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registered nurses. Methods: Non-random, purposive sampling was performed. Data were collected by means of a questionnaire, separately for physicians and laypersons, which included socio-demographic, telemedicine-related and APN preference questions. Data analyses were performed using SPSS 25.0 statistical software. Descriptive statistics and Mann-Whitney test were used for comparisons (p < 0.05).

Results: The public was more open to accept the use of smart devices than GPs (p < 0.001), but doctors preferred internet contact more compared to laypersons (p < 0.001). If doctors and APNs were believed to have the same level of competency, lay people would equally choose to see a doctor or an APN nurse (p > 0.05). More than 50% (60.5%) of doctors would only approve APNs working independently if they did so under professional supervision.

Conclusions: Telemedicine was generally welcome by GPs. Assuming equal service quality, laypersons did not reject nurse consultation. The provision of telemedicine health services in GP practices should also be part of the APN competence. Development of a legal framework for independent APN services and designing telemedicine protocols are warranted.

MT11
ARE MHEALTH INTERVENTIONS TO PREVENT DIABETES COST-EFFECTIVE? A SYSTEMATIC REVIEW
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Objectives: To synthesize evidence on the cost effectiveness of mHealth interventions designed to prevent diabetes.

Methods: We conducted a systematic review of economic evaluation studies evaluating mHealth interventions used to prevent the development of diabetes. Studies were included if published between January 2000 and December 2020 underwent a blinded review by two researchers using pre-specified criteria. Studies meeting criteria were analyzed for key economic evaluation component including study setting and population, decision analysis model, outcome measures, and cost-effectiveness. Studies were reviewed for inclusion. All four of the studies were published after 2015. The types of mHealth interventions assessed included digital behavioral counseling program, online diabetes prevention program, and SMS messaging. Two studies had non-United States settings. The most common perspective was the healthcare system perspective (3 studies). We found strong evidence for cost-effectiveness of the online diabetes prevention program in Singapore.

Conclusions: Our results suggest there is limited evidence demonstrating the value of mHealth interventions for people with prediabetes. The growing popularity of mHealth interventions across chronic conditions including prediabetes should warrant additional economic evaluations to facilitate stakeholders’ assessment of their value prior to widespread adoption.

MT12
CHANGES IN HEALTHCARE RESOURCE UTILIZATION IN PATIENTS USING AN FDA-AUTHORIZED PRESCRIPTION DIGITAL THERAPEUTIC FOR OPIOID USE DISORDER OVER A 12-MONTH PERIOD
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Objectives: The rising incidence of opioid use disorder (OUD) in the U.S. places a substantial burden on the healthcare system. This study examined changes in all-cause healthcare resource utilization (HCRU) among patients prescribed an FDA-authorized prescription digital therapeutic (PDT) for OUD.

Methods: A 12-month retrospective analysis of HealthVerity PrivateSource20 closed claims data was conducted in OUD-diagnosed adults with at least 8 months of continuous enrollment before (pre-index) and after (post-index) PDT initiation (index). HCRU included facility and clinician service encounters, incidence rate ratios (IRRs) were compared between pre-index and post-index periods using a repeated-measures negative binomial model, adjusted for number of days of follow-up.

Results: Of 901 eligible patients (median age 36 years, 62.4% female, 73.5% Medicaid-insured recipients) the main diagnoses were OUD (72.3%) and 15.7% had two, 7.5% had three, and 5.5% had four or more prescriptions. Overall hospital encounters decreased significantly in the post-index period by 22% (IRR: 0.78; 95% CI: 0.69-0.89; P < 0.001) driven by a 25% decrease in inpatient stays (IRR: 0.75; 95% CI: 0.58-0.99; P < 0.001) and a 22% decrease in emergency department (ED) visits (IRR: 0.78; 95% CI: 0.68-0.89; P < 0.001). IRRs were calculated for all categories, including pharmacy, management, and psychiatric services increased by 88% (IRR: 1.88; 95% CI: 1.29-2.73; P < 0.001) and 25% (IRR: 1.25; 95% CI: 1.14-1.38; P < 0.001) respectively. Decreases were observed in drug testing of 18% (IRR: 0.82; 95% CI: 0.76-0.89; P < 0.001), and Internet searches were reduced by 20%. (IRR: 0.80; 95% CI: 0.67-0.97; P = 0.022). Among patients on buprenorphine (n=619) adherence rose significantly (P < 0.001) from a medication possession ratio of 0.649 (SE 0.018) to 0.848 (SE 0.018).

Conclusions: In patients prescribed an FDA-authorized PDT for OUD, key indicators of care utilization, including ED visits, and recovery-related services were reduced over a 12-month period, and the use of buprenorphine increased.

MT13
MEASURING REAL-WORLD IMPACT OF SUBSIDY DECISION ON SLEEP TESTS UTILISATION FOR THE DIAGNOSIS OF OBSTRUCTIVE SLEEP APNOEA
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Objectives: Lab-based polysomnography (PSG), for diagnosing obstructive sleep apnoea (OSA), is a subsidised inpatient service in Singapore’s public healthcare institutions (PHIs). The alternative, home sleep test (HST), is cheaper and can be prescribed in the outpatient setting. Following health technology assessment performed by Agency for Care Effectiveness, HST was listed as a subsidised service in PHIs in May 2019. This study aims to assess the impact of the subsidy decision on sleep tests utilisation. Methods: We conducted an interrupted time series (ITS) analysis using sleep tests utilisation data submitted by PHIs from January 2018 to June 2021. Segmented regression models were used to assess the degree of level change (LC) and trend change (TC) of HST and PSG. Data points during Singapore’s most stringent COVID-19 restrictions were modelled as “wild” points to account for seasonality. Autocorrelation was tested and corrected by including an autoregressive or moving average term in the models. Results: Subsidy implementation increased the use of HST from 12% of all sleep tests pre-subsidy to 26% post-subsidy. Despite multiple periods of interruptions, associated with COVID-19 restrictions, ITS showed subsidy implementation led to significant level change in HST utilisation [LC 36.1 (95% CI: 15.1 - 57.2); TC -0.5 (95% CI: -2.3 - 1.4)]. There was also a trend towards reduction in PSG, though this did not reach statistical significance [LC -44.3 (95% CI: -126.6 - 38.2); TC -2.0 (95% CI: -11.6 - 7.7)]. As HST is much cheaper than PSG, total charge avoided by the Singaporean healthcare system in 10 years is projected to be in the range of SGD9 million to SGD14 million.

Conclusion: Extension of subsidy to HST appeared to have improved accessibility of sleep tests for OSA diagnosis and resulted in cost saving to Singapore’s healthcare system.
MT16 UNRAVELLING THE PUZZLE FOR MEDICAL DEVICES: WHAT IS NEXT FOR INDUSTRY?
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Objectives: Healthcare decision-making for medical devices (MD) faces unique challenges, such as scarce trial data and less standardized clinical outcomes. Although regulatory agencies have attempted to increase the evidence bar for the assessment of MDs reimbursement bodies fall behind in providing clear guidance. Although decision-makers do not make a clear distinction between challenges and potential benefits unique to devices, such as the inability to trial blinding or formal incorporation of other outcomes specific to MDs in decision-making.

Results: Given the trend for increased scrutiny of MDs, manufacturers are facing challenges in raising evidence without clear methodological solutions and gap in evidence standards from reimbursement bodies. Increased attention to real-world evidence may facilitate higher evidence standards by enabling better MD study designs, while respecting differences to pharmaceuticals, such as the possibility for MD evolution. Recognizing these challenges will be vital for efforts like the EU joint Clinical Assessment to provide acceptable timely access for patients.

MT17 ASSESSMENT OF DEVICE FAILURES AND MEDICATION ERRORS WITH THE PEGFILGRASTIM ON-BODY INJECTOR
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Objectives: The pegfilgrastim on-body injector (OBI) facilitates the time-relaxed administration of pegfilgrastim the day after chemotherapy, as clinically recommended for the prevention of febrile neutropenia. As patients undergo multiple chemotherapy cycles and receive a new OBI device each cycle, estimation of device failure rates should be normalized to the number of devices used. Past studies reported uncorrected failure rates in the range of 6.3% to 6.8%. Error rates were observed on per patient rather than per device or chemotherapy cycle. This overestimation can negatively influence physicians’ perception of the OBI. As over 1 million patients have received the OBI, we evaluated OBI device failures in the postmarketing setting and included observational study.

Methods: We report OBI failures in patients receiving chemotherapy assessed in two different data sources. Medication errors with the OBI, defined as missed or incomplete dose, dose delay or dose interruption of pegfilgrastim due to user error or device malfunction, were assessed utilizing our real-time database surveillance system (reporting period: 15 May 2018–15 May 2021). Device failures of the OBI were assessed in a prospective observational study conducted in the United States (enrollment: 07 November 2018–09 April 2020); device failure was physician-reported and defined as any missing, delayed, or incorrect dose. The post marketing surveillance data revealed that the reporting rate of medication errors with the OBI within the EU was 0.58% (161 events in 27,666 distributed devices) over 3 years. In the prospective observational study (n=1624), 6 failures were reported in 6,087 cycles (0.1%). Conclusions: The utilization of preventive DHIS in US primary care settings was associated with meaningful improvements in both clinical and non-clinical outcomes across user types; however, adoption and implementation of DHIS were primarily limited to EHIS with clinicians being the most frequent user receiving care management alerts for patients with chronic disease burden.

MT18 UTILIZATION OF DIGITAL HEALTH INTERVENTIONS IN U.S. PRIMARY CARE SETTINGS TO IMPROVE PREVENTIVE CARE: A SCOPING REVIEW
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Objectives: Prior studies have examined the impact of individual digital health interventions (DHIs) on preventive care receipt, but no comprehensive review of these modalities has been synthesized. A scoping review with a subgroup analysis was conducted to understand how DHIS are being used in United States (US) primary care settings to enhance and support the delivery of preventive care.

Methods: We performed a comprehensive search in PubMed, Embase, and the Cochrane Library databases that examined patients, providers, and/or population stakeholders in US primary care (e.g., outpatient, ambulatory, or long-term care) settings that used at least one digital health technology as an intervention for prevention (e.g., primary, secondary, tertiary, or quaternary) and reported beneficial outcomes on health, healthcare performance, and/or implementation science.

Results: Literature searches identified 5,274 citations and 1,060 full-text studies. Following the subgroup analysis, 241 articles met inclusion criteria. Studies primarily examined DHIS among health information technology including electronic health records (EHRs) (59%), clinical decision support (37%), telehealth (37%), or multiple technologies (61%). DHIS were predominantly used for tertiary prevention (55%). Of the core primary care functions, comprehensiveness was addressed most frequently (87%), DHIS were used (453%), patients (462), or multiple (37%). Reported outcomes were primarily clinical (70%) and statistically significant improvements were common (69%). Reported outcomes were summarized across five topics for the most novel/distinct DHIS: population-centered, patient-centered, care access expansion, panel-centered (dashboarding), and application-driven DHIS. Quality of the included studies was moderate-to-low. Conclusions: The utilization of preventive DHIS in US primary care settings was associated with meaningful improvements in both clinical and non-clinical outcomes across user types; however, adoption and implementation of DHIS were primarily limited to EHIS with clinicians being the most frequent user receiving care management alerts for patients with chronic disease burden.

MT19 COMPARISON OF DIAGNOSTIC ACCURACY FOR DIABETIC KIDNEY DISEASE: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS
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Objectives: Fasting Plasma Glucose (FPG) and Hemoglobin A1c (HbA1c) are used as diagnostic tests for diagnosis of diabetes mellitus (DM) but it is unclear which test has the best diagnostic accuracy. This review aimed to estimate the diagnostic accuracy of HbA1c = 6.5%, FPG ≥ 126 mg/dl, and the combination of HbA1c = 6.5% or FPG ≥ 126 mg/dl, compared with Oral Glucose Tolerance Test (2-hour post load glucose) (OGTT-2hr) ≥ 200 mg/dl for diagnosis DM.

Methods: We performed a comprehensive systematic review and network meta-analysis on PubMed, Embase, Cochrane Library, and Scopus from inception to September 24, 2021. Inclusion criteria is any study design comparing HbA1c = 6.5%, FPG ≥ 126 mg/dl, and the combination of HbA1c = 6.5% or FPG ≥ 126 mg/dl with OGTT 2hr ≥ 200mg/dl as the reference test. Data were independently extracted, while risk of bias was assessed using QUADAS-2 by two reviewers. Network meta-analysis was conducted using the R package networkdmeta. Relative ranking of all tests were also assessed. Results: Out of 5,026 studies, 73 were included. The sensitivity of HbA1c, FPG, and combination of HbA1c and FPG was 0.51 (95% Credible Interval (CrI): 0.43, 0.58), 0.49 (0.43, 0.55), and 0.64 (0.59, 0.69) respectively. Experience with >30,000 OBI in the EU and US suggest medication errors with the OBI were 0.58% (95% CrI: 0.49, 0.68), and 0.95 (0.88, 0.98), respectively. The diagnostic odds ratio (DOR) was also reported as 26.10 (15.75, 44.07), 41.86 (26.75, 64.62), 31.50 (12.24, 83.44), respectively. The corresponding positive likelihood ratio (LR+) was 13.36 (8.91, 20.72), 21.94 (15.04, 31.88), and 11.78 (5.48, 26.56). In terms of ranking, the combination of HbA1c ≥ 6.5% or FPG ≥ 126 mg/dl is the best based on sensitivity whereas FPG ≥ 126 mg/dl is