

HORIZON SCANNING

Horizon Scan Roundup – 2015

A Compilation of New and Emerging Health Technologies
From Around the World

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

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2015 Horizon Scan Roundup

The CADTH Horizon Scanning service identifies and monitors new and emerging health technologies likely to have a significant impact on health care in Canada. The service systematically scans and monitors health information resources to identify promising health technologies not yet in wide use in the Canadian health care system. It then provides summaries of current information about the use, effectiveness, cost, and implementation of these technologies, which it publishes regularly in bulletins and newsletters.

Part of CADTH's horizon scanning process involves monitoring what other international horizon scanning agencies and services have been tracking and evaluating for their own jurisdictions. The resulting "roundup" is a compilation of 126 titles published in 2015 by 12 major international horizon scanning services and selected health organizations recognized for their identification of innovative technologies. The materials have been organized into the medical specialty categories used to categorize CADTH's own reports. The focus of this roundup is restricted to non-drug medical technologies including medical devices, laboratory tests, biomarkers, programs, and procedures. For more information about the horizon scanning agencies whose work is included in this report, visit the horizon scan websites listed on page 4.

Horizon Scan Agency Websites Included in This Roundup

AETS

Agencia de Evaluación de Tecnologías Sanitarias (Spain)

AHRQ

Agency for Healthcare Research and Quality
Healthcare Horizon Scanning System (US)

BCBS-CCE

BlueCross BlueShield Center for Clinical Effectiveness (US)

CADTH

Horizon Scanning (Canada)

Cleveland Clinic Innovations (US)

CNESH

Canadian Network for Environmental Scanning in Health (Canada)

ECRI Institute (US)

EuroScan

International Network on New and Emerging Health Technologies

HealthPACT

Health Policy Committee on Technology (Australia)

McGill-TAU

Technology Assessment Unit of the McGill University Health Centre (Canada)

NICE

National Institute for Health and Clinical Excellence Medtech Innovation Briefings (UK)

NIHR-HSRIC

National Institute for Health Research Horizon Scanning Research and Intelligence Centre (UK)

Anesthesia and Pain Management

The Epidrum for Aiding Access to the Epidural Space

NICE

The Epidrum is a device developed to help clinicians administer epidural analgesics or anesthesia medication. When a needle is inserted into the epidural space, the device provides a visual signal that the insertion has been successful. Better accuracy when placing epidural needles may lower the incidence of complications resulting from incorrectly placed needles.

Freedom Spinal Cord Stimulator System for Chronic Back and Leg Pain

NIHR-HSRIC

The Freedom Spinal Cord Stimulator System is a tiny, wireless device that is injected through a needle into the epidural space of the spine. It blocks pain by creating an electrical energy field. The system differs from earlier technology in that the power source is external (worn by the patient), which eliminates the need for surgery and batteries.

High-Frequency Spinal Cord Stimulation and Dorsal Root Ganglion Stimulation for Chronic Pain

HealthPACT

These two technologies are recent evolutions of spinal cord stimulation technologies that stimulate the spinal cord to replace the sensation of pain with paresthesia (tingling and buzzing). Early, small-scale studies show that they provide benefits over traditional spinal cord stimulation technologies for treating chronic pain, especially neuropathic pain.

Arthritis

Potential High-Impact Interventions Report — Priority Area 01: Arthritis and Nontraumatic Joint Disease

AHRQ

Of the emerging interventions for treating arthritis and nontraumatic joint disease, a monoclonal antibody for the treatment of either psoriatic arthritis or ankylosing spondylitis (arthritis affecting the spine) has been identified as potentially having a high impact on health care or the health care system.

Cancer, Imaging, and Radiology

ATEC System for Vacuum-Assisted Breast Biopsy

NICE

The ATEC breast biopsy system is a vacuum-assisted device designed to collect multiple breast tissue samples for analysis. It is a potentially faster and less painful alternative to standard biopsy techniques such as core needle biopsy and open (surgical) biopsy.

Blood and Stool Biomarker Testing for Colorectal Cancer Screening

HealthPACT

New blood- and stool-based biomarker tests are currently being developed for colorectal cancer screening. These tests aim to detect changes in DNA or RNA that would indicate the presence of colorectal cancer and are potential alternatives to the well-established fecal occult blood test.

Circulating Tumour DNA Assays

HealthPACT

Circulating tumour DNA assays provide genetic information that could potentially be used for cancer screening and diagnosis, and to personalize, guide, and monitor treatment. As assays require a blood sample rather than a biopsy, this technique may offer an alternative for patients in whom biopsy is impractical or not possible.

ClearSight MRI for Breast Cancer Lumpectomy

NIHR-HSRIC

ClearSight MRI is an imaging system for use during lumpectomy procedures to determine if all cancerous tissue has been removed. Intended as an alternative to off-site MRI for analyzing excised tissue after surgery, it indicates within minutes if cancer cells have been detected at the edges of an excised breast lump, allowing the surgeon to immediately remove additional tissue.

A Compendium of Technologies for the Diagnosis, Screening, or Treatment of Prostate Cancer

HealthPACT

New and emerging technologies related to prostate cancer treatment include MRI for the screening and active surveillance of low-risk prostate cancer, and molecular tests to determine the aggressiveness of tumours and guide treatment. In addition, ablative techniques — extreme cold, heat, or electric current — and magnetic resonance-guided focused ultrasound target and destroy tumours while preserving the surrounding normal prostate tissue.

The Cytosponge: An Alternative to Endoscopy in Detecting Barrett Esophagus

CADTH

The Cytosponge is a small mesh sponge on a string that is swallowed in order to collect esophageal cells for biomarker analysis. By analyzing the cells, individuals who may have Barrett esophagus, a precursor to esophageal adenocarcinoma, can be identified.

EndoPredict Gene Expression Profiling Assay for Assessing Risk of Breast Cancer Recurrence

NICE

The EndoPredict assay measures the gene expression profiles of women with estrogen receptor-positive and human epidermal growth factor receptor 2-negative breast cancer to assess their risk of developing metastases within 10 years of initial diagnosis. The identified risk level could help determine whether chemotherapy is necessary.

ERBE Flexible Cryoprobes for Bronchoscopic Diagnosis and Treatment

NICE

The ERBE cryoprobe is a bronchoscopy device that freezes targeted tissue and allows it to be extracted for biopsy or as part of the treatment of diseases that cause narrowing or obstruction of the trachea or bronchi. The device could be used in place of conventional bronchoscopic forceps biopsy and airway restoration techniques.

Gene Expression Analysis for Prostate Cancer Management

BCBS-CCE

Two gene expression profiling tests are commercially available in the US for prostate cancers: Prolaris and Oncotype Dx Prostate Cancer Assay. Both use real-time polymerase chain reaction technology to analyze mRNA (messenger molecules carrying genetic information) from tumours and generate scores to help determine the aggressiveness of the cancer.

MRIdian System for MRI-Guided Radiotherapy

HealthPACT

The MRIdian system is an image-guided radiation therapy system that combines MRI and cobalt radiotherapy technologies to generate images of soft tissues both before and during radiation treatment. It allows clinicians to clearly see patients' internal organs during treatment, make adjustments for tumour movement in real time, and minimize unintended irradiation of healthy tissue.

MRI Screening for Prostate Cancer

HealthPACT

There is potential to increase the use of MRI for better and more accurate early prostate cancer detection and screening. MRI can also be potentially used for active surveillance in men who have been diagnosed with low-risk prostate cancer and would otherwise receive radical surgery and radiotherapy.

Multistatic Array Processing for Radiowave Image Acquisition (MARIA) for Detection of Breast Tumours

NIHR-HSRIC

MARIA (Multistatic Array processing for Radiowave Image Acquisition) is a new breast imaging system for detecting breast tumours. It consists of a couch that has an opening containing a hemispherical cup in which the patient places her breast while lying on her stomach. The cup scans the breast using radio waves to produce a 3-D image. It is a more comfortable and potentially safer option than X-ray mammography.

myPath Melanoma for the Diagnosis of Malignant Melanoma

NIHR-HSRC

myPath Melanoma is a gene expression test developed for determining whether a skin lesion is benign or malignant. It is suggested for use alongside biopsy when a definitive diagnosis cannot be made.

The Nottingham Prognostic Index Plus Test for Breast Cancer Management

NIHR-HSRC

This adaptation of the current Nottingham Prognostic Index test is intended to help predict clinical outcomes to guide the treatment of breast cancer patients. It uses a panel of biomarkers to assess the behaviour of a tumour through the measurement of protein expression levels.

OncAlert and SensoDX OraTech for the Diagnosis of Oral Cancer

NIHR-HSRC

These two tests have been developed as quick, non-invasive tools for diagnosing cancer of the tongue, mouth, lips, or gums. OncAlert consists of an oral rinse swished in the mouth and spat into a cup, and a point-of-care device that tests the rinse for specific protein markers that would indicate early-stage cancer. SensoDX OraTech consists of a cartridge into which a cell sample from the mouth is placed, plus a machine that receives the cartridge and analyzes the sample, providing a cancer risk score.

OncoBEAM RAS CRC for Metastatic Colorectal Cancer

NIHR-HSRC

OncoBEAM RAS CRC is a polymerase chain reaction test intended to help determine a colorectal cancer patient's suitability for anti-epidermal growth factor receptor therapy. Using blood specimen rather than a tissue biopsy, it detects *KRAS* and *NRAS* gene mutations in patients.

Potential High-Impact Interventions Report – Priority Area 02: Cancer

AHRQ

Emerging cancer interventions identified as potentially having a high impact on health care or the health care system include a new colorectal cancer screening test and a procedure for preserving fertility in female cancer patients.

Pressurised Intraperitoneal Aerosol Chemotherapy

HealthPACT

This intraperitoneal chemotherapy technique uses a specially designed, single-use microinfusion pump alongside standard equipment to deliver chemotherapy drugs as pressurized aerosols directly into the peritoneal cavity. This method aims to allow for deeper penetration of the drugs into the tissues while decreasing the toxic effects associated with traditional chemotherapy.

The Prosigna Gene Expression Profiling Assay for Assessing Long-Term Risk of Breast Cancer Recurrence

NICE

The Prosigna assay measures the gene expression profiles of women with hormone receptor-positive, early-stage breast cancer to assess their risk of a distant recurrence of disease 10 years after initial diagnosis. It is intended to be used together with other information when making treatment decisions for these patients.

ROCA for the Diagnosis of Ovarian Cancer

NIHR-HSRIC

The Risk of Ovarian Cancer Algorithm (ROCA) is a new way of screening for ovarian cancer. It provides scores – based on a woman's age, menopausal status, personal ovarian cancer risk status, and serum CA125 levels – that, over time, assess a woman's risk of having the disease.

Seralite for Multiple Myeloma and Other B Cell Dyscrasias

NIHR-HSRIC

Seralite has been developed to provide the rapid diagnosis and monitoring of multiple myeloma and other B-cell dyscrasias (disorders of the plasma cells). The point-of-care device measures free light chains in serum to quickly assess myeloma activity, which may allow for earlier diagnosis and more timely treatment decisions.

Single-Dose Intraoperative Radiotherapy Using IntraBeam for Early-Stage Breast Cancer: An Update

McGill-TAU

IntraBeam delivers a single dose of radiation directly into a tumour site immediately after a breast cancer tumour has been removed. This eliminates the unnecessary irradiation of vital organs that occurs with external beam radiation therapy, which uses lower doses of radiation and requires multiple treatments.

Texture Analysis of Radiological Images (TexRAD) for Lung Cancer Assessment

NIHR-HSRIC

TexRAD is image processing software for assessing the prognosis of lung cancer patients. It analyzes the texture of X-ray images taken during a CT scan to provide clinicians with information to use for diagnosis, in treatment decisions, and to monitor treatment.

Tomosynthesis (3D Mammography) for Breast Cancer Screening

CADTH

Digital breast tomosynthesis is an imaging technology for breast cancer screening or diagnosis that captures 3-D images of the breast. It may offer improved breast cancer detection, a reduction in false-positive findings, and allow for better differentiation of lesion types compared with traditional two-dimensional mammography.

WavSTAT4 Optical Biopsy System for Colorectal Cancer Diagnosis

NIHR-HSRIC

WavSTAT4 Optical Biopsy System has been designed to distinguish between normal and pre-cancerous polyps during a colonoscopy. The system operates a low-intensity, non-damaging laser, bringing it in contact with polyp tissue and analyzing it in real time.

The ZedScan as an Adjunct to Colposcopy in Women with Suspected Cervical Intra-Epithelial Neoplasia

NICE

The ZedScan system uses non-invasive electrical impedance spectroscopy to detect pre-cancerous and cancerous cells in the cervix of women with suspected cervical intraepithelial neoplasia. It is used together with colposcopy when making diagnosis and treatment decisions.

Cardiovascular

Algisyl-LVR Implantable Hydrogel (Biopolymer) for Advanced Heart Failure

NIHR-HSRIC

Algisyl-LVR, a hydrogel for thickening and reshaping dilated heart muscle, is a potential new option for patients with advanced heart failure. The hydrogel is injected directly into the heart muscle, where it thickens to form permanent implants to improve the heart's pumping efficiency.

AliveCor Heart Monitor and AliveECG App for Detecting Atrial Fibrillation

NICE

The AliveCor Heart Monitor and associated mobile device software app detect abnormal heart rhythms in adults at risk of atrial fibrillation. Users place their fingers on the pocket-sized device to record ECG readings, which the app analyzes and sends to a health care provider for interpretation.

The AutoPulse Non-Invasive Cardiac Support Pump for Cardiopulmonary Resuscitation

NICE

The AutoPulse is a battery-powered CPR device for the automated delivery of chest compressions. It is intended to be used once compressions have been initiated manually and administers consistent CPR over a long period of time, allowing the rescuer to attend to other patient needs.

Baroreflex Activation Therapy for Treatment-Resistant Hypertension: The Barostim Neo

CADTH

The Barostim neo system has been developed as a new treatment option for individuals with resistant hypertension. It uses electrical stimulation of the baroreceptors in the carotid arteries, which acts on the sympathetic nervous system and results in a reduction in blood pressure.

Bioresorbable Vascular Scaffolds for Coronary Artery Disease

HealthPACT

Bioresorbable vascular scaffolds are an alternative to stents for the treatment of coronary artery disease. Like stents, they widen narrowed arteries to restore blood flow; however, they are made of a material that gradually dissolves after two to three years, potentially allowing coronary arteries to be re-stented, if necessary.

Endovascular Treatments for Acute Ischemic Stroke in Adults

BCBS-CCE

Endovascular treatments for acute ischemic stroke include the administration of intra-arterial tissue plasminogen activator (tPA) directly into the artery close to the occlusion and embolectomy devices for mechanically removing or disrupting clots. These treatments are geared to patients who arrive at the hospital more than three hours after the onset of stroke and are therefore not candidates for standard intravenous tPA.

ENROUTE Transcarotid Neuroprotection and Stent Systems

NIHR-HSRIC

The ENROUTE systems have been developed to reduce the risk of stroke during angioplasty and stenting procedures. They may help protect the brain from debris displaced during these procedures by redirecting the blood away from the brain through a stent inserted in the neck above the narrowed section or blockage and into a filtering system.

Hemosep: A New System for Ultrafiltration and Blood Conservation in Cardiac Surgery

CADTH

Hemosep is a patient blood management system intended to reduce surgical blood loss and allow patients to be re-transfused with their own blood. It collects blood lost during surgery and then filters out the plasma fluids and contaminants, leaving the beneficial components, which can be re-transfused back to the patient.

Leadless Pacemaker

HealthPACT

The leadless pacemaker has been developed as an alternative to the traditional pacemaker for the treatment of heart arrhythmias in patients needing single-chamber ventricular pacing. The entire device is placed inside the right ventricle of the heart, can be implanted in 20 to 45 minutes, and typically requires only 24 hours of patient observation before discharge.

Leadless Pacemakers for the Treatment of Cardiac Arrhythmias

CADTH

Leadless pacemakers are a potential alternative to traditional pacemakers for patients with cardiac arrhythmias who require single-chamber ventricular pacing. Such patients require a less-invasive and shorter implantation procedure, reducing recovery time and eliminating the complications associated with traditional pacemakers.

Lithoplasty Balloon Catheter for Peripheral Arterial Disease

NIHR-HSRIC

The Lithoplasty balloon catheter is a device for treating peripheral arterial disease. While inserted in the artery, it applies a series of mechanical pulses to break up calcium deposits, and then the balloon is blown up to widen the artery and increase the blood flow.

Miniature Leadless Pacemaker

AETS

Micra is currently the smallest pacemaker available, developed for use in the treatment of bradycardia (abnormally slow heart rate). Its size allows it to be implanted during a relatively quick, minimally invasive procedure using a steerable catheter inserted in the femoral vein.

Permaseal for Soft Tissue Access and Closure During Procedures

NIHR-HSRIC

Permaseal is a single-use, disposable device for providing access and closure during cardiovascular procedures. It can be used to create a surgical access site into the heart using biocompatible polypropylene anchors connected by sutures, which then constrict to close the opening after the procedure.

Potential High-Impact Interventions Report – Priority Area 03: Cardiovascular Disease

AHRQ

Emerging cardiovascular interventions identified as potentially having a high impact on health care or the health care system include left atrial appendage occlusion (blockage) devices for reducing atrial fibrillation-associated stroke risk, a portable artificial heart driver, a system for preserving donated hearts during transport, and a transcatheter mitral valve repair device for the treatment of mitral regurgitation.

PROPATEN Heparin-Bonded Vascular Graft for Peripheral Arterial Disease

NICE

The Gore PROPATEN Vascular Graft is a new type of synthetic graft for the treatment of peripheral arterial disease. It is made from expanded polytetrafluoroethylene, with a layer of heparin – an anticoagulant – bonded to its inner surface. The heparin is intended to help keep the graft open by reducing the risk of clots forming.

Rapid Rhythm ECG for Atrial Fibrillation

NIHR-HSRIC

Rapid Rhythm is a wireless, hand-held ECG device developed for screening and early diagnosis of atrial fibrillation and other cardiac conditions. The device obtains ECG data as it is placed over a patient's chest. This information appears on a digital screen on the handset, allowing for immediate diagnosis at point of care.

Remote Ischemic Conditioning for the Reduction of Ischemia-Reperfusion Injury in Acute Myocardial Infarction

CADTH

The autoRIC Device is a portable device for providing automated remote ischemic conditioning to patients with ST segment elevation myocardial infarction (STEMI). This therapy provides protection against ischemia-reperfusion injury (tissue damage from lack of oxygen) by temporarily stopping and restarting blood flow using a series of inflations and deflations of a blood pressure arm cuff.

RhythmView System for Cardiac Arrhythmias

NIHR-HSRIC

RhythmView is a 3-D electrophysiological mapping system developed to diagnose the source of cardiac arrhythmias. Its basket-shaped catheter component fitted with electrodes is inserted into the heart to identify and locate the sources of abnormal electrical activity. Its computer software analyzes the data captured so that areas of abnormal heart activity can be targeted for treatment.

ROX Coupler for Treatment-Resistant Hypertension

HealthPACT

The ROX Coupler is a device that is placed between the femoral artery and vein to create a small channel through which a measured amount of blood is diverted, thereby lowering blood pressure. Patients with hypertension that is not responding to treatment with blood pressure medications may be candidates for the device.

Spiral Flow Peripheral Vascular Graft for Treating Peripheral Arterial Disease

NICE

The Spiral Flow Peripheral Vascular Graft is a new type of synthetic graft for treating peripheral arterial disease. It is designed to move the blood flowing through it in a spiral pattern, which is claimed to reduce the risk of the arterial walls thickening.

Sutureless Valves for the Treatment of Aortic Stenosis

CADTH

Sutureless aortic valve replacement is a less-invasive alternative to conventional surgical aortic valve replacement. A sutureless valve is mounted on a circular frame that, when inserted into the heart, is held in place by the outward radial force of the frame rather than by sutures.

Thermogard XP for Therapeutic Hypothermia after Cardiac Arrest

NICE

Thermogard XP is a temperature management system that can be used for therapeutic hypothermia in critically ill patients after cardiac arrest. By circulating cool saline inside a balloon catheter inserted into the central venous system, it cools the patient's blood as it passes through the catheter.

ZIO XT Patch for Diagnosis of Cardiac Arrhythmia

HealthPACT

The ZIO XT Patch is a small, wire-free electrocardiogram device that adheres to a patient's chest. It can provide up to 14 days of continuous cardiac monitoring – including during sleeping, showering, and moderate exercise. A button on the device allows the wearer to capture symptomatic events.

Dermatology, Wounds, and Injuries

Arsenal ResQFoam for Non-Compressible Abdominal Haemorrhage

NIHR-HSRIC

ResQFoam is an injectable foam for the emergency treatment of non-compressible abdominal wounds before they can be surgically repaired. The foam is injected into the abdominal cavity where it expands rapidly and seals wounded tissues to control heavy bleeding.

The Juxta CURES Adjustable Compression System for Treating Venous Leg Ulcers

NICE

The Juxta CURES is an adjustable wraparound compression system for venous leg ulcers designed to be easier to use than standard compression bandages. The device has a built-in guide card for checking the level of pressure being applied, which can be adjusted using Velcro straps.

MolecuLight i:X for Visualisation of Bacteria in Chronic Wounds

NIHR-HSRIC

The MolecuLight i:X is a hand-held device used to detect bacterial infection in chronic wounds. The device uses fluorescence imaging to detect the presence of bacteria and requires no contrast agents or direct contact with the wounds.

Nitric Oxide-Generating Gel Dressing for Diabetic Foot Ulcers

NIHR-HSRIC

Nitric oxide-generating gel dressing is a wound dressing developed to help diabetic foot ulcers heal faster. When applied, the dressing releases nitric oxide into the wound to control the growth of bacteria and improve blood flow, thereby promoting healing.

Smart-e-Pants: Using Intermittent Electrical Stimulation to Prevent Pressure Ulcers

CADTH

Smart-e-Pants is an undergarment designed to help prevent pressure ulcers in the area at the base of the spine for individuals confined to beds or wheelchairs. The undergarment contains electrodes that deliver intermittent stimulation to the gluteal muscles to simulate the subconscious fidgeting and shifts in body positioning of individuals without mobility issues.

XStat Hemostatic Device for Non-Compressible Junctional Haemorrhage NIHR-HSRIC

XStat is a syringe-like device for controlling heavy bleeding from non-compressible wounds in the groin or axilla (the underarm area connecting the arm to the shoulder). Designed as an alternative to gauze, the device injects small, expandable sponges into the wounds to quickly stop the bleeding and stabilize patients before transferring them to hospital.

Ear, Nose, and Throat

AventaMed Device for Tympanostomy Tube Placement NIHR-HSRIC

The AventaMed device is a potential alternative to conventional tympanostomy tube placement surgery. It drains trapped fluid from the ear, relieves pressure in the ear, or treats a dysfunctional Eustachian tube. The single-use, hand-held device implants an ear tube in less than one second, and the procedure can be performed in an outpatient setting using local anesthesia.

Serenity System to Treat Tinnitus NIHR-HSRIC

The Serenity System treatment for tinnitus consists of a stimulation device implanted in the chest and connected to the vagus nerve, an external wireless transmitter, and computer software. Between two and three hours a day, the patient listens to a sequence of tones, other than the tinnitus tone, while the implanted device stimulates the vagus nerve in the neck. This is thought to train the brain to pay attention to these other tones and ignore the tinnitus tone.

Update: Basic Fibroblast Growth Factor (b-FGF) for the Treatment of Tympanic Membrane Perforation HealthPACT

This new intervention for repairing perforated eardrums involves a gelatin sponge soaked with b-FGF, or fibroblast growth factor-basic protein, which is glued to the perforation. The b-FGF is intended to promote faster healing of the perforation by stimulating the proliferation of epidermal and connective tissue cells, and the procedure may be a less-invasive alternative to conventional tissue graft repair.

Emergency Care

Cerepress and Vittamed 205 for Non-Invasive Intracranial Pressure Measurement NIHR-HSRIC

These two non-invasive devices measure intracranial pressure by way of the eye. Both devices are portable, easy to use, and do not require patient-specific calibration. Elevated intracranial pressure is a dangerously high pressure inside the skull that may happen suddenly (e.g., from traumatic head injury and stroke) or gradually (e.g., from a brain tumour, infection, or hydrocephalus).

[i STAT CG4+ and CHEM8+ Cartridges for Point-of-Care Testing in the Emergency Department](#)

NICE

i STAT is a hand-held analyzer that tests blood at the patient's point of care. It comes with a range of single-use cartridges, including the CG4+ cartridge for detecting lactate and a number of blood gases, and the CHEM8+ cartridge for detecting several blood electrolytes, hematocrit, hemoglobin, and total CO₂. Each cartridge requires two to three drops of blood, and results are provided in two minutes, which could speed up patient processing in emergency departments.

Endocrine, Nutrition, and Metabolic

[Active B12 Assay for Diagnosing Vitamin B12 Deficiency](#)

NICE

This is a new blood test for patients with suspected vitamin B12 deficiency. It detects levels of serum holotranscobalamin, which is a biomarker for vitamin B12 deficiency. The test is reported to have better diagnostic accuracy than tests measuring other biomarkers of vitamin B12 deficiency. The analysis would be done in a laboratory, in a high-throughput format that is fully automated.

[REVIEW: Closed-Loop Artificial Pancreas Device Systems in Development for Type 1 Diabetes](#)

NIHR-HSRIC

This report summarizes the evidence on externally worn, closed-loop insulin delivery systems currently in development. A total of 18 systems are discussed — all of them are in clinical studies but most are still in early stages of development. The first fully automated commercial system is not expected to appear on the market until late 2016.

[Inreda Artificial Pancreas Device for Type 1 Diabetes](#)

NIHR-HSRIC

This closed-loop system functions like an artificial pancreas by continuously monitoring glucose levels and delivering insulin and glucagon, as needed. Glucose readings are transmitted wirelessly to an externally worn control unit, which uses an algorithm to calculate how much insulin or glucagon should be delivered via two pumps. The algorithm is self-learning and adapts to the patient's sensitivity to insulin and glucagon.

[Potential High-Impact Interventions Report – Priority Area 07: Diabetes Mellitus](#)

AHRQ

Emerging interventions for diabetes identified as potentially having a high impact on health care or the health care system include extended-release exenatide delivered by a matchstick-sized osmotic pump implanted subcutaneously in an outpatient procedure, metabolic surgery for treating type 2 diabetes regardless of a patient's BMI, an implant intervention for treating diabetic macular edema, and insulin delivery systems for managing hypoglycemia in patients with type 1 diabetes.

Potential High-Impact Interventions Report – Priority Area 10: Obesity AHRQ

Of the emerging interventions for treating obesity, an intragastric dual balloon system (ReShape Duo) has been identified as potentially having a high impact on health care or the health care system. The dual balloon, developed to reduce capacity in the stomach, is positioned in the stomach using an endoscope and guidewire, and then inflated with saline. Compared with single intragastric balloons that hold the same total volume of saline, the dual balloon system is purported to occupy more space in the stomach without overdistention and to pose less risk of migrating and obstructing the intestines.

Vagal Nerve Blockade for Obesity: VBLOC Therapy Using the Maestro RC2 Device CADTH

VBLOC is an obesity intervention that involves implanting a device into the abdomen using laparoscopic surgery. The device (a next-generation Maestro or pacemaker-like device) produces high-frequency, low-energy electrical pulses to block vagal nerve signals, which affect the sensations of hunger and satiety. Controlled and recharged using an external component, the system provides a minimally invasive alternative to conventional bariatric surgeries.

Vagus Nerve Blocking and Gastric Artery Embolisation for Obesity HealthPACT

Two emerging interventions targeted for obesity include vagus nerve blocking using Maestro devices, and gastric artery embolization. The first intervention involves implanting a device to block nerve signals travelling between the brain and stomach. The second intervention aims to decrease the production of the appetite-inducing hormone ghrelin by blocking blood vessels that supply the upper stomach, which is where ghrelin is produced.

Eye and Vision

AdenoPlus Point-of-Care Test for Diagnosing Adenoviral Conjunctivitis NICE

Viral and bacterial conjunctivitis are difficult to distinguish based on symptoms alone. The AdenoPlus test has been developed to help clinicians in the rapid differential diagnosis of acute conjunctivitis to reduce the unnecessary prescribing of antibiotics for viral infections. It is a single use, point-of-care test that works by identifying the hexon protein of adenoviruses – the most common viruses causing viral conjunctivitis.

LipiFlow Thermal Pulsation Treatment for Dry Eyes Caused by Blocked Meibomian Glands NICE

The LipiFlow system applies heat and gentle pressure to the eyelids to treat dryness caused by meibomian gland dysfunction. It includes a lid-warmer that sits on the eyeball, under the eyelids. An electric heater is embedded in the surface of the lid-warmer to transfer heat through the inner eyelids to the meibomian glands. An eye cup sits over the closed eyelids and uses inflatable bladders to continually pressurize and depressurize, squeezing the meibomian glands against the lid-warmer.

Noctura 400 Sleep Mask for Diabetic Retinopathy

NIHR-HSRIC

When rod cells in the eye adapt to the dark, they require more oxygen. But in patients with diabetes, high blood sugar levels can damage blood vessels, preventing enough oxygen from reaching the retina — known as hypoxia. The Noctura400 Sleep Mask is worn at night over the eyes to deliver a precise dose of light therapy. It prevents the rod cells from adapting to the dark, thereby reducing their oxygen demand and preventing hypoxia. The mask also records when it is being used so that compliance data can be monitored by clinicians.

TearLab Osmolarity System for Diagnosing Dry Eye Disease

NICE

TearLab is a point-of-care device that measures the osmolarity of tear film to help diagnose and monitor dry eye disease. Dry eye disease is accompanied by increased tear film osmolarity (changes to the structure of the layer of tears coating the eye). TearLab is most likely to be used by optometrists or ophthalmologists in a primary or secondary care setting.

XEN Gel Stent for Glaucoma Treatment

NIHR-HSRIC

The XEN Gel Stent is a permanent, soft, gelatin implant for the cornea, 6 mm in length and the width of a human hair. Aimed at reducing intraocular pressure in patients with primary open angle glaucoma, the stent works as a drainage device, creating a channel that enables aqueous humour to flow from the anterior chamber into the subconjunctival space.

Gastroenterology and Liver

BD MAX Enteric Bacterial Panel for Identifying Pathogens in Contagious Gastroenteritis

NICE

The BD MAX Enteric Bacterial Panel is a stool sample-based test for detecting common bacterial pathogens in patients with gastroenteritis. It provides results in two to three hours instead of the several days required with standard, culture-based methods, and may also be more accurate.

Fecal Microbiota Transplantation (Fecal Transplant) for Adults With Inflammatory Bowel Disease

CADTH

This procedure involves transferring filtered fecal material from a healthy donor to someone suffering from inflammatory bowel disease. The goal is to introduce naturally occurring bacteria to the bowel; people with inflammatory bowel disease lack this bacteria, and this may be a key aspect of the disease. The transfer is conducted using a nasogastric tube, enema, or in a colonoscopy.

OnPulse Nerve Stimulation Technology for Urinary and Faecal Incontinence

NIHR-HSRIC

OnPulse is a battery-powered patch that sticks onto the skin of the ankle. It delivers transcutaneous stimulation to the tibial nerve at the ankle to reduce urinary and fecal incontinence. When the tibial nerve is stimulated, it sends sensory information back to the sacral nerves, thereby modulating bowel motility (muscle contraction) and sphincter function. Compared with earlier technologies that involved inserting needle electrodes into the ankle, OnPulse is less invasive and portable.

Ostom-I Alert Sensor for Use with Ostomy Bags

NIHR-HSRIC

This sensor is designed to warn patients when their ostomy (or stoma) bags are full so they can empty them without risk of overflow. The device clips to any ostomy bag and tracks the volume of feces or urine, sending messages via Bluetooth wireless technology to a mobile app to warn the patient when the bag is close to being full.

Peptest for Diagnosing Gastro-oesophageal reflux

NICE

The Peptest is for diagnosing gastroesophageal reflux disease (acid reflux) by detecting pepsin in a sample of saliva or sputum. Samples are collected in tubes by patients at home. These tubes contain citric acid as a preservative and are mailed to a lab or analyzed locally if suitable equipment is available. The Peptest is a lateral flow device with a nitrocellulose membrane and monoclonal antibodies that produce a coloured line if the sample is positive for pepsin.

Reza Band for Laryngopharyngeal Reflux

NIHR-HSRIC

The REZA BAND is a new, wearable device to treat acid reflux. It applies a slight pressure to the neck, stopping stomach acid from travelling through the esophagus to the throat and lungs. Patients can wear the device while sleeping – it incorporates an adjustable comfort band and cushion.

The SpyGlass Direct Visualisation System for Diagnostic and Therapeutic Procedures During Endoscopy of the Biliary System

NICE

The biliary system includes the gallbladder, liver, and pancreas, and it secretes bile through bile ducts. The SpyGlass System is used for the diagnostic and therapeutic management of disease to the biliary system when standard endoscopic retrograde cholangiopancreatography (examination of the bile ducts) is unsuccessful or inappropriate. The system enables users to visually examine the bile ducts, take biopsy samples, and treat large bile duct stones using either electrohydraulic or laser lithotripsy to break them up.

Gynecology and Obstetrics

Episcissors-60 for Guided Mediolateral Episiotomy

NICE

The Episcissors-60 are surgical scissors used for episiotomy, a procedure performed during labour to enable the baby to pass through the vagina more easily. The Episcissors-60 are designed to guide a diagonal cut from the vagina toward the right side and the back of the body, which reduces the risk of obstetric anal sphincter injuries. Currently, episiotomies are done without any guide for the cutting angle and must be visually estimated.

Sonata System for the Removal of Uterine Fibroids

NIHR-HSRIC

The Sonata System is designed to treat symptomatic uterine fibroids in a hospital outpatient setting. The Sonata device is inserted through the cervix, without incision, making it a less invasive treatment option than standard therapy. It has an ultrasound probe at the tip to identify the borders of the fibroid and a radiofrequency ablation component that heats to 105°C to destroy the fibroid.

Xpert GBS Test for the Intrapartum Detection of Group B Streptococcus

NICE

This test uses rectal and vaginal swabs to detect group B *Streptococcus* bacteria in pregnant women. It is based on a rapid polymerase chain reaction test, with results available in 50 minutes or less. Rapid and accurate screening for bacterial infection could reduce the use of prophylactic antibiotics. Several studies report good diagnostic sensitivity for Xpert GBS.

Infectious Disease and Infection Control

Antimicrobial Copper Surfaces for the Reduction of Health Care–Associated Infections in Intensive Care Settings

CADTH

Copper is a natural antimicrobial material that acts against a broad spectrum of bacteria. Studies are examining if using copper surfaces in intensive care settings – for example, on door handles, bed rails, and IV poles – will reduce infection rates. The antimicrobial properties of copper remain in effect for the product’s lifetime and do not seem to pose harms to patients.

IRIDICA System for Detection and Identification of Microbial Pathogens in Critically-Ill Patients

NIHR-HSRIC

This is a new, faster method to identify microbial pathogens causing infections in critically ill patients. The technique analyzes a sample with a combination of polymerase chain reaction and mass spectrometry, which enables results to be available in less than six hours. The technology can identify bacterial, mould, yeast, and viral species.

The OraQuick HCV Point-of-Care Test for Rapid Detection of Hepatitis C Virus Antibodies

NICE

The OraQuick HCV test was developed to diagnose infections of hepatitis C virus. It detects hepatitis C antibodies in a sample of oral fluid, fingerstick blood, venous blood, plasma, or serum. No specialist equipment is needed, which means the test can be performed in any setting, and results are available in 20 to 40 minutes. However, a positive result will still require a follow-up test to confirm active infection.

Potential High-Impact Interventions Report – Priority Area 09: Infectious Disease Including HIV/AIDS

AHRQ

Emerging infectious disease interventions identified as potentially having a moderately high impact on health care or the health care system include the Xpert MTB/RIF Test for *Mycobacterium tuberculosis* – the bacteria that causes tuberculosis. This is a polymerase chain reaction–based test that simultaneously detects *M. tuberculosis* complex species and determines if the identified bacterium is susceptible to rifampicin, an antibiotic used as first-line therapy. By providing results in two hours compared with the weeks required using standard testing methods, this test could enable rapid initiation of treatment.

Kidney and Urology

The BCM – Body Composition Monitor for Managing Fluid in People Having Dialysis

NICE

This device measures the fluid status in patients needing dialysis for chronic kidney disease. The results can be used to calculate the amount of fluid to be removed during dialysis. Electrodes are attached to one hand and foot, and a monitor measures impedance (how easily the electric current flows). The process is painless and takes 5 to 10 minutes.

NephroCheck: A Bedside Biomarker Test to Identify Patients at Risk for Acute Kidney Injury

CADTH

NephroCheck is a urine test that can be used at the point of care to identify if a critically ill patient is at risk for acute kidney injury – a condition where the kidneys are unable to filter wastes and excess fluid from the blood, control blood pressure, or regulate salt balance in the body. The test works by detecting two protein biomarkers that are precursors to kidney injury, and it provides faster results than the standard serum creatinine test.

Mental Health

[P1vital eHealth Emotional Test Battery \(eH-ETB\) for Early Detection of Treatment Effect in Depression](#)

NIHR-HSRIC

This online test aims to objectively assess how well patients are responding to antidepressant medication. It gauges response after one week of initiating medication, enabling adjustments to be made to the dose. The test works by displaying images of facial expressions and measuring any negative bias users have in interpreting the emotions.

[Potential High-Impact Interventions Report – Priority Area 14: Substance Abuse](#)

AHRQ

Emerging mental health interventions identified as potentially having a high impact on health care or the health care system include interactive text messaging programs for the prevention of hazardous alcohol use. Clinical trials show that text messaging programs are well accepted among patients and demonstrate self-reported reductions in hazardous alcohol use. To date, programs and studies have taken place in Scotland, Switzerland, the US, Australia, and the United Kingdom.

Nervous System and Neurology

[Liftware: Self-Stabilizing Eating Utensils for Individuals with Hand Tremor](#)

CADTH

Liftware is a spoon and fork utensil incorporating a computerized handle to sense the direction of hand tremor and move the utensil attachment in the opposite direction. This self-stabilizing function compensates for hand tremor from conditions such as Parkinson disease.

Orthopedics

[Barricaid Prosthesis for Partial Annulus Replacement](#)

HealthPACT

The Barricaid prosthesis is a small piece of flexible polymer mesh designed for use during spinal surgery to fill the space created by the removal of a herniated disc. Implanting the prosthesis adds only an additional 5 to 15 minutes to surgery and has the potential to reduce the number of repeat surgeries due to reherniation.

[InSpace Biodegradable Subacromial Spacer for Rotator Cuff Tears](#)

HealthPACT

The InSpace device has been developed to decrease the pain associated with rotator cuff injury. Implanted between the top of the shoulder and the top of the upper arm using a minimally invasive procedure, it acts as a cushion to reduce the friction between the two bones. This may allow the patient to move normally, thereby facilitating recovery and possibly eliminating or deferring the need for more extensive shoulder surgery.

LARS for Reconstructing Damaged Intra-articular Cruciate Knee Ligaments

NICE

LARS is a synthetic scaffold designed to reconstruct damaged knee ligaments, as well as other soft tissues. It is a potential alternative to tissue grafting using tendons taken from another joint in the patient's body or from a donor — a procedure that has been associated with various adverse events.

The PediGuard for Placing Pedicle Screws in Spinal Surgery

NICE

The PediGuard is a device for drilling pilot holes for pedicle screws during spine fusion surgery. It is a battery-powered, single-use tool with an electromagnetic bipolar sensor in its tip to help guide the placement of the holes. This technology may result in a lower number of improperly positioned screws compared with the standard manual drilling method.

Pediatrics

Special Report: Chromosomal Microarray for the Genetic Evaluation of Patients With Global Developmental Delay, Intellectual Disability, and Autism Spectrum Disorder

BCBS-CCE

Chromosomal microarray is a new genetic test for diagnosing global developmental delay, intellectual disability, and autism spectrum disorder. It detects chromosomal imbalances — specifically copy number variants — and is a potential alternative to traditional chromosome testing, such as karyotyping.

CoSense End Tidal Carbon Monoxide Monitor for Neonatal Haemolytic Disease

NIHR-HSRIC

This monitor measures the level of carbon monoxide in a newborn's breath, which is an indication of hemolytic disease — rupturing of red blood cells. The monitor is portable, non-invasive, and it provides results within four minutes. The company claims that, compared with traditional blood tests, the monitor can identify hemolysis earlier and more accurately, enabling faster treatment.

REVIEW — New and Emerging Technologies for Autism

NIHR-HSRIC

A number of new and emerging treatments for autism have been identified, including repetitive transcranial magnetic stimulation, neurofeedback, and biofeedback to improve communication, attention, and anxiety; robot-assisted therapy tools to increase social and other skills; and programs to reduce the anxiety associated with medical visits.

Rehabilitation

Potential High-Impact Interventions Report – Priority Area 08: Functional Limitations and Disability

AHRQ

Emerging functional limitation–related interventions identified as potentially having a high impact on health care or the health care system include a screening tool for pediatric strabismus and amblyopia, a system that allows individuals with quadriplegia to control their wheelchairs with their tongue, a battery-powered exoskeleton to enable mobility in patients with paraplegia, and a computerized prosthetic arm to restore arm function after amputation.

ReWalk: Robotic Exoskeletons for Spinal Cord Injury

CADTH

ReWalk is a powered exoskeleton designed to allow adults with mobility impairment to stand, sit, walk, turn, and navigate stairs. It consists of metal braces to support each leg and part of the upper body, battery-powered bilateral hip and knee joint motors, a computerized control system, and a wireless remote control that is worn on the wrist.

Respiratory

Bronchial Thermoplasty for Treatment of Inadequately Controlled Severe Asthma

BCBS-CCE

Bronchial thermoplasty applies radiofrequency energy to reduce the mass of airway smooth muscle, which plays a central role in severe asthma. The procedure involves inserting a catheter into the target airways and heating the tissue using radiofrequency energy to 65°C for 10 seconds. The catheter is repositioned repeatedly to treat a contiguous area (40 to 60 activations). The procedure is repeated twice more within a six-week period.

BuddyWOTCH to Monitor COPD

NIHR-HSRIC

BuddyWOTCH is a smartwatch that can be worn at home by patients with chronic obstructive pulmonary disease (COPD) to record walking, blood oxygen levels, temperature, and heart rate. It works by detecting and warning patients of a COPD flare-up so that they can access treatments faster. Data recorded by the smartwatch can be transmitted to servers for integration into patient records and to enable remote monitoring by health professionals.

REVIEW – Diagnosis and Monitoring of Chronic Obstructive Pulmonary Disease

NIHR-HSRC

This report summarizes the evidence on technologies to diagnose and monitor COPD. COPD is a lifelong, progressive, and incurable disease of the airways that restricts daily life. The report includes 80 technologies, including telehealth, vital signs monitoring technologies, questionnaires, imaging modalities, biomarker tests, spirometry, and wearable sensors. Of these, 25 technologies are identified as the most promising, and are recommended for future translational and clinical research funding.

Endobronchial Valves for Patients With Advanced Heterogeneous Emphysema

HealthPACT

These devices consist of one-way valves inserted into a segment of the lung of a patient with emphysema. Endobronchial valves do not allow air to enter the airway but do allow air to exit, which causes the diseased portion of the lung to reduce in volume and allows healthier segments of the lung to expand. Endobronchial valves are already used to control prolonged air leaks of the lung, but their use in emphysema would be a new indication.

Hand-Held Fourier Transform Infrared (FTIR) Spectroscopy to Diagnose and Monitor COPD

NIHR-HSRC

This hand-held device analyzes the composition of sputum from patients with COPD to diagnose and monitor the disease at the point of care. According to the developer, significant differences are observed in the sputum from patients with stable disease compared with those with disease exacerbations or other complications. Earlier detection can lead to faster treatment and reduced hospitalization.

Update: PleurX Catheter System for the Treatment of Malignant Pleural Effusion

HealthPACT

PleurX is an indwelling catheter system developed to drain fluid that collects in the membrane space lining the outside of the lungs as a result of cancer (a condition called malignant pleural effusion). The PleurX catheter is positioned using ultrasound or X-ray guidance while the patient is under conscious sedation. The PleurX system also includes a vacuum bottle and drainage bottles.

PneuX for Preventing Ventilator-Associated Pneumonia in Intensive Care

NICE

The PneuX tube system is designed to prevent ventilator-associated pneumonia by minimizing the risk of pulmonary aspiration and micro-aspiration in patients receiving ventilation for 24 hours or more. The system consists of an endotracheal or tracheostomy tube, the PneuX tracheal seal monitor, and an extension tube. Each tube has multiple access points for subglottic drainage, and a low-volume, low-pressure cuff made from soft silicone.

Potential High-Impact Interventions Report – Priority Area 13: Pulmonary Disease, Including Asthma

AHRQ

Emerging pulmonary disease interventions identified as potentially having a moderately high impact on health care or the health care system include portable warm blood perfusion systems for normothermic lung transplantation, with two systems in particular: the Organ Care System (OCS Lung), and the XVIVO Perfusion System (XPS). Both devices are used for storing donor lungs before transplant. Clinicians are able to evaluate the functioning of the lungs inside these systems as the systems oxygenate and flush the lungs with solutions to prepare them for transplant.

The RePneu Coil System and Other Bronchoscopic Lung Volume Reduction Treatments For Advanced Emphysema

HealthPACT

The RePneu Coil System consists of small nickel-titanium coils that are inserted into the lungs of patients with emphysema. The coils act as springs, gathering and compressing diseased lung tissue, tethering small airways open to prevent their collapse during exhalation, and restoring elastic recoil in healthier regions of the lung.

The TaperGuard Evac Oral Tracheal Tube for Mechanically Ventilated Intensive Care Patients at Risk of Ventilator-Associated Pneumonia

NICE

The TaperGuard Evac oral tracheal tube was developed for airway management in critically ill patients who need mechanical ventilation. It is intended for use in place of conventional tracheal tubes, featuring an inflatable taper-shaped cuff to prevent micro-aspiration (the drawing of secretions into the lungs) and a separate evacuation tube through which secretions are removed.

Upper Airway Stimulation for Moderate-to-Severe Sleep Apnea

HealthPACT

An upper airway stimulation system for sleep apnea works by stimulating the hypoglossal nerves, causing the tongue muscles to contract and maintain an open airway during sleep. The system includes a neurostimulator that is surgically implanted close to the nerves of the tongue muscle and an external power source. There is a new generation of the system in development that uses an ultra-small neurostimulator and a small adhesive patch under the chin to power the implant.

Other

The Arrow OnControl Powered Bone Marrow Biopsy System for Bone Marrow Aspiration and Biopsy

NICE

OnControl is a system for extracting bone marrow samples to use when testing for cancer and other conditions that affect the bone marrow. Its battery-powered drill provides easier access to bone marrow compared with manual needle aspiration and biopsy techniques, and therefore it might provide better biopsy specimens and be less painful for patients.

Cell Salvage as a Patient Blood Management Strategy

HealthPACT

Cell salvage is the collecting of a patient's blood during surgery where blood loss is expected to be high, to be used afterwards to replace the blood lost. It is intended to reduce the need for transfusions using donor blood, which carries the risk of infection and suppression of the immune system.

Fall-Safe Assist Device for the Prevention and Detection of Falls

NIHR-HSRIC

Fall-Safe Assist is a wearable, falls detection device that is embedded within the Fall-Safe hip protector – a pair of pads worn over the hips. If anomalies in the patient's gait pattern are detected or if the patient is immobile after falling, Fall-Safe Assist sends an alarm message via Bluetooth wireless technology to a mobile phone and subsequently to emergency services. Data on the fall can be captured and analyzed to predict and prevent falls and hip fractures in the future.

ivWatch Model 400 Patient Monitor for Continuous Monitoring of IV Sites

NIHR-HSRIC

This monitor helps doctors and nurses determine if an intravenous drip is leaking into the surrounding tissue (called IV infiltration). If this happens, it can cause pain, infection, tissue damage, and may lead to limb amputation. The ivWatch system works by illuminating tissue near the IV site with visible and near infrared light; the light returning from the tissue is processed by a patient monitor using an algorithm. If infiltration is detected, the monitor provides visual and audible notification.

REVIEW – New and Emerging Mobile Health Interventions that Promote Behavioural Change

NIHR-HSRIC

This report summarizes the evidence on mobile health interventions that promote behaviour change. The review includes a total of 94 interventions, with the most frequently identified type being trackers (both wearable and non-wearable). Wearable trackers such as bands, watches, and clothing are the most prevalent. The next most common interventions are information, training, and coaching interventions, and mobile platform-based interventions that enable both users and health care professionals to co-manage the user's health.

Potential High-Impact Interventions Report: Cross-Cutting Interventions and Programs

AHRQ

Emerging interventions identified as potentially having a high impact on health care or the health care system across several topic areas include a system for monitoring the medication adherence of patients with chronic conditions requiring long-term drug therapy; a 3-D printer that generates models of a patient's anatomy to help surgeons plan or practice techniques before surgery; and a tool for preparing patients for abdominal surgery that assesses their risk of complications and aims to improve their overall health through exercise, breathing, nutrition, and relaxation training.

Stem Cell Therapy for Non-haematological (Autoimmune) Indications

HealthPACT

Stem cell transplantation, an established treatment for blood and immune system disorders, has recently emerged as a potential therapeutic option for patients with autoimmune disorders such as multiple sclerosis, systemic sclerosis, and systemic lupus erythematosus.

Visensia for Early Detection of Deteriorating Vital Signs in Adults in Hospital

NICE

Visensia is a software program that tracks vital sign data collected by a patient's bedside monitor and alerts health care staff as soon as deterioration is detected. It continually analyzes heart rate, blood pressure, temperature, oxygen saturations, and respiration rate, triggering an alarm when changes indicate an increased risk of cardiac or respiratory arrest.

Trends and Forecasts

2015 Top 10 Hospital C-Suite Watch List

ECRI

The top technologies anticipated to have an impact on health care in 2015 and beyond include disinfection robots that emit ultraviolet light or hydrogen peroxide vapour to help fight hospital-acquired infections, 3-D printers for medical applications, middleware (software that enables communication between two different systems) for alarm management and notification, post-discharge clinics to improve post-hospital care and prevent readmissions, Google Glass for health care applications (e.g., guiding surgery), anti-obesity devices (Maestro System for VBLOC, ReShape Duo, and EndoBarrier), cancer treatment facilities for adolescents and young adults, fecal microbiota transplantation therapy, artificial pancreas systems, and telehealth.

Top 10 Medical Innovations for 2015

Cleveland Clinic Innovations

Medical technologies that were anticipated to have an impact on health care in 2015 include a mobile stroke treatment unit that brings emergency equipment directly to patients, a blood testing technology that uses a drop instead of a vial of blood, and a breast cancer treatment that delivers radiation directly to the lumpectomy cavity in one dose rather than to the entire breast in several doses.

Top 10 New & Emerging Health Technology Watch List: 2015

CNESH

New and emerging technologies identified in 2015 as being some of the most promising include underwear that delivers electrical stimulation to help prevent bedsores, a new imaging system that may improve breast cancer detection in women with dense breasts, a hand-held scanner for detecting strabismus and amblyopia in children, and a machine that transmits data from an implanted heart device to a health care provider to allow for remote monitoring.

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