2019 HORIZON SCAN ROUNDUP

A Compilation of New and Emerging Health Technologies From Around the World
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2019 Horizon Scan Roundup

CADTH’s Horizon Scanning Service identifies and monitors new and emerging health technologies likely to have a significant impact on health care in Canada. The service scans and monitors health information sources to identify potentially important health technologies not yet widely used in the Canadian health care system. Summaries of current information about the use, effectiveness, cost, and implementation of these technologies are published regularly in CADTH bulletins and newsletters.

Part of CADTH’s horizon scanning process involves monitoring new and emerging technologies identified by other international horizon scanning agencies and services. The resulting “roundup” is a compilation of titles published in 2019 by CADTH and other agencies. These titles have been organized by medical specialty. The focus of this roundup is on non-drug medical technologies including devices, diagnostic imaging, laboratory tests, biomarkers, programs, and procedures. We have expanded the 2019 roundup to include relevant publications in languages other than English if an English language summary is available. These publications are flagged as an English summary after the title. For more information about the organizations whose work is included in this report, please visit their websites listed on page 5.

Horizon scanning reports last reviewed date: January 17, 2020.
Agencies Included in This Roundup

AHA
American Hospital Association
Center for Health Innovation
(US)

ASCO
American Society of Clinical Oncology
(US)

AIHTA
Austrian Institute for Health Technology Assessment (formerly the Ludwig Boltzmann Institute für Health Technology Assessment – LBI-HTA)
(Austria)

CADTH
Horizon Scanning
(Canada)

CAMTÖ
Center for Assessment of Medical Technology in Örebro
(Sweden)

Cleveland Clinic Innovations
(US)

EUnetHTA
EUnetHTA-European Network for Health Technology Assessment
(Europe)

HTAi
HTAi–Health Technology Assessment International
(International)

HTAP
Washington State Health Care Authority Health Technology Assessment Program
(US)

HTW
Health Technology Wales
(UK)

INESSS
Institut national d'excellence en santé et en services sociaux
(Canada)

IRCCS
Istituto in Tecnologie Avanzate e Modelli Assistenziali in Oncologia
(Italy)

ISPOR
International Society for Pharmacoeconomics and Outcomes Research
(International)

KCE
Belgian Health Care Knowledge Centre
(Belgium)

Medgadget
The Medical Futurist

NCB
Nuffield Council on Bioethics
(UK)

NHS
National Health Service Health Education England
(UK)

NICE
National Institute for Health and Care Excellence MedTech Innovation Briefings
(UK)

NIPH
Norwegian Institute of Public Health
(Norway)

OHQ
Ontario Health Quality (formerly Health Quality Ontario)
(Canada)

OSTEBA
Basque Office for Health Technology Assessment
(Spain)

PCORI
Patient-Centered Outcomes Research Institute
(US)

PHG Foundation
(UK)

RCS
Royal College of Surgeons
(UK)

SHTG
Scottish Health Technologies Group
(UK)

TAU
McGill University Health Centre Technology Assessment Unit
(Canada)

TIME Magazine
(US)

WorkSafeBC
(Canada)
Cancer, Imaging, and Radiology

**ADXBLADDER for Detecting Bladder Cancer**

**NICE**

ADXBLADDER is a diagnostic urine test used with cystoscopy to detect bladder cancer. A novel biomarker, minichromosome maintenance complex component 5 (MCM5), is used to detect the presence of cancer. The test can also be used to monitor cancer recurrence within the urogenital tract after the surgical removal of bladder tumours.

**Airglove for Supporting Vasodilation in Patients Where Cannulation is Difficult**

**SHTG**

Airglove is an arm-warming device used to facilitate vasodilation for the delivery of systemic anti-cancer therapies in patients whose veins are hard to access. The device consists of a heating unit that forces warm air into a glove that surrounds the patient’s arm. The heat warms the patient’s blood and dilates the veins to facilitate easier cannula insertion.

**Axumin for Functional Imaging of Prostate Cancer Recurrence**

**NICE**

Axumin is a radiotracer that is delivered by intravenous injection for the detection of recurrent prostate cancer. It is a molecular imaging agent used with positron emission tomography (PET) imaging. Its short uptake period of three to five minutes allows PET scans to be conducted more quickly than other types of radiotracers that can take up to an hour for optimal uptake.

**Clinical Cancer Advances 2019**

**ASCO**

This annual review reports the American Society of Clinical Oncology's selected advances in cancer care. Some of the 2019 review highlights include progress in treating rare cancers, immunotherapy, molecular diagnostics, and microbiome research.

**Fluorine- or Gallium- Prostate-Specific Membrane Antigen (PSMA) Positron Emission Tomography (PET) Radiotracers in the Investigation of Recurrent Prostate Cancer**

**HTW**

$^{18}F$-Choline and $^{68}$Ga-PSMA ligand are radiotracers that are delivered by intravenous injection and used for the staging and diagnosis of metastatic or recurrent prostate cancer. These imaging agents are used together with PET.

**Hadrontherapy for Cancer. An Overview of HTA Reports and Ongoing Studies**

**IRCCS**

Hadron therapy is a type of radiation therapy that uses charged particles to ablate tumour cells. Proton beam therapy and carbon ion radiation therapy are types of hadron therapy. Hadron therapy is intended to reduce toxicity compared to conventional radiation therapy. (See also the reports on proton beam therapy.)
Irreversible Electroporation for the Treatment of Liver and Pancreatic Cancer
EUnetHTA
Irreversible electroporation is an ablative technology intended for patients with soft tissue cancers of the liver or pancreas. The tool consists of up to four 19-gauge electrodes positioned into or adjacent to the target tissue. The electrodes deliver short high-voltage electrical impulses intended to destroy cancer cells.

An Overview of Liquid Biopsy for Screening and Early Detection of Cancer
CADTH
Liquid biopsies are tests that may be used for the screening and earlier diagnosis of cancer. They use blood or urine samples to detect the presence of cancer cells. Liquid biopsies are minimally invasive and may represent an alternative to surgical biopsies. They can be used for the diagnosis and monitoring of disease, as well as for measuring treatment effectiveness and, potentially, for population cancer screening.

PD-L1 Positivity Tested by McAb SP263 to Guide Immune Checkpoint Therapy in Non-Small-Cell Lung Cancer (English Summary)
CAMTÖ
Programmed death-ligand 1 (PD-L1) expression is a predictive biomarker test used to help identify individuals with cancer who may benefit from immunotherapy. Those who are unlikely to benefit can avoid the risks involved in undergoing immunotherapy treatment. Although PD-L1 testing is used in treatment planning for people with various types of cancer, this report focuses on its use in non–small cell lung cancer.

Prosigna Gene Signature to Assess Expected Benefit From Chemotherapy in Breast Cancer. Assessment of Manufacturer’s Submission
NIPH
Prosigna is a molecular profiling panel that is intended to assess the risk of cancer recurrence after breast cancer surgery. The risk stratification score can identify people at low, intermediate, and high risk of cancer recurrence within ten years. Prosigna would be used in addition to current risk assessment techniques. Those at low risk of recurrence may decide to forgo subsequent chemotherapy and avoid the associated adverse events.

Proton Beam Therapy
Proton beam therapy is an advanced type of radiotherapy that uses beams of high-energy protons to destroy tumours. It is an alternative to photon therapy for the treatment of various types of cancers in both adults and children. Its theoretical advantage lies in its ability to deliver more precisely targeted radiation compared to conventional radiation therapy, minimizing the radiation dose to patients and the damage to surrounding healthy tissue.

Several agencies assessed the evidence on proton beam therapy in 2019, indicating that this technology, though not new, is still emerging. These reports are listed here without additional summaries. (See also the report on hadron therapy, a form of proton beam therapy, in this issue.)
Offering Proton Beam Therapy for Selected Types of Cancer in Children and Adults at the MUHC: a Budget Impact Analysis

TAU

Proton Beam Therapy in Adults
KCE

Proton Beam Therapy – Re-Review
HTAP

Regional Hyperthermia for High-Risk Soft Tissue Sarcoma Treatment
EUnetHTA

Regional hyperthermia uses low heat, usually between 40°C and 45°C, to treat cancer. The heat may result in tumour regression in high-risk soft tissue sarcomas. Regional hyperthermia is used in addition to other cancer therapies, such as radiation therapy, chemotherapy, and surgery.

Robot-Assisted Thoracic Surgery
HTW

Robot-assisted thoracic surgery is a minimally invasive surgery that is conducted through one or more small incisions. The robotic system includes a remote robotic device operated by a surgeon and a camera that provides magnification of the surgical field. The surgeon is stationed at a console beside the patient in an operating room. Robot-assisted thoracic surgery may be an alternative to open or laparoscopic surgery and is intended to improve surgeon dexterity and precision.

superDimension Navigation System to Help Diagnostic Sampling of Peripheral Lung Lesions
NICE

The superDimension is a navigational tool used by a pulmonologist or thoracic surgeon to guide bronchoscopic procedures, such as biopsies of lung tissue. The software in the system, together with computed tomography, or CT, provides a 3-D image of the airways, which may allow for better identification and sampling of more distant parts of the lungs. It may be a safer alternative to transthoracic needle aspiration or surgical biopsy for people at high risk for complications during invasive procedures, as it does not involve puncturing the pleura of the lungs.

Use of Linear Accelerators With On-Board Magnetic Resonance Imaging (MRI) for Real-Time MRI-Guided Radiation Therapy Treatments (English Summary)
INESSS

MRI-guided radiotherapy is a new imaging-guided approach to radiotherapy treatment. The most recent innovation in MRI-guided radiotherapy is the MR-linac. This hybrid device includes a linear accelerator that delivers the radiotherapy and a MRI that provides real-time images to guide the delivery of radiation to cancerous cells.
Cardiovascular

Bioresorbable Stents for the Treatment of Cardiovascular Indications (Coronary Artery Disease)
EUneHTA

Bioabsorbable stents are used in cardiac revascularization procedures for people with coronary artery disease. The stents are intended to prevent subsequent thrombosis or restenosis known to be late complications associated with these procedures. Several commercial bioresorbable stents are available, all with different characteristics. Like bare metal stents, they may or may not include drug-eluting agents to help prevent restenosis.

CADScor System for Ruling Out Coronary Artery Disease in People With Symptoms of Stable Coronary Artery Disease
NICE

CADScor is a scoring system intended to be used in the initial assessment of adults with symptoms that indicate possible coronary artery disease (CAD). The CADScor device uses acoustics to detect heart sounds and combines them with other factors (age, gender, blood pressure) into a low or medium to high probability risk score. Individuals with a medium to high risk score need further diagnostic tests, such as computed tomography — CT, coronary angiography, whereas those with a low risk may need no further testing. Potentially, the test could reduce the number of people needing CT scans, allowing them to avoid exposure to ionizing radiation and further testing, as well as reducing associated health care costs.

DuraGraft for Preserving Vascular Grafts
NICE

DuraGraft is a preservative solution used to store harvested blood vessels to be used in coronary artery bypass graft surgery or peripheral artery procedures. Also called an endothelial damage inhibitor, the pH-balanced solution contains antioxidants intended to minimize damage to the vascular graft. This may reduce post-surgical complications, such as intimal hyperplasia. DuraGraft is an alternative to storing harvested blood vessels in saline or blood solutions.

Hand-Held Ultrasound Devices for Cardiac Assessment and Diagnosis of Heart Failure, in the Community or Primary Care Setting
HTW

The use of hand-held ultrasound devices may allow for point-of-care screening for heart failure in symptomatic patients in primary or community care settings. Potentially, these pocket-sized devices could be used in lieu of referral to a diagnostic testing facility or hospital for an echocardiogram.
IQoro for Stroke-Related Dysphagia
NICE

The IQoro for stroke-related dysphagia is an oral rehabilitation tool intended to strengthen the muscles responsible for swallowing (facial, mouth, throat, esophagus, diaphragm) in people who have had a stroke. The mouthpiece is gripped by the teeth and lips while an attached handle is pulled outwards by hand. The exercise program is intended to be repeated three times per day, ideally before meals. This therapy would be used in addition to standard therapy with speech and language training, but potentially it could reduce the need for standard therapy. It may also reduce the need for enteral nutrition through a feeding tube.

Kendall DL for ECG Monitoring in People Having Cardiac Surgery
NICE

This technology is a single patient use electrocardiogram (ECG) system for monitoring patients undergoing heart surgery. Three and five lead versions of the device are available. The single patient use aspect may reduce the risk of surgical site infections and possibly the risk of equipment failure with reused ECG cables and leads. The Kendall DL is intended to replace existing, reusable ECG leads.

Left Atrial Appendage Occlusion (LAAO) in Patients With Atrial Fibrillation Who Have Contraindications to Oral Anticoagulation
SHTG

People with atrial fibrillation are at increased risk of ischemic stroke. Standard care usually involves taking oral anticoagulant drugs (blood thinners) to prevent blood clots. Left atrial appendage occlusion is a preventive procedure that uses a device implanted via a catheter to block the left atrial appendage of the heart where blood clots commonly form. This may offer an alternative intervention for some people with atrial fibrillation who cannot take anticoagulants.

MitraClip Transcatheter Mitral Valve Repair

Two agencies looked at the MitraClip in 2019. In mitral valve regurgitation, the mitral valve does not function properly, resulting in abnormal, backwards blood flow in the heart. Untreated, this condition can lead to heart failure and the inability to perform activities of daily life. The MitraClip is placed in the heart via a catheter inserted in the femoral artery. It holds segments of the valve together to reduce regurgitation. MitraClip is an alternative to open heart surgery for mitral valve repair for people who cannot undergo open heart surgery.

MitraClip Transcatheter Mitral Valve Repair in Patients With Moderate-to-Severe or Severe Mitral Regurgitation Who Are Not Eligible for Surgery
SHTG

Treatment of Mitral Regurgitation by a Percutaneous Device With Clip (TMVRc) (English Summary)
INESSS
The OPTIMIZER Smart System for Managing Heart Failure
NICE
The OPTIMIZER is a programmable cardiac stimulation device that provides individualized cardiac contractility modulation therapy. This is intended to treat heart failure in patients for whom optimal drug therapies have not adequately managed their symptoms, and in those who cannot receive cardiac resynchronization therapy. The system includes a pulse generator implanted into the chest and connected to pacemaker leads passed through veins into the right ventricle to sense and control the contraction of the heart muscle. It is intended to be used in addition to drug therapy.

Optowire for Measuring Fractional Flow Reserve
NICE
The Optowire device is a disposable guide wire with a pressure sensor that is used to measure fractional flow reserve during angiography for the assessment of heart disease. The wire is inserted through a catheter and used to measure pressure before and after a narrowing (stenosis) of the artery, which provides an indication of the severity of the blockage. This may allow for more informed decisions regarding the use of coronary artery stents.

PIUR tUS for Abdominal Aortic Aneurysm Surveillance and Endovascular Aneurysm Repair Endoleak Detection
NICE
This technology uses 3-D tomographic ultrasound imaging to monitor patients with abdominal aortic aneurysm (for surveillance purposes) and those who have undergone endovascular aneurysm repair (to detect leaks). Imaging results are immediately available and the system enables imaging of the entire blood vessel. There is no exposure to ionizing radiation or contrast media, thus reducing the risk of adverse events. PIUR tUS is used for surveillance, but it could potentially replace the need for computed tomography or magnetic resonance imaging diagnostic scans.

Prophylactic or Therapeutic Use of Endoanchoring Systems in Endovascular Aortic Aneurysm Repair (EVAR/TEVAR)
EUnetHTA
The Heli-FX EndoAnchor and Thoracic Endoanchor Systems consist of small, helical-shaped intravascular implants that anchor and seal endoprostheses (stent grafts) to the aorta in the repair of aortic aneurysms. This may help to prevent endoleaks or migration of the prosthesis, particularly in patients with complex anatomies or aneurysms that make positioning the graft for endovascular aortic aneurysm repair (EVAR) or thoracic endovascular aortic aneurysm repair (TEVAR) more difficult. The devices would be used in addition to standard procedures to secure the graft.
Transcatheter Aortic Valve Implantation (TAVI) for the Treatment of Patients With Severe Symptomatic Aortic Stenosis Who Are at Intermediate Surgical Risk
SHTG
Indications for the use of transcatheter aortic valve implantation (TAVI) to replace stenotic aortic valves are expanding, from patients with severe aortic stenosis who are at high risk for surgery to those at moderate risk. TAVI may be an alternative to surgical aortic valve replacement in both patient populations, but the risks for adverse events may differ.

Dermatology, Wounds, and Injuries

Accel-Heal for the Management of Non-Healing Venous Leg Ulcers
SHTG
Accel-Heal applies low-current, pulsed electrical stimulation to promote wound healing and to reduce swelling and pain from chronic venous leg ulcers. The disposable device consists of electrode pads and six single-use electrical energy units that each provide stimulation for 48 hours, with a total treatment time of 12 days. It is intended to be used in addition to standard wound care practices.

InterDry for Intertrigo
NICE
Intertrigo is an inflammatory skin rash that often develops in skin folds due to moisture, bacteria, fungi, or friction. This may cause itching, odour, and discomfort. The InterDry device consists of a polyester fabric that removes moisture from the skin, a plastic coating to reduce friction, and silver within the fabric to act as an antibacterial (and possibly antifungal) agent. InterDry can be used for up to five days, but is removed for bathing and replaced with new fabric afterwards. It may be an alternative to treatments such as antifungal and corticosteroid creams that need frequent application — possibly reducing the burden of nursing care — or it may be used as a further treatment when first-line treatments have failed.

LQD Spray for Treating Acute and Chronic Wounds
NICE
The LQD is a spray-on, biopolymer wound dressing with a natural antimicrobial made of chitosan. It is intended for use on all types of wounds, including chronic leg ulcers. Chitosan may help to slow bleeding, reduce inflammation, and promote the formation of new tissue, and it is both an antimicrobial and an antifungal. Once applied, a film forms to protect the wound. LQD Spray may be used in addition to standard wound dressings, such as foam, film, or hydrofibre dressings; or it may replace the need for standard dressings. LQD may be used by patients at home, as well as by clinical staff, potentially reducing nursing staff time for wound care.
SEM Scanner for Pressure Ulcer Prevention
NICE
The SEM Scanner is a hand-held pressure sensor used to assess the integrity of skin tissue. It can provide early detection of deep tissue damage caused by pressure resulting in sub-epidermal moisture, or SEM. This damage may occur some time before a pressure ulcer is visible on the skin. Earlier detection may allow preventive measures to be implemented sooner, possibly reducing the risk of pressure ulcer formation and the severity of tissue damage, improving patient outcomes, and reducing health care costs associated with treating pressure ulcers.

The V.A.C. Veraflo Therapy System for Infected Wounds
NICE
Negative pressure wound therapy, automated wound cleansing, and topical wound healing dressing foam make up the elements of the V.A.C. Veraflo Therapy system. The treatment is used in the inpatient setting and is intended for people with infected or chronic (non-healing) wounds. It may be used as an alternative to, or in addition to standard wound care. Potentially, the system could reduce the risk of wound infections, improve wound healing, and reduce hospital length-of-stay.

Emergency Care
PulmoVista 500 for Monitoring Ventilation in Critical Care
NICE
PulmoVista 500 is a non-invasive, imaging device that provides continuous, bedside monitoring of lung ventilation in patients in intensive care who are receiving intubation and ventilation. The system uses electrical impedance tomography and is intended to be used in addition to standard care.

Endocrine, Nutrition, and Metabolic
Continuous Glucose Monitoring in Pregnancy
HTW
Pregnant people with type 1 diabetes are at increased risk for complications such as miscarriage, pre-eclampsia, and preterm labour. Optimal blood glucose control may minimize these risks. Continuous glucose monitors include an external, wearable sensor that monitors glucose levels throughout the day and night, allowing treatment to be adjusted as needed. This may reduce the risk of complications, resulting in the need for neonatal intensive care — consequently, it may also reduce the associated health care costs.
Flash Glucose Monitoring System for People With Type 1 or Type 2 Diabetes

OHQ

Flash glucose monitoring is an alternative to the self-monitoring of glucose levels with finger prick blood testing several times a day. Flash glucose monitoring is intended for people with type 1 diabetes, or those with type 2 diabetes who need insulin therapy. The technology uses a small sensor inserted under the skin in the upper arm and a small touchscreen reader that stores the data. The sensor is replaced every 14 days. Flash glucose monitoring may allow better control of blood glucose levels, resulting in fewer adverse events, such as hypoglycemia.

Eye and Vision

The Argus II Retinal Implant (English Summary)

INESSS

The Argus II retinal implant is used to restore some vision in people with retinitis pigmentosa, a rare genetic condition that destroys the light-sensitive cells of the retina, eventually leading to blindness. The system includes a surgically implanted retinal prosthesis and glasses with a camera and video processing unit to capture data and transmit visual information (patterns of light) to the brain. A follow-up rehabilitation program is needed to learn how to use the system.

Gastroenterology and Liver

Danis Stent for Acute Oesophageal Variceal Bleeds

NICE

The Danis stent is a Nitinol (nickel titanium), self-expanding stent used to temporarily apply compression and stop bleeding in the esophagus. This type of bleeding most commonly occurs in people with portal hypertension due to liver disease, and it can be life-threatening. A balloon-type delivery device allows the stent to be inserted without imaging or endoscopic guidance. An Ella Extractor device is used to remove the stent; the removal procedure does require imaging or endoscopic guidance. The stent may reduce the time to control bleeding, avoid the need for intubation, and reduce the risk for aspiration pneumonia while the patient waits for definitive treatment. Potentially, the Danis stent could replace current treatment with balloon tamponade.

eXroid for Internal Haemorrhoids

NICE

The eXroid device applies electrotherapy to the blood vessels to reduce the size of internal hemorrhoids. This may be an alternative to current treatments, such as topical ointments, rubber band ligation, sclerotherapy, diathermy, or hemorrhoidectomy for some patients with hemorrhoids.
IQoro for Hiatus Hernia
NICE
IQoro is an oral device used together with a three-to-six month program of neuromuscular exercises to relieve gastroesophageal reflux and other symptoms caused by hiatus hernia. It aims to strengthen the muscles of the esophagus and diaphragm. The treatment may be an alternative to drug therapies with proton pump inhibitors, or to fundoplication surgery.

LiMAx System for Assessing the Functional Capacity of the Liver
NICE
This technology is a point-of-care breath test to predict post-operative liver function in patients who will be undergoing liver surgery or transplantation. The test includes an injectable drug ($^{13}$C-methacetin) and a LiMAx FLIP device and breathing mask. This may allow better patient management through more individualized treatment planning and better assessment of patients at risk of serious complications. It may also improve the assessment of donor organs for transplant.

LiverMultiScan for Liver Disease
NICE
LiverMultiScan is imaging software used with magnetic resonance imaging (MRI) to diagnose and assess liver disease. The software adjusts the MRI image for the presence of iron. The technology may be an alternative to invasive liver biopsy or to non-invasive transient elastography ultrasound for measuring liver fibrosis in conditions such as cirrhosis, hepatitis, cancer, and non-alcoholic fatty liver disease.

Multiplex Polymerase Chain Reaction Gastrointestinal Pathogen Panels for People With Suspected Gastroenteritis
SHTG
Multiplex polymerase chain reaction (PCR) gastrointestinal pathogen panels, such as Luminex xTAG and Biofire FilmArray, may be alternatives to multiple conventional tests (enzyme immunoassays and stool culture) for diagnosing infectious (e.g., norovirus) and non-infectious gastroenteritis. Multiplex PCR tests provide test results more quickly than conventional tests and some PCR panels can distinguish between viral, bacterial, and parasitic infections. Potentially, this could reduce the number of additional tests, enable more the appropriate use of antibiotics, and, if necessary, allow infection control measures to be implemented sooner.

Narrow Band Imaging for Barrett’s Oesophagus
NICE
Barrett esophagus is a pre-cancerous condition that can lead to esophageal cancer. Narrow band imaging is used during endoscopy to identify abnormal tissue in people suspected of having Barrett esophagus, or for surveillance of people with the condition. This is used in addition to current endoscopic diagnostic techniques, such as white-light endoscopy, which produces a different type of image. The use of narrow band imaging may reduce the need for some biopsies.
Organ Retrieval Using In Situ Normothermic Regional Perfusion (NRP) for Liver Transplantation
SHTG

Normothermic regional perfusion may improve the number of donor livers available for transplant by increasing the length of time the donor organ remains viable. This may also reduce the risk of graft failure, and ensure better functioning of donor organs when circulatory death has occurred.

PredictSure-IBD for Inflammatory Bowel Disease Prognosis
NICE

PredictSure is a prognostic blood test that uses reverse transcriptase polymerase chain reaction analysis to help assess which patients with Crohn disease or ulcerative colitis may benefit from early treatment with biologic drug therapies (tumour necrosis factor inhibitors). Potentially, this more personalized management could increase rates of disease remission and reduce the number of disease flare-ups.

Genetic Testing and Gene Therapies

Cell-free DNA Prenatal Screening for Chromosomal Aneuploidies
HTAP

Cell-free DNA (cfDNA) is a non-invasive prenatal test for genetic disorders. This assessment compared the clinical and cost-effectiveness of universal cfDNA screening to conventional prenatal screening — such as with amniocentesis or chorionic villus sampling.

Landscape Review and Evidence Map of Gene Therapy, Part I: Adenovirus, Adeno-Associated Virus, and Clustered Regularly Interspaced Short Palindromic Repeats
PCORI

This report provides an overview of the field of gene therapies (including CAR T) and clustered regularly interspaced short palindromic repeats, or CRISPR, technologies. It includes therapies approved in the US, and those that are still in the development pipeline but are expected to be available within the next five years. Most of the technologies are for cancer treatments, but other conditions include Parkinson's disease, Duchenne muscular dystrophy, and hemophilia.

Somatic Genome Editing: An Overview
Somatic Genome Editing: Ethics and Regulation
Somatic Genome Editing: Promise and Practicalities
PHG Foundation

These are a series of briefings on somatic genome editing. This procedure involves altering DNA in somatic cells (non-reproductive cells) to cause non-heritable changes — unlike the editing of germline cells (sperm, eggs, or embryos) to produce heritable genetic changes. These briefings discuss potential ethical and regulatory issues, and clinical applications of somatic genome editing — a technology that appears to be closer to entering mainstream clinical practice than other types of genome editing.
Whole Exome Sequencing

HTAP

Whole exome sequencing uses next-generation sequencing to test for many different genetic disorders in patients whose symptoms do not indicate which particular disorder, combination of disorders, or variants may be involved. It may also alter clinical practice by identifying additional genetic conditions that may need clinical management, such as genetic mutations that increase the risk for developing certain cancers, necessitating more frequent screening.

Gynecology and Obstetrics

Alternative Scenarios for the Forecasting of the Midwifery Workforce: Horizon Scanning and Quantification Model

KCE

This report uses horizon scanning and other data to make predictions for three alternative scenarios regarding the future needs of midwifery in Belgium. The three scenarios are: pregnancy and maternity care centred on gynecologists practising either in a hospital setting or in outpatient care, midwife-led care at a hospital, care primarily organized through primary care practitioners (midwives and general practitioners) in outpatient care. Implementation of these different scenarios would increase the demand for midwifery care by 11.4%, 12.0%, and 17.4%, respectively, between 2016 and 2026.

AmnioSense for Unexplained Vaginal Wetness in Pregnancy

NICE

AmnioSense is a non-invasive test that uses a pH-dependent colour changing strip to identify amniotic fluid in pregnant women with unexplained vaginal wetness. The test is reported to be as effective as standard of care for detecting leaking amniotic fluid in pregnant women. The test can be used in both the home and clinical settings.

Cooled Monopolar Radiofrequency Therapy as Treatment for Vaginal Prolapse

WorkSafe BC

Vaginal prolapse is a common condition that occurs when the bladder, uterus, or bowel protrude into the vagina, causing problems such as urinary incontinence, constipation, or sexual dysfunction. The cryogen-cooled monopolar radiofrequency device simultaneously cools and protects the surface of the vaginal mucosal tissue, while heating the underlying structures. The procedure is intended to increase collagen and tighten vaginal tissue non-surgically, while the cooling may reduce pain during the treatment.
**Infectious Disease and Infection Control**

**Leukomed Sorbact for Preventing Surgical Site Infection**

NICE

Leukomed Sorbact (Essity or Sorbact surgical dressing) is intended to reduce the risk of surgical site infections as an alternative to standard post-surgical wound dressings. The technology uses hydrophobic dialkylcarbamoyl chloride in the layer of dressing that is in contact with the wound. This chemical binds to bacteria and fungi, removing them from the site of the incision and pulling them into the dressing so that they are then removed with dressing changes.

**MR-proADM Test for Use With Clinical Deterioration Scores in Cases of Suspected Infection**

NICE

Mid-regional proadrenomedullin (MR-proADM) is a biomarker that may be elevated in patients with severe infections (such as sepsis). It is intended to be used in addition to National Early Warning Score (NEWS and NEWS2) and other tests to triage patients suspected of having serious infections. Potentially, it could reduce the need for additional tests and procedures, and allow for a faster diagnosis and a more appropriate treatment.

**Peezy Midstream for Urine Collection**

NICE

The Peezy Midstream device automatically captures midstream urine samples without the patient needing to gauge and interrupt urine flow. This may ensure less contamination of urine samples, increase the accuracy of test results, and reduce the number of repeat tests needed. The Peezy Midstream is intended to replace standard urine collection devices.

**Prevena Incision Management System for Closed Surgical Incisions**

NICE

The Prevena is a single-use, topical device that provides continuous vacuum-assisted negative pressure wound closure for surgical wounds. It is intended to replace standard surgical incision care in people at particular risk for complications, such as those with diabetes or kidney failure. The Prevena may improve healing, require less frequent dressing changes, and reduce the risk of surgical site infections.

**Kidney and Urology**

**Endo-SPONGE for Colorectal Anastomotic Leakage**

NICE

The Endo-SPONGE combines a polyurethane foam sponge and vacuum therapy to provide continuous drainage for colorectal anastomotic leakage (leakage from a surgical join) after colorectal surgery. This is intended to reduce the risk of infection and speed wound healing.
StoneChecker for Kidney Stone Evaluation  
NICE  
The StoneChecker is a medical imaging software tool used to improve the assessment of features and texture of kidney stones on non-enhanced computed tomography scans. This may help to differentiate uric acid kidney stones from non-uric acid stones and aid in treatment planning.

UroShield for Preventing Catheter-Associated Urinary Tract Infections  
NICE  
UroShield uses acoustic wave technology to reduce bacterial adhesion on the surface of catheters. It is intended to lower the risk of catheter-related urinary tract infections in people with long-term, indwelling urinary catheters, and to reduce pain and discomfort associated with the use of these catheters.

Mental Health  
Alpha-Stim AID for Anxiety  
NICE  
Alpha-Stim AID is an electrotherapy device for treating symptoms of common mental health disorders. The device uses cranial electrotherapy stimulation, providing variable electrical microcurrent to the brain, which stimulates alpha wave electrical activity. The treatment is intended to be used as an alternative or an add-on to current treatment options for people with anxiety disorders.

The Digital Future of Mental Healthcare and Its Workforce: A Report on a Mental Health Stakeholder Engagement to Inform the Topol Review  
NHS  
This report highlights the potential for emerging technologies to improve our understanding of mental health and mental health care. Various categories of technologies are highlighted, including telemedicine, sensors and wearables, smartphones, digital therapies, social media, genotyping microarrays, neuroimaging, electronic health records, health care data collection, natural language processing, artificial intelligence, virtual reality, and augmented reality. The report also discusses the new skills and knowledge that health care professionals will need to provide mental health care in this changing environment.

Nervous System and Neurology  
Advancing Gene-Targeted Therapies for Central Nervous System Disorders  
National Academies of Sciences, Engineering, and Medicine  
This is a summary of a workshop on the current state of gene-targeted treatments (DNA and ribonucleic acid) for central nervous system disorders, such as Alzheimer disease and Parkinson disease, schizophrenia, and autism.
Autologous Haematopoietic Stem Cell Transplant for Patients With Highly Active Relapsing Remitting Multiple Sclerosis Not Responding to High Efficacy Disease Modifying Therapies

SHTG

For some patients with relapsing-remitting multiple sclerosis, standard disease-modifying therapies are not effective in slowing disease progression. Autologous hematopoietic stem cell transplantation is associated with substantial risks and uncertainties, but it may be considered for some patients with significant disease activity that has not responded to optimal drug treatments.

Efficacy and/or Effectiveness of Portable Neuromodulation Stimulator (PoNS) as Treatment for Traumatic Brain Injury (TBI)

WorkSafe BC

The Portable Neuromodulation Stimulator (PoNS) delivers electrical stimulation to the tongue to stimulate nerves in the brain that affect balance and walking. This rapid review examined the evidence on treatment with the Portable Neuromodulation Stimulator following mild-to-moderate traumatic brain injury, and on the use of PoNS in combination with physiotherapy.

Occipital Nerve Stimulation for Medically Refractory Chronic Cluster Headache

HTW

Cluster headaches are a rare type of chronic, debilitating headache. Patients are initially treated with various drug therapies, but for some patients the drugs do not provide relief. Occipital nerve stimulation uses implanted electrodes to stimulate the occipital nerves in the head via a device implanted in the chest. The mild electrical pulses are intended to relieve pain caused by cluster headaches.

Orthopedics

BST-CarGel as Treatment for Articular Cartilage Defect

WorkSafe BC

BST-CarGel is a treatment for damaged synovial cartilage found in the hip or knee joints. It is composed of the individual's stem cells, as well as other materials. The BST-CarGel solution is used as a stabilizer in the microfracturing procedure to repair the cartilage. The goal is to promote bleeding from the subchondral bone to create a blood clot at the lesion site, which then becomes fibrocartilage tissue. The size of the blood clot in the cartilage lesion is an indicator of the success of the procedure, as a more voluminous clot is better for repair. BST-CarGel is designed to stabilize the clot to promote repair.
Cervical Artificial Disc Replacement Versus Fusion for Cervical Degenerative Disc Disease: A Health Technology Assessment

Both anterior cervical discectomy and fusion and cervical artificial disc replacement (C-ADR) are used to remove a deteriorated disc, alleviate pain, and restore function in the neck. The potential benefit of C-ADR surgery is that it allows the individual to retain a greater range of motion and functionality.

Custom-Made or Customisable 3D Printed Implants and Cutting Guides Versus Non-3D Printed Standard Implants and Cutting Guides for Improving Outcome in Patients Undergoing Knee, Maxillofacial, or Cranial Surgery

This review assesses the use of 3-D print technology to produce custom-made or customizable 3-D printed implants and cutting guides versus non–3-D printed standard implants and cutting guides for improving outcomes in patients undergoing knee, maxillofacial, or cranial surgery. The possible benefit of 3-D printed devices is the ability to customize and personalize guides and implants, which may subsequently improve their safety, performance, and effectiveness.

HemaClear for Bloodless Surgical Field During Limb Surgery

HemaClear is a sterile, single-use elastic tourniquet. It can be used on a limb during surgery to stop blood flow to the surgical area. The HemaClear may be used as an alternative to pneumatic tourniquets in limb surgery.

Hip Surgery Procedures for Treatment of Femoracetabular Impingement Syndrome—Re-Review

Femoroacetabular impingement (FAI) is a condition in which extra bone grows along one or both of the bones that form the hip joint, giving the bones an irregular shape. This can cause friction when the hip joint moves. Over time, this friction can damage the joint, causing pain and limiting activity. This assessment looks at different interventions, both surgical and non-surgical, for the treatment of FAI.

Human Dermal Allograft for Massive Rotator Cuff Tears

The rotator cuff is a part of the shoulder made up of muscles and tendons that provide stability. Grafts for rotator cuff injuries are usually derived from animal tissue or artificially manufactured with synthetic materials; however, human dermal allograft uses tissue from cadaveric donors. Potentially, allografts could be safer and more effective than conventional techniques to repair rotator cuff tears.
Osseointegrated Prosthetic Implants for People With Lower-Limb Amputation

OHQ

There are many options for the kind of prosthesis that can be used to facilitate walking following a lower limb amputation. One is a socket prosthesis, which attaches the artificial limb to the remaining part of the leg; however, a socket prosthesis can cause friction, leading to discomfort and skin problems. An osseointegrated prosthetic implant involves surgically implanting a metal rod into the leg bone. The artificial leg is then connected to the rod. However, there may also be serious complications associated with these prosthetics, including leg, soft tissue, and bone infections.

Osteochondral Allograft Transplantation for the Knee (or Other Joints)

AIHTA

Osteochondral allograft transplantation (OCA) involves taking a core of the injured cartilage and underlying bone from the patient and replacing it with a size-matched transplant of mature hyaline cartilage and subchondral bone from a cadaver donor. OCA may be indicated for the treatment of larger lesions when conservative management or first-line surgical treatment has failed.

Single/Two-Step Scaffold-Based Cartilage Repair in the Knee and Ankle Joint

AIHTA

Articular (chondral) cartilage is a thin layer of connective tissue which can be damaged by trauma, joint degeneration, or as the result of osteochondritis dissecans. Single-step and two-step scaffold-based cartilage repair (autologous matrix-induced chondrogenesis, or AMIC, and matrix-induced autologous chondrocyte implant, or MACI) is compared to microfracturing or autologous chondrocyte implantation. In AMIC, a matrix is implanted in the area of the damaged cartilage, which then disintegrates over time. In MACI, intact cartilage is first extracted arthroscopically from a non–weight-bearing area of the affected cartilage. These cells are then cultured in vitro and implanted as part of a matrix. The intent is to restore joint function and reduce pain. The procedures may offer an alternative to total joint replacement.

Synovasure Alpha Defensin Lateral Flow Test Kit for the Assessment of Periprosthetic Joint Infection

HTW

Prosthetic joint infection is a serious complication following hip or knee replacement surgery. Alpha defensin is an antimicrobial peptide released into the body in response to an infection. The Synovasure Alpha Defensin testing kit is a rapid test for detecting alpha defensin in synovial fluid. This may contribute to diagnosing infection and ruling out other post-surgical problems that may also cause pain, such as malpositioning of the joint prosthesis.
Synovasure Alpha Defensin Tests for the Diagnosis of Hip and Knee Periprosthetic Joint Infection (PJI)
SHTG
As Health Technology Wales previously described, the Scottish Health Technologies Group also looked at the Synovasure Alpha Defensin testing kit and its potential role in diagnosing joint infection following hip or knee replacement surgery.

Palliative and Long-Term Care

Dementia Villages: Innovative Residential Care for People With Dementia
CADTH
Dementia villages, or the Hogeweyk Care Concept, is a person-centred model of residential care for people living with severe dementia. The focus is on creating a smaller-scale, more home-like environment where people with dementia can have the freedom to participate in activities that are meaningful to them in a safe and supportive environment.

Rehabilitation

Artificial Intelligence Applications for Older Adults and People With Disabilities
National Academies of Sciences, Engineering, and Medicine
This is a summary of a workshop on artificial intelligence, or AI, for older adults and those with disabilities. The participants discussed some of the issues and possibilities for the use of AI in these populations, together with challenges and unintended consequences.

Efficacy and/or Effectiveness of Near-Infrared Light Therapy as Treatment for Post-Concussion Syndrome (PCS)
WorkSafe BC
Near-infrared light is infrared light at the shortest end of the spectrum. This light has gained attention for its purported ability to activate anti-inflammatory processes in therapy, including in the treatment of post-concussion syndrome (e.g., dizziness, fatigue, and noise and light sensitivity).

Efficacy and/or Effectiveness of the Huber 360 System as a Rehabilitation Tool Among Patients With Spinal Cord Injuries
WorkSafe BC
The Huber 360 system is a multi-axis, motorized rehabilitation platform used for the assessment and rehabilitation of spinal cord injuries. It is also used for other conditions, including back and shoulder injuries, posture assessment, and sports rehabilitation. The system provides both physical and cognitive training, and is intended to strengthen muscles, correct posture, and improve balance.
Multigrip Myoelectric Upper-Limb Prosthetics
HTW
This appraisal looked at the use of arm and hand prostheses. Electrically powered prostheses, commonly known as myoelectric prostheses, are controlled by biological signals from the user’s muscles. Multi-grip myoelectric prostheses provide separate or simultaneous control of each finger using this type of electrical stimulation.

Path Finder for Freezing of Gait in People With Parkinson’s Disease
NICE
Path Finder is a laser shoe attachment designed to prevent the freezing of gait in people with Parkinson disease. The device is mounted on a strap that is attached to each shoe and projects a green laser, which acts as a visual stepping cue for the wearer.

RT300 for Spinal Cord Injury Rehabilitation
NICE
The RT300 is a device for rehabilitative cycling. It combines functional electrical stimulation with a motorized ergometer. It can be used by people with a spinal cord injury and can be configured for use while in a wheelchair, chair, or bed to stimulate trunk and limb muscles.

Respiratory
C-Reactive Protein Point-of-Care Testing (CRP POCT) to Guide Antibiotic Prescribing in Primary Care Settings for Acute Respiratory Tract Infections (RTIs)
EUnetHTA
C-reactive protein (CRP) is a blood biomarker of bacterial infection or inflammation. Point-of-care CRP tests can help distinguish bacterial from viral upper respiratory tract infections. Making CRP test results quickly available to primary care providers, without the need to wait for laboratory test results, may improve patient care. Potentially, it could also encourage antibiotic stewardship and reduce the risk for antibiotic resistance.

SuperNO2VA for the Relief of Upper Airway Obstruction in People With Obstructive Sleep Apnoea
NICE
The SuperNO2VA is a non-invasive positive airway pressure device that ensures that the airway remains open during surgical procedures and post-operatively in patients with obstructive sleep apnea. It may offer an alternative to current oxygen delivery systems, and can deliver oxygen and provide ventilation while the patient is receiving either general anaesthesia or sedation.
Other

**Algorithms as Medical Devices**  
PHG Foundation

This is a report on the regulation of digital health technologies and how to manage the challenges presented by algorithms, machine learning, artificial intelligence, and software in medical devices. Current US and European Union regulations are discussed, along with suggestions for where regulatory changes or new regulations may be needed.

**Citizen Generated Data — an Opportunity for Public Health?**  
PHG Foundation

The increasing use of personal digital technologies is producing a wealth of health-related data beyond that captured by the health care system. This information could contribute to public health in many ways — for example, by providing new sources of information on health behaviours, population health, and feedback on health services.

**Citizen Generated Data: The Ethics of Remote Patient Monitoring**  
PHG Foundation

The development of digital technologies — such as wearables, home sensors, and digital apps — has had a particular impact on remote patient monitoring. But the collection of data on individual patients raises some ethical issues, including patient privacy, professional responsibilities, and equity of access to this type of care.

**Closed-System Transfer-Devices for Limiting Exposure to Cytotoxic Anti-Cancer Drugs in Healthcare Professionals, Patients and Visitors**  
SHTG

Exposure to cytotoxic drugs used in cancer treatments can have adverse effects on the health of clinical staff and family caregivers, as well as on the health of those involved in the manufacture, transportation, and disposal of these substances. Closed-system transfer devices may reduce exposure and associated risks — together with the use of other preventive, safe-handling practices and personal protective equipment.

**Closed Vs Open Systems for the Preparation and Administration of Cytostatic and Other Hazardous Drugs (NIOSH Group 1): Analysis of the Scientific Evidence, Costs and Organisational Requirements (English Summary)**  
Osteba

As the Scottish Health Technologies Group previously did, the Basque health technology assessment agency Osteba also examined the evidence on closed-system drug-transfer devices for reducing the risk of exposure and adverse effects in clinical staff, and the implications of using these systems within the Basque health system.
Market Insights: AI’s Impact on Health Care
AHA
This is a series of AHA reports on the impact of artificial intelligence, or AI, on hospitals and health systems, with a focus on AI's impact on clinical care, administration, and delivery of care, and the health care workforce.

An Overview of Clinical Applications of 3-D Printing and Bioprinting
CADTH
Additive manufacturing or 3-D printing involves the use of digital files to create 3-D objects using relatively inexpensive printers. The range of possible 3-D printed health technologies includes medical devices, dental crowns, dentures and orthodontics, surgical models for preoperative planning, and tissue regeneration, and assistive devices, orthotics, and prostheses. The overview highlights evidence gaps; ethical, regulatory, and reimbursement issues; and estimated costs associated with 3-D printing in health care.

Framework for Addressing Ethical Dimensions of Emerging and Innovative Biomedical Technologies
National Academies of Sciences, Engineering, and Medicine
This is a brief synthesis of information from the National Academies’ reports, intended as a guide for policy-makers on the ethical issues raised by new and emerging biomedical technologies.

Medical Implants
NCB
This is the Nuffield Council on Bioethics' review of potential ethical issues with medical implants, including equitable patient access, informed consent, cybersecurity risks, and who is responsible for long-term patient monitoring and post-market surveillance.

My Healthy Future: Health Technologies and Social Impacts
PHG Foundation
Personalized medicine includes preventive health interventions, diagnostics, and treatments tailored to the individual. This report discusses the social determinants of health and the impact of personalized medicine on health inequalities and how these may be addressed.

Surgical Innovation, New Techniques and Technologies
RCS
This is a guide for introducing and assessing new surgical procedures to ensure oversight and safety. Included are considerations such as the learning curve, informed patient consent, ethical issues, costing, and methods for evaluating safety and effectiveness.
The Topol Review: Preparing the Healthcare Workforce to Deliver the Digital Future
NHS
This is an analysis of the anticipated impact of digital technologies on the UK’s health care workforce, including artificial intelligence, robotics, genomics, wearables, telehealth, and virtual reality.

Trends and Forecasts

12 Innovations That Will Change Health Care and Medicine in the 2020s
Time Magazine
This article discusses selected technological trends that industry experts predict will have major impacts on health in the near future. These include artificial intelligence and “big data,” wearables, smartphone-based ultrasound, virtual reality, and drones.

2019 Top 10 HEOR Trends
ISPOR
ISPOR’s annual list of health economics and outcomes research trends focus on important issues across health systems, such as the need for real-world evidence and universal, equitable access to health care, as well as the impact of aging populations, big data, lifestyle and chronic diseases, and personalized medicine.

Future of Surgery
RCS
This site reports on changing demographics and technological developments that will impact surgery, including endoscopic and laparoscopic technologies, advanced imaging, artificial intelligence, digital technologies, genomics, and robotics.

Medgadget’s Best Medical Technologies of 2019
Medgadget
The Medgadget 2019 list of technologies includes some commercially available devices and others in earlier phases of development. The technologies include devices for opioid addiction and overdose treatment, transcranial electromagnetic treatment for Alzheimer disease, peripheral nerve stimulation for the treatment of irritable bowel syndrome, implantable pulse generator for treatment-resistant hypertension, trigeminal nerve stimulation for attention-deficit/hyperactivity disorder, and a fully implantable left ventricular assist device.

The Medical Futurist
The Medical Futurist
This site offers e-books and a weekly email of the latest news on artificial intelligence, robotics, virtual health care, and digital health technologies.
Our Healthy Future
PHG Foundation

This document provides an overview of scientific and social trends likely to impact both the health of individuals and health care systems in the near future; for example, the implications of “citizen-generated data,” privacy and autonomy, overdiagnosis, and personalized medicine.

PCORI Health Care Horizon Scanning System: High Potential Disruption Report May 2019
PCORI

This document offers a description of potentially disruptive technologies across clinical areas. The topics identified by the ECRI Institute through this horizon scanning are vetted by clinical experts and other stakeholders as likely to be disruptive in US health care within the next three years. Technologies may be disruptive in one or more areas; for example, in patient outcomes, access to care, setting of care, care delivery, or costs of care.

PCORI Health Care Horizon Scanning System: Horizon Scanning Protocol and Operations Manual
PCORI

This manual outlines the processes the ECRI Institute developed for a five-year horizon scanning system at the PCORI Patient-Centered Outcomes Research Institute. In addition to identifying major disruptive trends in health care, their horizon scanning focuses on both drug and non-drug technologies in five priority areas: Alzheimer disease and other dementias, cancer, cardiovascular diseases, rare diseases, and mental health and behavioural conditions. Quarterly reports describing the new and emerging technologies identified are freely available on the PCORI website.

PCORI Health Care Horizon Scanning System: Horizon Scanning Status Report

Quarterly reports prepared by the ECRI Institute for PCORI describing the new and emerging technologies identified through its horizon scanning initiative. Four quarterly reports (March, June, September, and December) were posted on the PCORI website in 2019.

My Healthy Future: The Technologies
PHG Foundation

This is a summary of new and emerging biomedical and digital technologies in personalized medicine. The report highlights “omics technologies” — such as biomarkers, proteomics, metabolomics, nutrigenomics, transcriptomics, stem cell therapies, mobile and e-health, virtual reality, medical robots, circulating tumour DNA (liquid biopsy), the microbiome, gene editing, implantable biosensors, nanotechnology, and assistive technologies based on the “Internet of medical things.”
Top 10 Medical Innovations for 2020
Cleveland Clinic

The latest annual list of medical innovations includes: an expanded use of minimally invasive mitral valve surgery, immunotherapy for peanut allergies, closed-loop spinal cord stimulation, biologics in orthopedic care, and antibiotic envelopes to prevent infections in cardiac implantable devices.

Horizon Scanning Newsletters

CADTH: Health Technology Update – Issue 25, November 2019
In this issue:
• T2Lyme Panel: A New Lyme Disease Diagnostic Assay
• New Surgical Robot Looks to Transform Minimal Access Surgery
• Auricular Neurostimulation for Opioid Withdrawal
• reset-O Offers a New Option for People with Opioid Use Disorder
• New Monitoring Device for Measuring Patients’ Physiological Responses to Pain
• SC+: a Portable Hemodialysis System for Integrated Home and In-Centre Treatment
• PredictSURE IBD: a Whole-Blood Test Providing Long-Term Prognostic Data to Guide the Clinical Management of Inflammatory Bowel Disease

CADTH: Health Technology Update – Issue 24, October 2019
(Aging in Place issue)
In this issue:
• New Device for Managing the Effects of Essential Tremor
• Ingestible Sensors for Monitoring Medication Adherence: Abilify MyCite and Proteus Discover
• New Device Allows Imaging of the Eye at Home
• BikeAround: Combining Stationary Bikes and Google Street View to Promote Reminiscence and Physical Activity in Long-Term Care
• A Wireless, Artificial Intelligence System for Monitoring Health in the Home
CADTH: Health Technology Update – Issue 23, March 2019

In this issue:

• MR-linac for Radiation Therapy for the Treatment of Cancer
• D-Nav Insulin Guidance System: A New Way to Manage Insulin Requirements
• CustomFlex ARTIFICIALIRIS: an Iris Prosthesis for People with Aniridia
• PolypDx: A Urine-Based Metabolomic Test for Colorectal Cancer Screening
• A Robotic Exoskeleton for Gait Rehabilitation After Stroke

HTAi: Disinvestment and Early Awareness Alerts

These are quarterly alerts from the HTAi Interest Group on Disinvestment and Early Awareness listing new publications on horizon scanning for, and disinvestment of, health technologies. Three issues of alerts were published in 2019 as part of a pilot project. These are freely available on the HTAi website.

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