PS3-52:

Heart Health in Your Pocket: Lessons Learned from the Development of a Smartphone App

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Background/Aims: As part of the Million Hearts national initiative to prevent cardiovascular disease (CVD), there are increasing calls to leverage health information technology. The Marshfield Clinic developed a Heart Health Mobile application (app) that is designed to improve awareness of CVD risk and promote risk factor control among regional smartphone users. It deploys an engaging user interface that provides a brief CVD risk assessment that takes into account self-reported behavioral, familial, and biometric risk factors, including blood pressure and lipids. Users are then directed to nearby community pharmacies, clinics, and other locations where more advanced CVD risk factor screenings can be obtained. Along with social media connections and measurement prompts, basic education materials are provided on key CVD prevention topics such as hypertension, dyslipidemia, weight management, and tobacco cessation. **Methods:** A multidisciplinary team of 24 members was created to develop the app over a 30-day timeframe. This team included a broad cross-section of clinical professionals from medicine, epidemiology, health IT, usability and graphic designers, business analytics, and marketing. An Agile programming method was used to promote adaptive planning and evolutionary development in self-organizing, cross-functional teams. **Results:** The iOS app was successfully developed, tested, and launched within the 30-day timeframe. It was submitted competitively as part of the Million Hearts Risk Check Challenge, a CVD prevention app contest sponsored by Office of the National Coordinator for Health Information Technology. The final product is shown in detail at <http://www.youtube.com/watch?v=qfESTQipjtw>. The app was developed in six different languages, and epidemiologic data on downloads, unique users, geo-segmentation, risk factor profile, and customer loyalty, among other data points, are actively collected. **Conclusions:** Health-related consumer smartphone apps can be developed rapidly and brought to scale as part of healthcare delivery systems' business and clinical strategies. They provide users with important information, education, and directions on CVD prevention and have wide-ranging potential across numerous health conditions. From an HMORN perspective, such apps also provide real-time data collection methods that can be used to identify health trends at a lower cost (and comparable quality) relative to traditional population research methods.

Keywords: Cardiovascular Disease; Prevention; Smartphone
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PS3-53:

A Multi-Site Comparison of Laparoscopic Gastric Band vs. Laparoscopic Gastric Bypass Bariatric Surgical Procedures

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Background/Aims: The two most common bariatric surgical procedures are laparoscopic gastric band (LAGB) and laparoscopic gastric bypass (RYGB). Single site comparisons suggest that RYGB may result in greater weight loss at the expense of more short-term complications, whereas LAGB may be associated with less weight loss and more long-term complications. It is unclear whether these results extend to other populations. **Methods:** This is a multi-site retrospective cohort investigation of LAGB vs. RYGB. Outcomes are: 30-day operative complications; rehospitalization at 1 and 2 years; and weight loss at 2 years. Multivariable logistic regression, Cox proportional hazards, and repeated measures will be used to assess outcomes as a function of type of surgery. **Results:** From 2005–2009, there were 1,521 LAGB and 5,963 RYGB procedures at 11 sites. Mean pre-surgical BMI was 42.6 and 44.6, and mean age was 47.0 and 45.8 for each procedure respectively.

RYGB patients were more likely to have diabetes, hypertension, gastric reflux, and sleep apnea. RYGB patients had more commercial insurance (89% vs. 72%), were less likely to be Caucasian (67% vs. 73%), and were 84% (vs. 82%) female. Results at 30-days for LAGB vs. RYGB respectively were: Failure to discharge, 0 (0%) vs. 8 (0.1%); mortality, 0 (0%) vs. 1 (0.02%); thrombotic diagnoses, 6 (0.5%) vs. 63 (1.1%); and reintervention, 10 (0.9%) vs. 30 (0.5%). Mean long-term follow-up BMI was 37.2 for LAGB and 33.3 for RYGB. All differences were statistically significant at $P = 0.05$ in bivariate models. **Conclusions:** Across multiple sites, individuals with higher BMI and morbidity burden were more likely to receive RYGB surgery. Preliminary results suggest that long-term weight loss and certain short-term complications are significantly greater for RYGB than LAGB procedures, and that LAGB procedures are more likely to have 30-day reintervention. Multivariable comparisons adjusting for pre-operative covariates and follow up time will better clarify risks and benefits of these procedures.

Keywords: Obesity; Bariatric Surgery

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PS3-54:

Effect of Bariatric Surgery on Chronic Use of Opioid Medications

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Background/Aims: Opioids are used to manage chronic painful conditions associated with obesity. It is unknown whether weight loss attained after bariatric surgery results in a change in chronic opioid use and if so, over what timeframe. We explored the effect of bariatric surgery and associated weight loss on chronic opioid use. **Methods:** This retrospective cohort study included patients from ten Scalable Partnering Network for Comparative Effectiveness Research (SPAN) sites who had bariatric surgery between 1/1/2005 and 12/31/2009. Patients had health plan enrollment and a drug benefit during the year before and after surgery. Patients were classified based on total oral or transdermal opioid days' supply dispensed during the year prior to surgery as having no, some, or chronic use. To assess change in opioid use in the year following surgery relative to the year prior to surgery, total opioid use for each user was determined using morphine equivalents. Dispensings within 30 days post-surgery were excluded. Longitudinal mixed effects models were used to assess change in morphine equivalents dispensed before/after surgery. **Results:** The cohort included 11,719 patients. Overall, 1016 had chronic opioid use in the year before surgery and 1222 had chronic opioid use in the year after surgery. Of the chronic users pre-surgery, 760 (74.8%) remained chronic users post-surgery. Of the 10,703 with some or no opioid use pre-surgery, 462 (4.3%) became chronic users post-surgery. The most commonly dispensed opioids were hydrocodone combinations, oxycodone, and codeine combinations. Among pre-surgery chronic users, median daily morphine equivalents increased from 22.36 pre-surgery to 25.22 post-surgery (paired sign test $P < .0001$). **Conclusions:** During the year after bariatric surgery opioid use appears to increase in the overall bariatric surgery population or in those with pre-surgery chronic opioid use. Longer timeframes should also be evaluated.

Keywords: Bariatric Surgery; Opioid; Pain

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PS3-55:

Utilization of High-Technology to Collect Health Risk Assessment Information from Medicare Members: A Feasibility Study of Interactive Voice Response (IVR) and an Online Survey Tool

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Background/Aims: Kaiser Permanente (KP) has been working to develop a standardized approach to preventive care for Medicare members that includes completion of a Total Health Assessment questionnaire to provide data that the patient's health care team can use to generate a personal prevention plan as part of an Annual Wellness Visit. In order to minimize the