Healthy Weight Surveillance: Obesity Prevention through Public Health – EHR Interoperability

Background

Obesity in the U.S. is a major health issue that has galvanized policy makers and public health advocates nationwide. A recent Institute of Medicine (IOM) report describes the magnitude of the problem. Over one-third of adults are now obese, with minorities often suffering even higher obesity prevalence. Obesity among children is also troubling, with an increase in prevalence from 5 percent to 17 percent over a recent 30 year period. Obesity is an important risk factor for many debilitating conditions, including Type 2 Diabetes, high blood pressure, cardiovascular disease, stroke and some cancers. This helps explain an estimated annual cost of obesity-related illness that is $190.2 billion (in 2005 dollars), or nearly 21 percent of annual U.S. medical spending. As our nation wrestles with the growth of Medicare spending and transitions to a pay-for-performance health care system, we must explore new approaches for helping people reach a healthier weight.

The Healthy Weight Surveillance Initiative

As part of that exploration, the Division of Nutrition, Physical Activity, and Obesity (DNPAO) at the U.S. Centers for Disease Control and Prevention (CDC) has partnered with health information technology (HIT) experts, state and local public health agencies, and the Public Health Informatics Institute (PHII) to develop the Healthy Weight Surveillance initiative. This project seeks to utilize electronic health record (EHR) data captured during patients' clinical encounters for more detailed descriptions of obesity prevalence to better inform interventions.

State and local public health agencies investigating EHR-based obesity surveillance have been applying a variety of techniques for data collection. Given these variations, agencies asked CDC to provide guidance on a uniform approach that would allow data to be aggregated up from local to state to federal levels and support comparisons between jurisdictions. In response, CDC worked with HIT experts from Health Level 7 (HL7) and Integrating the Healthcare Enterprise (IHE) to created standards that describe how body mass index (BMI) data should be sent from private clinical health care settings to a public health agency. These standards include an HL7 implementation guide for a Healthy Weight message and an IHE Healthy Weight profile. The IHE Healthy Weight profile articulates how clinical EHR systems can interoperate with public health surveillance systems by exchanging HL7 version 2.5.1 Healthy Weight messages or a Healthy Weight Summary based on the HL7 Clinical Document Architecture (CDA). The use of HIT standards like IHE and HL7 should allow for better integration between information systems used by clinical health care providers and public health agencies. It is hoped this integration will lead to more timely and detailed surveillance information that public health agencies can use to develop strategic partnerships and deliver more targeted obesity prevention interventions.

Demonstrations and Tests

The Healthy Weight Surveillance standards were recently demonstrated in the Interoperability Showcase at the 2014 Healthcare Information and Management Systems Society (HIMSS) conference.

The Interoperability Showcase is a forum for live demonstrations of EHR data exchange before audiences of health care system administrators and policy experts. Increasingly, public health agencies and systems developers are participating in these events to highlight how EHR systems can provide more timely and accurate surveillance data.

Public health systems developers Software Partners and the University of Washington attended the Interoperability Showcase and participated in scenarios demonstrating how health care and public health can partner to combat obesity. One scenario, based on an adult female's primary care physician (PCP) visit, began with the patient monitoring health issues related to her weight and pregnancy in a personal health record (PHR) system developed by Get Real Health. Information in the PHR was shared with GE Centricity, the EHR used by the patient's PCP. An emerging technology standard demonstrated by OZ Systems showed how the PCP's EHR could retrieve an electronic form from an external form repository and transfer EHR data to a public health agency by converting the electronic form data to a Healthy Weight Summary. In this demonstration, University of Washington presented a prototype surveillance system that received the patient's Healthy Weight Summary and aggregated it with similar reports to display obesity prevalence by age, sex, ZIP code and occupation. Such information could, for example, allow a public health agency to better partner with local employers and develop worksite wellness programs that support and encourage exercise and a more nutritious diet.

Software Partners showed how Healthy Weight Surveillance could be used to both improve pediatric care during a well child visit and enhance a public health agency's ability to prevent childhood obesity. In this scenario, an EHR developed by Medical Informatics Engineering was used by a child's pediatrician to record height, weight, immunization status and other pediatric health indicators. The EHR then sent the patient's Healthy Weight Summary to CareEvolution, an HIT vendor that provides tools for health information exchange (HIE). An HIE can serve as a central repository for a region's health information and ensure that stakeholders receive the reports and notifications they need. In this case, observations of the child's obesity and immunizations were sent to Software Partners to demonstrate how a public health agency might use neighborhood-level child health surveillance reports to partner with schools and city planners and provide more opportunities for physical activity and healthier eating.

Potential of the Healthy Weight Initiative

The Healthy Weight Initiative demonstration at the 2014 Interoperability Showcase provided a proof of concept to clinical healthcare representatives, who are becoming increasingly aware of public health and its charge to improve health at a population level. In some locations, private health care entities and public health agencies are exploring partnerships for community health assessment and improved population health outcomes. These explorations will likely challenge public health to consider the business case for this technology to be used by more health care partners and how technology might enable improved surveillance for obesity and other chronic conditions. At the same time, these new capabilities should encourage public health to assess how it partners with clinicians, patient advocates, and other stakeholders to best monitor the diseases driving health care costs and impacting health outcomes.

References:

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