



LEVERAGING TECHNOLOGY AND PARTNERSHIPS TO IMPROVE CHRONIC CARE

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SOLUTIONS THAT MATTER. HEALTH CARE THAT WORKS.

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Abstract

Improving the detection and management of chronic disease is one of the most pressing challenges in public health today. In recent years, Health Information Technology (HIT) has emerged as a promising path toward improving chronic outcomes. However, today's clinicians are often overstretched with high patient loads, growing administrative duties, high staff turnover, and increasing responsibilities around quality monitoring and reporting. For clinicians to successfully leverage technology to improve chronic care delivery, they need support, resources, and the evidence to show that adopting HIT can positively impact patient outcomes. In 2014, the Michigan Department of Health and Human Services' Heart Disease and Stroke Prevention Unit and Diabetes Prevention and Control Program partnered with Michigan's Regional Extension Center, the Michigan Center for Effective IT Adoption, to provide these resources to Michigan clinicians. Since 2014, these partners have worked together to provide clinicians with educational resources, technical assistance, and evidence to show the impact of health technology adoption on patient outcomes. In the summary below, we describe the results from this partnership, discuss the implications for clinicians, and provide a model for other states looking to maximize HIT to improve patient care, chronic disease outcomes, and quality improvement.



Introduction: Leveraging Technology to Improve Chronic Care

CHRONIC DISEASE, A PUBLIC HEALTH PRIORITY

Improving the detection and management of chronic disease is one of the most pressing challenges in public health today. Chronic conditions continue to place a high burden on the U.S. healthcare system every year, accounting for the majority of healthcare expenditures and among the main causes of death and disability.¹ Hypertension and diabetes are particularly costly. Treating high blood pressure in the U.S. has been estimated to cost around \$46 billion annually², and diabetes-related medical costs account for more than 20% of all health care expenditures each year.³

TECHNOLOGY CAN HELP

In recent years, Health Information Technology (HIT) has emerged as a promising path toward improving patient outcomes. Particularly since the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009, healthcare leaders are increasingly viewing Electronic Health Records (EHRs), Clinical Decision Support (CDS) tools, and Health Information Exchange (HIE) as essential to improving quality of care and reducing healthcare costs.

Public health leaders recognize the critical role that HIT can play in improving chronic disease management. Growing evidence^{4 5} shows that effective use of HIT systems can help to increase the identification of patients at risk, improve the accuracy of diagnoses and health outcomes, enhance the quality and convenience of patient care, encourage patient participation in care, promote care coordination, facilitate practice efficiencies and cost savings, and decrease the overall burden of chronic disease⁶.

BUSY CLINICIANS NEED SUPPORT

Despite the promise of HIT for chronic care, today's clinicians are often overstretched with large patient panels, growing administrative duties, high staff turnover, and increasing responsibilities around quality monitoring and reporting. Even with policies and programs in place to support clinicians in their adoption of HIT, new workflows and processes can still be viewed as unmanageable and unwelcome additions that increase the risk of clinician frustration and burnout. As a result, HIT continues to go underutilized as a tool for improving chronic care.

PARTNERING TO ACCELERATE HIT ADOPTION

For clinicians to successfully harness technology to improve chronic care delivery, they need appropriate technical support, resources, and guidance. Additionally, healthcare providers want evidence that technology adoption and implementation will actually improve clinical outcomes for their patients. Providing this type of comprehensive support requires coordination and partnership between multiple organizations working to improve quality and HIT adoption at a state level. In the summary below, we describe the results from such a partnership formed in Michigan, and discuss the implications for clinicians and other states looking to more fully utilize HIT to improve patient care, chronic disease outcomes, and quality improvement.



MDHHS and M-CEITA: A Partnership for Quality in Michigan

MDHHS: IMPROVING CHRONIC CARE IN MICHIGAN

In Michigan, heart disease is the leading cause of death, and nearly 35% of Michigan adults have hypertension.⁷ Approximately 10.4% of Michigan adults have been diagnosed with diabetes,^{8,9} and 8.2% of Michigan adults have prediabetes.¹⁰ Over 10 billion dollars is spent annually on heart disease-related medical costs,¹¹ and over 10.5 billion dollars is spent annually on diabetes.¹²

To combat these staggering statistics, the Michigan Department of Health and Human Services' (MDHHS) Heart Disease and Stroke Prevention (HDSP) Unit has worked to promote programs to create a heart-healthy and stroke-free Michigan. The MDHHS HDSP Unit supports programs to increase protective behaviors including physical activity, healthy eating and smoke-free lifestyles, with a particular focus on closing health disparities. The HDSP Unit also works with health systems to aid in the identification and treatment of patients with hypertension or other cardiovascular conditions.

In addition, The MDHHS Diabetes Prevention and Control Program (DPCP) implements evidence-based programs and strategies to reduce the morbidity and mortality associated with diabetes and its complications. The DPCP supports and promotes the CDC-recognized Diabetes Prevention Program and MDHHS certified/ ADA recognized/ AADE accredited Diabetes Self-Management Education and Support services throughout the state. The MDHHS HDSP and DPCP have been working collaboratively since 2013 to improve hypertension and diabetes outcomes in Michigan.

M-CEITA: ACCELERATING THE ADOPTION AND USE OF HIT

The Michigan Center for Effective IT Adoption, M-CEITA, was designated as Michigan's sole Regional Extension Center (REC) in 2010 and has assisted over 5,000 Michigan providers with the implementation and meaningful use (MU) of their certified EHR technology (CEHRT).

As Michigan's federally designated REC, M-CEITA works with Michigan providers to accelerate the selection, adoption, and use of HIT to improve the quality and efficiency of care delivered in Michigan.

In partnership with Michigan's providers, M-CEITA promotes electronic health record (EHR) adoption and the optimal use of HIT by:

- Acting as a trusted agent for providers in product selection and contract negotiations;
- Creating clear, concise resources to support informed decisions;
- Delivering support in ways that are minimally disruptive to practices;
- Decreasing the time it takes a practice to meet evolving regulatory program requirements;
- Promoting broad community benefit through program activities like local hiring and training of staff and fostering peer champions within communities across the state;
- Ensuring that M-CEITA remains a valuable resource through dedication to program sustainability.

MDHHS AND M-CEITA: A PARTNERSHIP FOR QUALITY IMPROVEMENT

In 2014, the MDHHS HDSP Unit and DPCP partnered with M-CEITA to provide clinicians with the comprehensive education, resources, and evidence needed to increase provider use of HIT to improve hypertension and diabetes outcomes in Michigan.

Through this multi-year partnership, MDHHS and M-CEITA have worked together to provide clinicians with 1) statewide HIT educational resources and campaigns, 2) direct-to-provider technical assistance to support HIT adoption and 3) the evidence to show clinicians how HIT adoption correlates with patient outcomes when it comes to the identification and management of chronic disease.



Providing statewide education and resources

The first aim of the MDHHS and M-CEITA partnership was to engage in statewide activities to increase clinicians' understanding of HIT's role in improving chronic care management and to promote quality improvement throughout the state.

In July 2014, MDHHS funded M-CEITA to develop a statewide education package to assist providers as they worked to effectively use HIT to improve hypertension and diabetes identification and management. The resulting program consisted of a four-part webinar, in-person educational series, and a new, web-based HIT eLearning Center where the tools and resources were housed for clinicians to access on-demand across the state. The program was evaluated in 2016 and results showed that the educational series was well received, with participants acknowledging the information and tools as prime facilitators of change within their practice. The eLearning Center platform was equally well received. Participants stated that they intended to visit the site and utilize materials after the conclusion of the webinar, and planned to recommend the resource to their colleagues.

Offering direct-to-provider technical assistance

While access to statewide resources is critical for increasing overall awareness, MDHHS and M-CEITA also recognized that practices could benefit from additional support and tailored materials to accelerate adoption and implementation. With this knowledge, MDHHS worked with M-CEITA to offer technical assistance (TA) to selected organizations.

Beginning in 2015, M-CEITA delivered direct-to-provider TA through a series of onsite, phone and email consultations with practice teams. Depending on level of need, assistance included reviewing, refining, and implementing protocols for identifying patients with undiagnosed hypertension and diabetes, assisting with CDS configuration and implementation, reporting and improving Clinical Quality Measures (CQMs), implementing a patient Self-Monitoring Blood Pressure (SMBP) program and using HIT to capture this data, and implementing best practices for recording and improving medication adherence and compliance. M-CEITA also provided practices with access to the tools and resources developed under the statewide education campaign described above.

Increasing the evidence-base: linking HIT with outcomes

Finally, MDHHS and M-CEITA aimed to increase the evidence-base around the specific relationship between HIT and patient outcomes to help further increase physician understanding of HIT's role in improving quality improvement for chronic disease management and care. In 2016, M-CEITA analyzed data from the Medicaid EHR Incentive Program and Medicare Public Use Files related to cardiovascular health and diabetes-specific health outcomes. M-CEITA then identified ways in which those outcomes were influenced in relation to clinician use of HIT.

Results of the analysis (detailed below) suggested that providers' utilization of HIT significantly influenced patient health outcomes as measured by specific CQMs.

1. Providers successfully attesting to the Medicare or Medicaid EHR Incentive Program (i.e. Meaningful Use or MU) for two or more years reported better patient outcomes.

For all but two CQMs analyzed, providers who attested to MU two or more times reported better patient outcomes when compared to first-time meaningful users. Specifically, providers reporting on CQMs two or more times had two percent more patients with their hypertension under control, and six percent fewer patients with uncontrolled diabetes.



2. Distribution of patient-education resources is highly predictive of better patient health outcomes.

Of all MU measures, the Patient Education measure presented the most significant relationship of providers' performance between a MU measure and CQM performance. Significant correlations between patient resources and provider performance were observed for the majority of hypertension and diabetes-related CQMs. Specifically, the average percentage of patients with hypertension that was adequately controlled increased by 0.20% for each percentage point increase in the number of providers utilizing this functionality. Additionally, the average percentage of patients with diabetes that was not adequately controlled decreased by 0.13% for each percentage point recorded by providers utilizing patient-education resources.

3. Providers who use HIT to refer and transition patients report better health outcomes, overall.

The Health Information Exchange (HIE) MU measure requires clinicians who transition or refer their patient to another setting of care or provider of care to use HIT to create a summary of care record and electronically transmit it to the receiving provider. Providers' performance on the HIE MU measure was a significant predictor for all but one CQM analyzed. The average percentage of patients with diabetes that was not adequately controlled decreased by 0.36% for each percentage point recorded by providers leveraging HIT in transitions of care. Additionally, the average percentage of patients with hypertension that was adequately controlled increased by 0.04% for each percentage point recorded by providers utilizing HIE for referrals and transitions of care.

4. Providers who participate in electronic immunization and specialized registry reporting are more likely to have patients with hypertension and diabetes that is adequately controlled.

Providers that submitted data to immunization and specialized registries were more likely to have patients with hypertension and diabetes that was reported as being adequately controlled. Specifically, patients with hypertension had 1% and 4% mean improvements in controlled high blood pressure as reported by providers that submitted data to the immunization and a specialized registries, respectively. Additionally, patients with diabetes saw a 1% and 7% mean difference in controlled A1c as reported by providers that submitted data to both the immunization registry and a specialized registry.

5. Providers who use clinical decision support tools have a significantly higher percentage of patients with adequately controlled hypertension.

The meaningful use CDS measure #1 requires providers to implement five interventions related to four or more CQMs at a relevant point during patient care. Providers that met the CDS measure #1 had 8% more patients with their hypertension under control when compared to providers that did not meet the MU measure ($64\% \pm 18\%$ vs. $56\% \pm 24\%$). Providers that met CDS measure #1 also had 6% more patients with their diabetes adequately controlled than those that did not meet the MU measure ($46\% \pm 28\%$ vs. $52\% \pm 32\%$).



The Verdict: Prioritize HIT to Improve Quality

As described above, the partnership between MDHHS and M-CEITA resulted in new statewide resources for clinicians, direct-to-provider technical assistance programs, and evidence documenting that clinicians who leveraged HIT observed better patient outcomes related to hypertension and diabetes compared to providers who did not fully utilize the technology.

While the Michigan partnership focused specifically on improving quality outcomes around hypertension and diabetes, these findings hold important implications for clinicians, policy makers, and state health departments seeking to improve quality outcomes in any area, particularly when considering the passage of the Medicare Access & CHIP Reauthorization Act of 2015 (MACRA) and through programs such as the new Quality Payment Program (QPP).

A CONTINUED SHIFT TOWARD QUALITY

On April 15, 2015, the Medicare Access & CHIP Reauthorization Act of 2015 (MACRA) passed, setting explicit goals for the implementation of alternative payment models and value-based payments in the coming years. As these value-based reimbursement programs continue to take shape, providers will increasingly need technical support in the use of HIT to demonstrate that they are providing care aligned with current recommendations. Under the MACRA legislation, Medicare set a 2016 goal of tying 30% of payments to quality or value through alternative payment models, and by the end of 2018, 50% of payments must be tied to these models. In order to maintain the highest reimbursement rates possible, providers need to demonstrate that they are consistently providing quality, low-cost care and meeting reporting requirements, which will require consistent use of HIT.

CLINICIANS SHOULD PRIORITIZE HIT AND UTILIZE SUPPORTS

As shown in this analysis, clinicians who take full advantage of their HIT to implement clinical decision support tools, electronically connect and submit data to immunization and specialized registries, refer and transition patients electronically, and provide guided, clinically-relevant patient education resources observe better patient outcomes related to hypertension and diabetes when compared to providers that do not utilize HIT to accomplish these tasks. Given this evidence, and with the recent changes in legislation, it has never been more important for health care providers and their teams to maximize their HIT to focus on quality improvement and to utilize their local, state, and federal technical assistance support programs to help them do so.

STATES SHOULD FORM PARTNERSHIPS TO ACCELERATE ADOPTION

Finally, it is crucial that state health departments and regional HIT experts continue to form partnerships to develop the resources, materials, and evidence clinicians need as they work to adopt HIT. As the industry continues to shift toward technology and value-based reimbursement, collaborations like these will be essential to improving care and reducing the cost of chronic disease nationwide.

You can learn more about the M-CEITA and MDHHS partnership, as well as access our HIT resources at our website: www.HITeLearningCenter.org.



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Appendix A

Clinical Quality Measures Used in the Data Analysis

CLINICAL QUALITY MEASURES USED IN ANALYSIS

HIGH BLOOD PRESSURE

1. CMS165/NQF0018 CONTROLLING HIGH BLOOD PRESSURE
2. CMS22/NQF TBD SCREENING FOR HIGH BLOOD PRESSURE
3. CMS65/NQF TBD IMPROVEMENT IN BLOOD PRESSURE

DIABETES

1. CMS122/NQF0059 HEMOGLOBIN A1C (HBA1C) POOR CONTROL
2. CMS131/NQF0055 DIABETIC EYE EXAM
3. CMS123/NQF0056 DIABETIC FOOT EXAM
4. CMS148/NQF0060 HBA1C TEST FOR PEDIATRIC PATIENTS
5. CMS134/NQF0062 URINE PROTEIN SCREENING
6. CMS163/NQF0064 LOW DENSITY LIPOPROTEIN (LDL) MANAGEMENT

The full Data Analysis can be accessed and downloaded from the HIT eLearning Center:

<http://www.hitelearningcenter.org/>