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- **Quality improvement makes good business sense.** A pilot project conducted by VHQC-RAND for CMS concluded that electronic medical records (EMRs), patient registries, reminder systems, and standing orders save time, money and improve clinical outcomes. These QI interventions can decrease costs, increase revenues and lead to increased profitability.
- **A business case for quality needs to be developed.** A business case for quality with positive return of investment is needed to implement healthcare quality innovations. Without a business case for quality, it is unlikely that the private sector will move quickly and reliably to widely adopt best QI practices. Healthcare organizations may be reluctant to implement quality improvement interventions if better quality is not accompanied by better payment.
- **Some QI interventions produce financial benefits in the short-term.** "Less complex" interventions (e.g., standing orders and clinical pathways) produce profits in a short period of time. EMRs also produce high profits in the short run.
- **Some QI interventions have high up-front costs, but produce positive returns in the long run.** Complex QI interventions (e.g., diabetes management programs) and expensive health innovations (e.g., high-cost pharmaceuticals) have high up-front costs that are difficult to recover in the short run. Other interventions (e.g., smoking cessation or diabetes management programs) produce economic benefits in the long run. Prevention of diabetes complications is a long-term process. For example, in one major health plan, a diabetes management program was profitable only after 10 years. In a smoking cessation program, short-term expenses and patient turnover were high. Cost savings were reduced only in the long term.

The business Case of Quality in Physician Offices

- **QI projects can result in cost savings for physician practices.** Through improved staff efficiency, QI initiatives can help practices by reducing expenses, which lead to increasing gains in productivity and capacity for patient throughput. Revenue can increase via increased and appropriate lab, radiology, evaluation, and management visits. EMR systems have produced a high annual return on investment for providers.
- **EMR systems are cost-effective.** An urban physician group practice invested \$280,000 in an EMR system to increase the documentation and availability of patient diabetes test results. The new system allowed the practice to increase employee productivity and the number of patient visits each day. It realized increased annual profits of **more than \$1 million** as a result of the change. The EMR also generated substantial indirect financial benefits of a **10 percent** increase in patient satisfaction and a **37 percent** decrease in staff turnover.
- An **electronic disease management system** not only resulted in improved clinical care in a small practice, it also enabled the group to free time for physicians to see additional patients, translating into nearly **\$5,700** in additional patient profits each year.

- A larger practice developed a simple **diabetes flow sheet** that helped improve the delivery of care and increased range of services provided in typical patient office visits, including increases in the number of appropriate tests the practice performed. For a small investment (\$3,903), the practice realized more than **\$28,000** in additional patient profits each year.

QI interventions produce business, economic and social benefits.

- A **business case** for a QI intervention exists if the entity that invests in the intervention realizes an immediate or short-term financial return. An **economic case** is related to the long-term and sustainable changes associated with a positive return of investment. A **social case** is related to the perceived benefits to an individual or to a society: providing better patient care; maintaining accreditation; improving employee satisfaction; reducing medical errors; avoiding exposure to liability; increasing patient satisfaction; and building goodwill or enhancing reputation. A sense of organizational “mission” is key for QI efforts. However, non-monetary variables are not sufficient to drive QI efforts.

Impediments for a business case of proven quality improvements

- **Disconnections between incentives and quality.** According to many payers and providers, misalignment of financial incentives creates a formidable obstacle to the adoption of QI interventions (e.g., payment is better for treatment than preventive services). Financial incentives need to be incorporated more visibly into quality performance activities.
- **Organizational goals for success and quality may not go hand-in-hand.** Healthcare organizations’ goals for success and goals for quality are not congruent. Net profit is the number one indicator for “success,” while it is one of the lowest for “quality.”
- **Interventions may have high upfront costs** that are difficult to reap in a short period of time. Programs with returns of more than five to 10 years, such as a diabetes disease management, do not have a rapid enough payoff to justify up-front investment costs.
- **Lack of assessment tools.** Many healthcare organizations do not collect data or have systems in place to support evaluation of the costs and benefits of QI interventions.
- **High rates of patient turnover in health plans contribute to a weak business case.** The median time for an enrollee in a health plan is 18 to 24 months. Thus, the financial benefit to the investor may be delayed or never realized at all. For example, the business case for diabetes disease management is weak. Financial analysis demonstrated a negative return on investment for the program in the short run (savings of \$75/member). The initial costs for such programs are substantial and plans may not be able to reap the potential savings until 10 years later. In the long run, a positive return would occur through avoidance of increased morbidity, but because of enrollee turnover, organizations might not be able to realize that return. However, there are gains to society – \$31,000 in improved length and in quality of life.

A **business case** for a healthcare improvement intervention exists if the entity that invests in the intervention realizes a **financial return on its investment** in a reasonable timeframe. This may be realized as “**bankable dollars**” (**profit**), a reduction in losses for a given program or population, or avoided costs.

The business case of quality in physician offices

Quality improvement projects can result in cost savings for physician practices – improved staff efficiency, increased patient volume, and performance of more tests (see Table 2).

EMR systems for diabetes patients increased employee productivity and the number of patient visits each day, with increasing annual profits of more than \$1 million.

- An *electronic disease management system* for diabetes enabled the group to free physicians to see additional patients, obtaining \$5,700 in additional patient profits each year.
- A *diabetes flow sheet* that helped improve the delivery of diabetes care increased the number of tests the practice performed. The practice realized more than \$28,000 in additional patient profits each year.

Table 2. Clinical and Financial Benefits of Quality Improvement Interventions in Physician Settings

Intervention	Clinical Benefits	Investment and Financial Benefits
EMR Systems in an urban physician group practice Diabetes	<ul style="list-style-type: none"> o Increased documentation and availability of text results o Increased efficiency eliminating 5FTEs and communications o Patient satisfaction increased from 93% to 100% o Employee turnover decreased from 54% to 17% o Increased 1 patient visit per doctor each day: \$76,000 month o Patients receiving a lipid profile from 58% to 71% o Patients receiving a dilated eye exam from 68% to 83% o Radiology 2% increase, Lab 9% increase 	<p>Investment: \$280,000</p> <p>Annual Profit: \$1 million</p>
Electronic Disease Management System Small, rural, physician Practice. Track the care patients with diabetes receive. Provide physician Reminders	<ul style="list-style-type: none"> o Participated in a Public Health Service collaborative o Free 6 hrs. month physicians to see additional patients (6 additional patients) o Average HbA1c results from 8.3 to 7.1 o Patients receiving an HbA1c test from 87% to 96% o Patients receiving a lipid profile from 66% to 80% 	<p>Investment: \$1,268</p> <p>Annual Profit: \$5,700</p>
Diabetes Flow Sheet A large, physician practice with 32 physicians.	<ul style="list-style-type: none"> o Improved quality, reduce unnecessary variation of care delivery and improve operational efficiency. o Increased documented lab tests and tracks eye and foot exams o Changes for patients receiving a lipid profile from 43% to 57% o Maintained patients receiving an HbA1c test at 83% 	<p>Investment: \$3,903</p> <p>Annual Profit: \$28,000</p>

A Cost-Benefit Analysis Of Electronic Medical Records In Primary Care

EMR systems improve the quality of patient care and decrease medical errors, but their financial effects have not been as well documented. The purpose of this study was to estimate the net financial benefit or cost of implementing EMR systems in primary care.

A cost-benefit study was conducted to analyze the financial effects of EMR systems in ambulatory primary care settings from the perspective of the healthcare organization. Data was obtained from studies at our institution and from the published literature. The reference strategy for comparisons was the traditional paper-based medical record. The primary outcome measure was the net financial benefit or cost per primary care physician for a 5-year period.

The estimated net benefit from using an EMR for a 5-year period was **\$86,400 per provider**. Benefits accrue primarily from savings in:

- drug expenditures
- improved utilization of radiology tests
- better capture of charges
- decreased billing errors

In one-way sensitivity analyses, the model was most sensitive to the proportion of patients whose care was capitated; the net benefit varied from a low of \$8,400 to a high of \$140,100. A five-way sensitivity analysis with the most pessimistic and optimistic assumptions showed results ranging from a **\$2,300 net cost to a \$330,900 net benefit**.

Implementation of an EMR system in primary care can result in a positive financial return on investment to the healthcare organization. The magnitude of the return is sensitive to several key factors.

Stakeholder analysis. For each stakeholder, business-case issues include both the financial return on investment and a list of collateral benefits. Such collateral benefits include enhanced market position; reduced regulation and oversight; improved reputation; improved patient retention and decreased reenrollment, marketing, and acquisition costs; improved recruitment and retention of essential staff; and improved health outcomes.

- It is striking that in all cases where the investing organization is a provider, and even when the innovation is effective for patient care, the business case is unfavorable.
- The exception is when the purchaser is the investor and can reap the benefit in reduced spending in the longer term.
- At the same time, the quality improvements are either neutral or favorable to the individual, society, and the purchaser or employer.
- An economic case can be made even when the business case is lacking.
- A social case is evident where the individual and society have clear long term benefits resulting from lower morbidity and mortality.
- This divergence of interests dramatically illustrates the need for policy action to align financial incentives for organizations to invest in quality improvements that are of value to individuals and to society.

Shifting The Balance Toward Quality

In a fragmented health system, in which the patient moves among different providers, employers, and payers, major challenges arise in aligning the financial incentives for improving the quality of care. The challenges are even greater when, as in healthcare, important decision makers cannot distinguish among levels of quality, when payment is unresponsive to defect levels, when the harvest in improved patient outcomes and reduced cost occurs mainly in the long term, when administrative pricing separates values from payment levels, and when cultural and managerial constraints limit the pace and penetration of

improvement. The changes needed to address these challenges require a more active role for the public, large payers and the government. Medicare ultimately inherits the benefits or burden of the performance of the healthcare system and could much more directly reward activities such as prevention and chronic disease management. Payment now mainly reflects resource costs, not benefits to the patient. Many defects in care have no consequences to the organizations that could reduce them. For programs that clearly benefit society, such as the lipid clinics and diabetes management programs, direct reimbursement through public expenditures, or policies that require these improvements as common practice, may be necessary to shift the balance toward improved quality. When both the social case and the economic case for improvement are favorable, but the business case is negative, it is time to consider reforms in both payment and policy to reward organizations that are willing to invest in quality.

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