Health Information Technology Toolkit for Family Physicians

Determinants of Successful EHR Implementation

Today's primary health care providers practice in an environment of limited financial resources and increasing demand for quality, accountability, and value. Widespread adoption of health information technology has been identified as one of the most promising solutions to this health care delivery dilemma. Yet adoption of electronic health records (EHR) in the United States remains low.[1]

Lessons learned from widespread implementation efforts can be used to encourage and inform use of EHR. This report summarizes the most current literature on determinants of successful EHR implementation, with a focus on primary care practices.

Few systematized reviews specific to the United States are available, most likely because large-scale EHR implementation efforts have yet to be studied. The majority of studies about determinants of success in EHR implementation come from Canada and the United Kingdom. Success is typically defined as widespread adoption of EHR technology that has become pervasive across practice setting and function. For example, adoption of just a few practice modules, without complete integration of technology in all areas of practice, would not constitute successful implementation. While the study sizes and settings vary, common themes emerge about keys to success.[2-11]

People

It is clear from the literature that the involvement of the right people at the right time in the process is critical to the success of EHR implementation. Some important determinants of success include:

Executive and Management Support. Clearly communicated and ongoing support from the executive and management teams in the organization are key to successful implementation.

Physician "Champion." A key component of success is the involvement of a clinician with some knowledge about information technology who is well-respected by colleagues and is a champion for change. Implementation projects with no physician leaders have a hard time getting off the ground.

Staff Leaders and Problem-Solvers. In addition to physician leaders, it is critical to identify and engage those staff members who are natural problem-solvers and can bridge multiple teams.

Multi-Disciplinary Team with Decision Authority. It is important to identify a multi-disciplinary team early in the process and to give the team decision-making authority as the implementation progresses.

Planning

Careful planning coupled with an ability to make modifications and change course as needed seems to be one of the keys to successful EHR implementation.

Have Clear Goals and Expectations in the Implementation Plan. It is important to develop and communicate clear goals and realistic expectations before embarking on EHR implementation. Managing expectations is an important component of successful change.

Implementation Should Account for Practice Culture. Implementation plans should take into account the culture of the practice. How does the practice deal with change? Does the practice embrace innovation? Practice environments that are not conducive to change will need careful and additional coaching through the process, compared with groups that are progressive and already interested in incorporating innovation into their work.

Offer Training and Ongoing Coaching. Training should include both group-training sessions and ongoing coaching on an as-needed basis. No matter how well prepared the practice is with trainings prior to system launch, ongoing training and coaching are critical to ultimate success. No initial training can fully account for the questions and details that will arise when the system is being used in real time.

Solicit Ongoing Feedback. The implementation team should solicit and welcome feedback throughout the process. Many studies report system critics are the most valuable staff members. It is important to identify all the potential weaknesses in the system to address them. Ongoing staff and patient feedback can and should inform modifications.

System Modification and Improvement are Ongoing. Implementation is an iterative process and never truly ends. The system should be continually evaluated and modified to meet the needs of the practice.

Technology

Buying the Right System. It is important to evaluate vendors and products and choose a system that most closely meets the practice needs. No system will be perfect "out of the box;" they will all require modification. The degree of modification will vary by product, so it is important to do significant research before purchasing a system. In addition to the technical research on products, it is also essential to seek advice from other practices, professional societies, and trusted sources.

Ongoing On-site Technical Support. It is critical to provide ongoing technical support throughout and after the implementation process. Not all staff members start with the same level of technology knowledge and skill; variations will occur in how quickly individuals learn the new system. Ongoing technical assistance greatly reduces staff anxiety and allows the team members to solve problems as they move through the implementation, and at the critical point of working with the system in real time with real patients.

Interoperability of Systems (Data Exchange). A key component of EHR success is the degree of connectivity to other systems, both internally in the practice and with external partners. An EHR can be successfully installed, but can fail to meet the needs of the practice if it cannot communicate effectively with other systems.

Protect Physician-Patient Interaction. A common denominator of EHR implementation failure is that the system impedes interaction and communication between physician and patient. If a system is not focused on improving the quality and efficiency of the patient visit, it will not likely succeed. This is often where workflow redesign comes in. Practices must be ready to rethink all of their operations to ensure that the new system fully supports physician-patient interaction.

Finance and Budget
Adequate Resources. EHR implementation should begin only after allocation of adequate resources to purchase systems and invest in start-up costs of implementation. In addition, resources to backfill for lost productivity must be allocated and ongoing resources for training and implementation should be taken into account.

Lack of Incentives. An important disincentive to EHR implementation is that savings accrue to stakeholders other than the provider. Health plans, patients, and government benefit from physician practice investment in EHR, often to a greater degree than the practice itself. Successful implementation takes non-financial benefits into account and takes advantage of all possible incentives and financial rewards. These include health plan financial incentives, grants, government incentives, and others.

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