd like to see covered this year. Among the most requested topics were Centers for Medicare and Medicaid Services regulations and core measures, Joint Commission standards and changes, and SIG-related issues. Other suggestions were technology and the electronic health record; pay for performance; infection control and National Patient Safety Goals; public reporting and transparency; insurance, risk management and national health insurance; Lean/Six Sigma; and issues related to the election and the economy. NAHQ appreciates your input and promise to address your concerns!

