MEDICAL DEVELOPMENT DIVISION
MINISTRY OF HEALTH

# MANUAL ON HORIZON SCANNING OF HEALTH TECHNOLOGIES

## SECOND EDITION

MAHTAS
MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION

# MANUAL ON
# HORIZON SCANNING OF HEALTH TECHNOLOGIES

**(2nd Edition)**

# MANUAL ON
# HORIZON SCANNING
# OF HEALTH TECHNOLOGIES

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# FOREWORD
## DIRECTOR-GENERAL OF HEALTH MALAYSIA

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Horizon scanning has been established and explicitly integrated into policy-making processes in many countries to appraise new and emerging health technologies. The horizon scanning system identifies, filters and prioritises new and emerging health technologies; assesses or predicts their impact on health, costs, society, and the healthcare system. As Malaysia transitions into a developed country, local healthcare innovations will instinctively propagate and proliferate. Thus, having insights provided by horizon scanning allows the Ministry of Health to identify and prioritise new and emerging healthcare technologies and drive concessions for research and investment priorities.

The rapid pace in health technology innovations leads to complexity of the treatment options and may result in higher healthcare costs. Consequently, adapting to the innovation will inadvertently result in increasing pressure on many healthcare systems. With innovation and emerging technologies on the upward trend, horizon scanning on such technologies is pertinent for monitoring and assessment purposes before market introduction. This allows proper planning in the adoption and diffusion of new health technologies in the Malaysian healthcare system, a step essential to ensure patient safety and, at the same time, support innovation.

The first edition of the manual launched in 2015 has introduced and delivered the necessary steps in the horizon scanning system. Nevertheless, updating this manual is timely as we echo the latest global development in horizon scanning and further improve our methodology, dissemination and implementation strategies. I congratulate the Malaysian Health Technology Assessment Section (MaHTAS) for their assiduous effort, ideas, and time spent developing and updating this manual. I sincerely hope this manual will delineate the framework of the horizon scanning system in Malaysia, guide its work process, and be utilised as a training module or reference.

# FOREWORD
## DEPUTY DIRECTOR GENERAL OF HEALTH (MEDICAL)

**DATO' DR. ASMAYANI BINTI KHALIB**
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Rapid advancements in health technologies including pharmaceuticals, biologics, devices, medical/surgical procedures, and health programmes have the potential to improve quality in healthcare services delivered to patients. In many countries, horizon scanning has been established to systematically identify, monitor and assess new and emerging health technologies as well as innovations in health care to determine their potential for value and impact on clinical care, the health care system, patient outcomes, and costs.

Integrating horizon scanning into a broader foresight process enables better policy making and organisational planning in financial and human resources, leading to seamless adoption and diffusion of new and innovative health technology, in keeping with the value-based approach to healthcare.

This is in line with the 12th Malaysian Plan in which the Ministry of Health has given emphasis to various reform agendas in the healthcare system including value-based medicine, innovative solutions and digital health technology. Our vision at the Medical Programme is in accordance with this, that is to work towards strengthening a healthcare system that is equitable, affordable, efficient, utilising appropriate technology, with the emphasis on quality, innovation, improved health status and improving quality of life.

Since its official launch in 2015, the Horizon Scanning Manual has been a quintessential blueprint to the framework of horizon scanning system in Malaysia. Updating this manual is therefore timely to keep pace with the latest global development of health technologies.

I would like to extend my congratulations to Malaysian Health Technology Assessment Section (MaHTAS) for their great effort and commitment in updating this manual. I hope that this manual will assist those in the endeavours of planning, implementing and improving the horizon scanning system as well as a guide to the relevant industries in Malaysia.

# FOREWORD
## DIRECTOR MEDICAL DEVELOPMENT DIVISION



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DIRECTOR MEDICAL DEVELOPMENT DIVISION

Since its establishment in 2014, the Horizon Scanning Unit, Malaysian Health Technology Assessment Section, under the Medical Development Division has enabled the healthcare decision makers to stay informed on the development of new innovations and emerging health technologies, and trends occurring across healthcare systems around the world.

The scientific evidence on such health technologies is gathered, synthesized and assessed systematically to ascertain the potential value and impact on patient and population health outcomes, health care costs, safety, and many other relevant parameters.

This timely advice allows appropriate implementation and / or adoption of health technologies as well as to facilitate budgetary planning leading to better informed and value-based decisions among policymakers in the face of the scarcity of resources and the complexity of issues and challenges which potentially have a significant impact on the system.

Recognising the challenges posed by rapid evolution of health technologies, the Medical Programme in its Strategic Framework for 2021-2025 has enlisted the use of health technology assessment as a tool for decision and policy-making process towards value-based healthcare.

Further strengthening of the horizon scanning system in Malaysia is imminent and the updating of this manual is therefore well-timed, to outline and describe the updated, improved processes and tools, dissemination, and implementation strategies in the horizon scanning system in Malaysia.

It is my ardent hope that this updated manual will greatly assist all those who are and will be involved in horizon scanning activities in Malaysia. My heartiest congratulations to the Malaysian Health Technology Assessment Section (MaHTAS) for their commitment in developing and updating this manual.

# PREFACE

This second edition Manual on Horizon Scanning of Health Technologies by Ministry of Health (MOH) Malaysia is an update to the first edition of Manual on Horizon Scanning of Health Technologies in 2016.

This manual is intended to guide and describe the horizon scanning process conducted by Malaysian Health Technology Assessment Section. This edition provides updates in the work processes and clarifications in all chapters, includes a section on obsolete technology and adds definitions of useful terms to the glossary, in line with our expanded scope of Horizon Scanning.

# 1 INTRODUCTION

Health technologies are essential in delivering highly efficient and best quality health care services. Rapid development and premature introduction of new and innovative technologies may increase health care expenditure and impose burden to any health care system. Thus, selection of potential health technologies is crucial to improve patient outcomes and refine health system efficiency and should be based on scientific evidence.

Malaysian Health Technology Assessment Section (MaHTAS) was set up in August 1995 in the Ministry of Health Malaysia as it became increasingly evident that there was a need for a more effective mechanism for the selection and introduction of technologies into the healthcare system. MaHTAS was established to ensure safe, effective and cost-effective technologies are used in the Ministry of Health facilities. This is done through the conduct of Health Technology Assessment (HTA), mini-HTA (Technology Review; TR), rapid assessment (Information Brief; IB) and also the development and implementation of Clinical Practice Guidelines (CPG). Since the inception of horizon scanning programme in 2017, MaHTAS has produced 69 TechScan (rapid) reports and 37 TechBrief reports, alongside 701 HTA reports (including TR and IB) and 105 CPGs (up to December 2021).

Having the right evidence at the right time is an important essence in health care decision making. The early identification and monitoring of new and emerging health technologies also known as **horizon scanning**, early awareness and alert (EAA) systems, emerging technology assessment or early warning systems, focuses on identifying new and emerging health technologies that are likely to have significant impact on health services and/or patient care.[1] These health technologies and innovations are still in the early stages

of development or adoption except in the case of new indications of already diffused technologies.[1]

## Definition of Early Warning Systems

The definition of an effective early warning system (EWS) is a system that identifies innovations in the field of health technology likely to have a significant impact; and disseminates information relevant to the needs of the customer which is timely, so as to enable appropriate decision making (such as resource allocation), facilitate appropriate adoption, and identify further research requirements.[2] Successful systems will have reliable connections and sources to identify new and emerging health technologies, filter and prioritise these technologies and make an assessment of potential impact in terms of clinical, safety, cost effectiveness, organisational, ethical as well as social. Information from EWS systems can be used to prioritise topics for further primary research, in-depth assessment, review or meta-analysis and also for service, manpower, financial or organisational planning and readiness.[2]

## Definition of Health Technologies

Health technologies encompass all methods used by health professionals to promote health, prevent and treat disease, and improve rehabilitation and long-term care. These would include pharmaceuticals, devices, diagnostics, procedures (and technologies used as part of a procedure), programmes, settings and public health activities.[3]

International Health TechScan (i-HTS) defines new and emerging health technologies as technologies that are not yet adopted by the health care system. Emerging pharmaceuticals are at the phase II or III clinical trial, or pre-launch stage. Emerging medical devices are at

the pre-marketing stage. New health technologies are generally in the launch, early post-marketing or early diffusion stages.[4]

Definition of new and emerging health technologies;[3]

**New** - A technology in the phase of adoption that has only been available for clinical use for a short time and is generally in the launch or early post-marketing stages

**Emerging** - A technology that is not yet adopted by the health care system; pharmaceuticals will usually be in phase II or phase III clinical trials or perhaps prelaunch; medical devices will be prior to marketing, or within 6 months of marketing, or marketed but <10% diffused, or localised to a few centers.

## Innovation in Healthcare

Innovation can be defined as intentional introduction and application within a role, group, or organisation, of ideas, processes, products or procedures new to the relevant unit of adoption, design to significantly benefit the individual, the group or wider society.[5]

Healthcare innovation can be defined as the introduction of a new concept, idea, service, process, or product aimed at improving treatment, diagnosis, education, outreach, prevention and research, and with the long-term goals of improving quality, safety, outcomes, efficiency and costs.[5]

Innovations of health technologies in horizon scanning system can be classified as[4]:

- · A completely new technology - such as new chemical entity, new devices, new procedures
- · An existing technology being used for a new patient group or new indication
- · A significant incremental change to an existing technology that might have significant impact on, for instance, clinical outcomes, healthcare resources, or workforce

## 1.1    Purpose

The purpose of horizon scanning system is to identify health technologies that are:

- · new and emerging
- · obsolete
- · represent a change in indication or use of an existing technology, or
- · have incremental change to an existing technology

which potentially have major implications to the health system.

The aim is to provide timely advice to allow appropriate implementation and/or adoption of health technologies, and to facilitate timely budgetary planning. The system will help in decisions on undertaking primary and secondary research. Emerging technologies identified will also be monitored when the evidence is inadequate. Horizon scanning is also used to identify obsolete technologies.

## 1.2 Health Technology Assessment (HTA) and Horizon Scanning System

The main difference between HTA and horizon scanning is that the latter focuses on technologies early in the life cycle while HTA focuses on technologies that have already diffused into clinical practice. Horizon scanning is sometimes viewed as the first stage of a comprehensive HTA process. New technologies identified through the horizon scanning system which require further evaluation will be prioritised for HTA. Refer to **Figure 1** for **HTA and Horizon Scanning System** and **Figure 2** for **The Life Cycle of Health Technology Concept**.

**HORIZON SCANNING & HEALTH TECHNOLOGY ASSESSMENT**



Basic biomedical research — Translational research — Safety and efficacy — Effectiveness and cost-effectiveness — General clinical use

Primary data collection — Pragmatic trials/Outcome research

Horizon Scanning (early awareness and alert activities)

Reviews and early assessment

Full HTAs and Cochrane style reviews
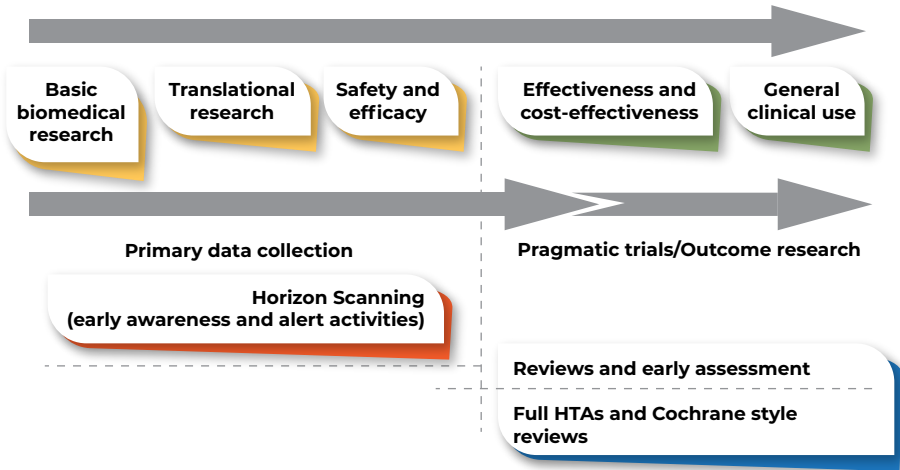
### Figure 1: Health Technology Assessment and Horizon Scanning System[4]

Adapted from: EuroScan International Network. A Toolkit for the Identification and Assessment of the New and Emerging Health Technologies. Birmingham: Euroscan International Network; 2014
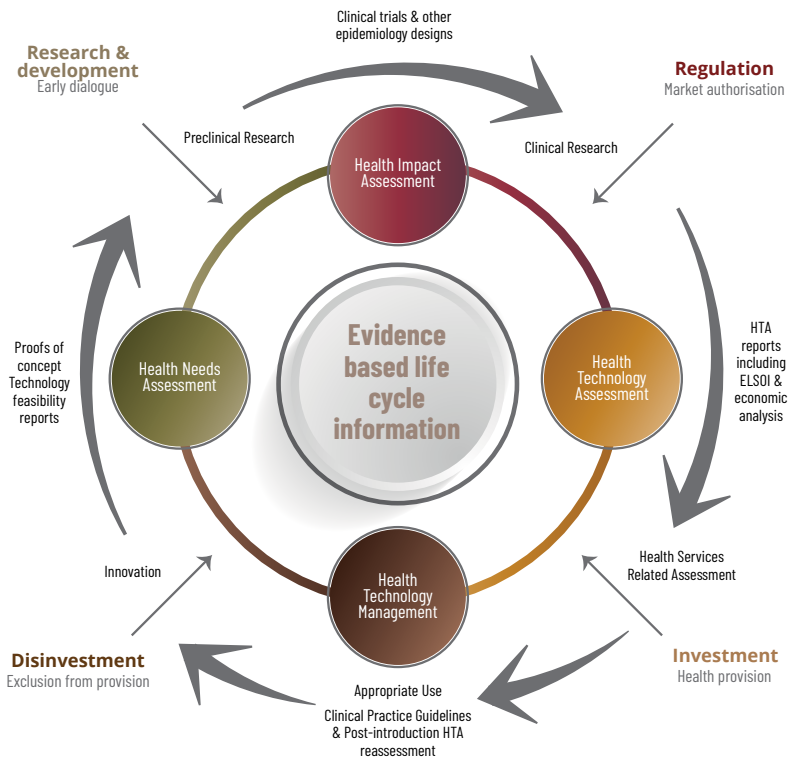
**Figure 2: The Life Cycle of Health Technology Concept [6]**

## 1.3    Scope

The system will cover all health technologies as below:

· Medical devices
· Diagnostics
· Biologics
· Regenerative technologies
· Procedures
· Pharmaceuticals
· Traditional and Complementary Medicine
· Public health interventions
· Digital health technologies

## 1.4 Priority Area

The priority area will be **local innovations** and **expensive technologies**. The expensive technologies will focus on diseases with high burden and importance, to be aligned with the five years' Malaysian Plan.

## 1.5 Time Horizon

The time horizon of assessment is **within 24 months** a product is planned to be commercialised.

## 1.6 Client/Stakeholders

The system will inform various stakeholders such as:

- Policy-makers and regulators within Ministry of Health
- Medical Device Authority (MDA)
- Universities and research institutes
- Other agencies such as Ministry of Science, Technology and Innovation (MOSTI), Ministry of International Trade & Industry (MITI), Bioeconomy Corp, Malaysian Investment Development Authority (MIDA), Malaysian Industry-Government Group for High Technology (MIGHT)
- Health care providers / practitioners

## 1.7 Potential Benefit

i. The topics will be identified early and sent for evaluation at the right time. This will allow proper evaluation of an emerging technology prior to adoption and widespread use, that is important to protect patients from unproven technologies which may be harmful or ineffective either clinically or economically.

ii.    The horizon scanning system will alert policy-makers/ health service organisations to innovations that will change current options/decisions, change current guidance/guidelines and require further planning or commissioning activity. At the same time, this system may support potential technologies, especially local innovations.

iii.   The system will allow systematic approach in identification and evaluation of emerging health technologies.

iv.    Improved collaboration with agencies involved with health care technologies, to ensure safe and effective health technologies are used in the country

# 2 GOVERNANCE STRUCTURE

The governance structure for horizon scanning activity is illustrated in **Figure 3**.

```
┌──────────────────────────────────────┐
│ HEALTH TECHNOLOGY ASSESSMENT &        │
│ CLINICAL PRACTICE GUIDELINES COUNCIL  │
└──────────────────────────────────────┘
                   │
┌──────────────────────────────────────┐
│ TECHNICAL ADVISORY COMMITTEE          │
│ FOR HORIZON SCANNING                  │
└──────────────────────────────────────┘

  Expert      Expert      Expert      Expert
  Group       Group       Group       Group
```
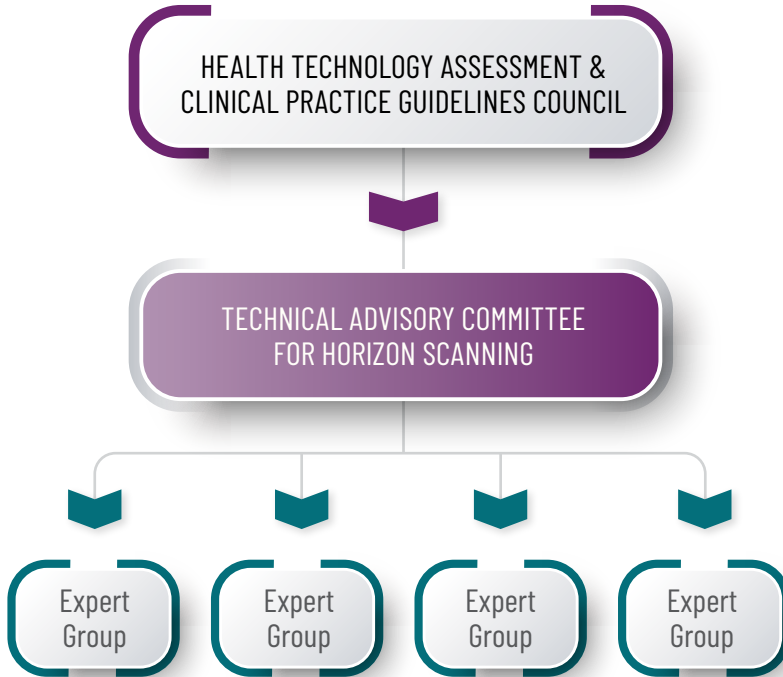
**Figure 3: Governance Structure of Horizon Scanning Activity**

## 2.1 Health Technology Assessment and Clinical Practice Guidelines Council

The Health Technology Assessment and Clinical Practice Guidelines Council is the highest authority that sets the direction of horizon scanning activity and endorse horizon scanning reports. The Council is chaired by the Director General of Health and the members consist of all the Deputy Director General of Health, the Senior Directors and Directors of relevant divisions within the Ministry of Health, Deans of Medical Faculty, representative of Malaysian Medical Association, Academy of Medicine Malaysia, Association of Private Hospital Malaysia and clinicians.

## 2.2 Technical Advisory Committee for Horizon Scanning

The Technical Advisory Committee for Horizon Scanning (TAC HS) is composed of policy makers, clinicians, researchers and representatives from agencies involved in health care innovations. This include Medical Device Authority, National Pharmaceutical Regulatory Agency (NPRA), Medical Radiation Surveillance Division, Engineering Division, Oral Health Division, Traditional and Complementary Medicine (T&CM) Division, Ministry of Science, Technology and Innovation (MOSTI), SIRIM Berhad and MIGHT, representative from related clinical services (e.g. Medical, Surgery, Radiology, Pathology). Other experts may also be invited as an opt-in member if required. Chairman of the TAC HS is appointed by the Deputy DG of Health (Medical).

The terms of reference of the TAC HS are listed below;

    i.      Provide technical expertise in the development of the strategies and priorities of horizon scanning

    ii.     Ensure the planned strategies and activities of horizon scanning are carried out effectively

    iii.    Conduct prioritisation process of horizon scanning topics

    iv.    Advocate horizon scanning activity to the stakeholders

## 2.3      Expert Group

The expert group will be formed when required to assist in assessment of certain technologies. The members will be selected based on the topic or technology to be reviewed.

## 2.4    International Health TechScan and other International Meetings

International Health TechScan (i-HTS) is the international network for horizon scanning agencies which will provide information and guidance on the latest or appropriate methods in conducting horizon scanning as well as provide a platform for knowledge sharing and networking. International Health TechScan (i-HTS) has set up five regional groups (RG) i.e., AfroScan, ArabScan, AsiaScan, EuroScan and LatinScan to build the bridge between regions and the board to understand the needs and requirements of the regional group members.

# 3 METHODS

## 3.1 Work Process

The main stages involved in the horizon scanning system are illustrated in **Figure 4**.
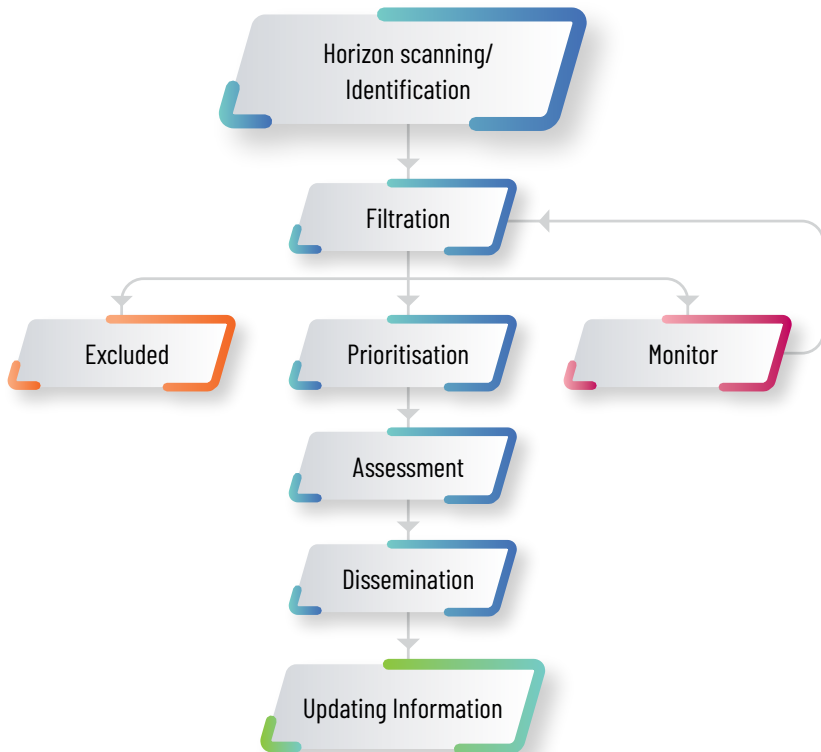


**Figure 4: Main Steps in Horizon Scanning System**

Adapted from: EuroScan International Network. A Toolkit for the Identification and Assessment of the New and Emerging Health Technologies. Birmingham: Euroscan International Network; 2014

## 3.2    Identification

Identification is the first step of horizon scanning work process to identify new and emerging health technologies that have the **potential impact** on clinical practice and outcome, healthcare system, cost, burden of disease and inter-agency collaboration.[4]

Two types of identification process include;[4]

i.   Proactive - looking or searching for information related to the technology. A range of sources are searched for information on new and emerging health technologies. The approach of proactive identification can be done by two ways:

    a)   General scanning
   - The sources will be scanned for any new health technology regardless of diseases and outcome.

    b)   Targeted scanning
   - The search of the technology is based on the need of the healthcare system
   - The population or patient (P) with specific outcome (O), or better known as PO approach, will be used
   - Focus of this PO approach will be decided upon discussion or meeting with relevant stakeholders/ clients.
   - Define outcome to be achieved from the perspective of the system
   - Priority base on current disease burden, for example:
     » Problem: high prevalence of diabetes mellitus
     » Outcome: to reduce complication of diabetes mellitus
     » The search may identify the technology that will improve treatment of patients with diabetes

ii.   Reactive - Allow stakeholders, health professionals, consumers and/or others to inform the horizon scanning system on new and emerging health technologies.

## Identification Criteria

For identification, the focus will be on the technologies with the following criteria;

- New and emerging innovative technologies
- The technology is for diseases with high burden or importance in Malaysia

There are three sources for identification as following:

i.   Primary sources - information is obtained directly from commercial developers, research institutes, universities, manufacturers, clinical trial registers and patent applications.

ii.  Secondary sources - information is obtained from sources that have used primary sources but may have edited or filtered the information such as commercial and medical media, conference proceedings and scientific journals, regulatory authorities and relevant experts.

iii. Tertiary sources - information is obtained from sources that have prioritised the information themselves and perhaps carried out an assessment. The sources are mainly from other Horizon Scanning organizations such as i-HTS, Canadian Agency for Drug and Technologies in Health (CADTH) and National Institute for Health Research Innovation Observatory (NIHRIO).

## Commercial developers

Information from commercial developers can be obtained through meetings, websites, annual reports, press releases and conference presentations. Commercial developers may also submit information using proforma PTK-Bor-13 PIN 1/22 for pharmaceuticals (**Annex 1**) or PTK-Bor-14 PIN 1/22 for medical technologies (**Annex 2**). In dealing with commercial developers, ethics as elaborated in **Section 8** should be observed.

## Experts

Experts in relevant fields such as clinical practice, research and public health may provide relevant information on new and emerging health technologies using proforma PTK-Bor-13 PIN 1/22

for pharmaceutical or PTK-Bor-14 PIN 1/22 for medical technologies. Meeting with experts is elaborated in **Section 9**.

**How will the identification be carried out?**
Technology can be identified via two ways either proactive or reactive methods.

**Proactive identification** will be carried out by MaHTAS staff. The sources will include medical databases, commercial websites and media, scientific journals, clinical trial registry and patent applications. The identified technologies should be recorded using **Horizon Scanning Identification Form** (**PTK-Bor-15 PIN 1/22**) (**Annex 3**) based on the identification criteria.

As for **reactive identification**, the sources either commercial developers, researchers or experts will fill up the proforma (**PTK-Bor-13 PIN 1/22** and **PTK-Bor-14 PIN 1/22** for **pharmaceutical and medical technology**, respectively) and submit to MaHTAS.

The scanning frequency will depend on the type of sources which may range from daily, weekly or monthly.

## 3.3    Filtration

Filtration is a work process which pre-set criteria is applied to narrow down potential relevant technology that has been identified.[4]

Filtration process will be done in-house (MaHTAS staff) by using predefined criteria and filling up the **Horizon Scanning Filtration Form** (**PTK-Bor-16 PIN 1/22**; **Annex 4**). More information on the technology can be obtained when necessary in completing the filtration form. The completed filtration form will be discussed internally and a decision for prioritisation will be made.

The identified technology which has undergone filtration process is either monitored (too early in development), excluded (e.g., approved, low burden of diseases) or send for prioritisation.[4]

## Filtration criteria

Filtration criteria used for filtration:

    i.    The technology is **new / emerging or innovative**.

        a)    Innovative technology - either completely new (novel) or established technology with new indication of use or a significant modification of an existing technology

        b)    Local innovation - higher priority

    ii.    The technology is within the **time frame**:

        Time frame use for assessment is within 24 months before the technology is expected to be launched, marketed or licensed.

    iii.    Disease burden or importance

        The technology is for diseases that are of high burden or importance in Malaysia.

        » Disease burden is the impact of a health problem as measured by financial cost, mortality, morbidity or other indicators (e.g., infectious diseases such as dengue, malaria, non-communicable diseases (NCD) and others.

        » Some diseases may not have high burden but important due to high mortality or high cost of treatment e.g. rare diseases

The framework for filtration is as illustrated in **Figure 5**.

**NEW TECHNOLOGY IDENTIFIED**

| Exclude topic | ← NO | Innovative? High disease burden or importance? | Not sure → | Require further information (contact expert) |

| Too early – monitor Too late – exclude or refer for HTA/TR | ← NO | Within time frame? (i.e 24 months) | Not sure → | Require further information (contact developer) |

**Sent for prioritisation**

## Figure 5: Filtration Framework

Adapted from: EuroScan International Network. A Toolkit for the Identification and Assessment of the New and Emerging Health Technologies. Birmingham: Euroscan International Network; 2014

## 3.4    Prioritisation

Prioritisation is a process to determine whether the filtered technologies has major clinical or financial impact for further assessment.[4]

Technologies must satisfy the pre-defined prioritisation criteria before being accepted for further assessment or evaluation based on stakeholder and customer requirements.[4]

**Prioritisation criteria**
These are the **pre-defined prioritisation criteria** which need to be considered;

### i.    Population/end-user

    a) Disease burden - the impact of the disease in terms of number of people affected, morbidity, mortality and other indicators
      » *Higher priority for diseases with higher burden or importance*
    b) Current options for patients - are there already other treatment regimens available for this specific indication or is this technology a completely new therapy? Will the technology replace the current treatment or is it an add-on?
    c) Is the technology novel, incremental or new indication?
      » *Higher priority for novel technologies and if there is no treatment regimen available*
    d) Is the technology a local innovation?
      » *Higher priority for local innovation*

## ii.    Potential impacts of technology

a) Patients - clinical impact such as morbidity, mortality, quality of life, diagnosis
   » *Higher priority for technologies that may reduce morbidity, mortality, improve quality of life and diagnosis*
b) Cost - such as increase cost or savings, large capital outlay, direct and indirect costs for patients and society
   » *Higher priority for expensive technologies*
c) Organisation - increase or decrease utilisation of service, structural changes and staff training
   » *Higher priority for technologies which leads to increase use of service, needs changes in infrastructure and required training*
d) Societal or ethical issues - *high priority for technologies with higher impact to the society*
e) Safety/adverse events - invasiveness of the technology and the associated adverse events
   » *Higher priority for technologies with higher safety risk*

## How will prioritisation be carried out?

Prioritisation can be carried out in a number of ways depending on resources and time availability, transparency of process and who is involved.

Prioritisation will be carried out by:

i.    In-house (MaHTAS staff) who will present the technology to be prioritised
ii.   Technical Advisory Committee for Horizon Scanning (TAC HS). Further detail in Section 2.2.

Due to potential conflict of interest, prioritisation does not usually involve the industry, commercial developers, clinicians and researchers who work closely with a technology.

The technologies will be prioritised by using a scoring system. The TAC HS members will give scores to the filtered technologies based on the abovementioned criteria. Then, the scores for each technology will be calculated, and the technology will be prioritised according to their score rank and discussion among the TAC HS members.

Prioritisation is done using **Horizon Scanning Prioritisation Form PTK-Bor-17 PIN 1/22** as in **Annex 5**.

## 3.5    Assessment

Assessment of a technology or prediction of potential impact is an important activity of a horizon scanning system. It will determine whether the technology will be diffused in the healthcare system. This will also depend on stakeholders' interests and needs.[4]

Assessment of the prioritised technologies will take into account the significant impact to the healthcare system, clinical practice, outcomes and costs.[4]

**Types of Assessments**
Assessment may include;

i.  **TechScan:** Taking around 4 weeks to complete, producing 5 - 10 pages of review. Rapid assessments are usually conducted based on the technology identified proactively and in response to a specific request from stakeholders. The assessment typically includes a summary of the technology, effectiveness, safety and cost. A pre-formatted template (HS 06) is used for TechScan (**Annex 6**)

ii.  **TechBrief**: A more in-depth but still brief overview taking approximately 4 - 6 weeks and around 10 - 20 pages length to produce. The assessment typically includes background of the technology, information on how it works, the clinical burden of the disease, current comparator, safety and effectiveness data, costs, social, ethical, and legal concerns. See **Annex 7** for TechBrief template (HS 07)

iii.  **Horizon Scanning Report:** A focused in-depth assessment using a structured search strategy. Taking approximately 4 - 6 months to complete, can be longer than 40 pages. See **Annex 8** for in-depth assessment (Horizon Scanning Report) template (HS 08)

## How will the assessment be carried out?

Assessment will be carried out by MaHTAS staff after the prioritisation process (**Figure 6)**.

A search strategy should be developed to ensure consistency in retrieving the relevant information. The comprehensiveness of the search will depend on the types of product i.e. rapid, brief overview or in-depth report. Sources for searching may include;

- Databases of ongoing clinical trials
- Commercial pharmaceutical and medical device databases
- Registration and licensing sites
- Relevant scientific conferences
- Bibliographic databases

See **Annex 9** and **Annex 10** for pharmaceutical and medical technology search records, respectively.

An assessment template as in **Annex 6**, **Annex 7** and **Annex 8** should be used as guidance for write up. The fields may include;

- Technology related information
- Patient and setting related information
- Evidence and policy
- Impact predictions

Figure 6 illustrates **The Flow of Assessment**.
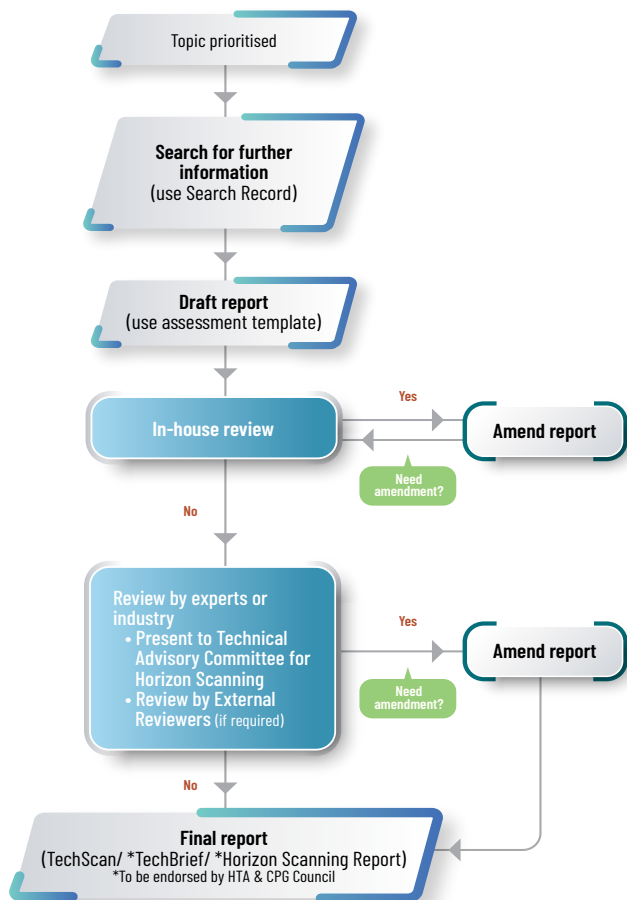


**Figure 6: The Flow of Assessment**

## 3.6    Methods for Predicting Potential Impact

One of the main purposes of MaHTAS horizon scanning system is to assess or predict the future impact of a technology so that research funders may set funding priorities and investment agencies may decide on the investment priorities based on the assessment. It is a challenge to assess the potential impacts of a technology that are still in the development stage. This is due to lack of data or uncertainty of data. Various methods have been applied by horizon scanning agencies to predict the future impacts of the technologies as discussed below.

**Use of Experts**

Input from experts in the related field is important in forming opinions about the potential for an emerging technology to work, be adopted and have a significant impact. The experts have the knowledge and experience in managing patients with specific diseases using the current available technologies. The relevant National Head of Clinical Disciplines will be contacted to get their opinion on a technology and to suggest the relevant experts to be involved in the analysis.[7]

Experts can be engaged either by;
- Forming an expert committee for relevant topics
- As external reviewer - Feedback on the technical or scientific content of the report will be gathered from the external reviewer, who is usually an expert in the related field (**External Reviewer Feedback Form**; **Annex 11**).
- As a member of the Technical Advisory Committee- Input from experts will also be gained through the Technical Advisory Committee Meeting and the potential impact of the emerging technology will be deliberated upon.

## Use of Quantitative Modelling

Quantitative models have been used to predict utilisation, cost and sometimes outcomes of technologies. However, in horizon scanning, the concerns are; the prediction accuracy could be difficult to validate due to uncertainty in the assumptions regarding emerging technologies and quantitative modelling is generally time-consuming and expensive. On the other hand, quantitative modelling would provide valuable input to stakeholders to reduce uncertainty in their decision-making process and the intelligence and insight developed during the modelling process could be valuable for stakeholders.[7]

The accuracy of the model will depend on the availability and quality of data, and the granularity of the prediction requested. Inputs from external experts may potentially help reduce the uncertainty in the modelling process and thus improve the model's performance. These experts could be engaged at various stages in modelling, from making assumptions and defining parameters at the beginning to peer reviewing the results at the end.[7]

Various forecasting methods have been proposed. A group in Italy has developed a forecasting method for drug utilisation, integrating a dynamic market potential model, based on cellular automata model, with the budget impact analysis approach.[8]

## Best-Worst Scaling

Gallego et al. used Best-Worst Scaling to explore clinicians' view on emerging technologies with respect to their expected impact on hepatocellular carcinoma outcomes in the next 5 to 10 years. Best-Worst Scaling is rooted in random theory and described as a compromise between discrete choice experiments and ranking scales. Best-Worst Scaling assumes that respondents can easily choose items that are extremes (best and worst, most and least,

smallest and largest) in a set of three or more items. Balanced incomplete block design was used to construct the set. This design ensured that each task contained five technologies, each one appeared five times and as a pair to another given technology five times. From the five technologies, participants chose most first, and from the four remaining technologies, they then chose the least. The measures of priority scores can be analysed using most minus least scores, square root estimates, and conditional logistic regression analysis.[9]

## 3.7    Dissemination

Effective dissemination strategy is important to the horizon scanning system to ensure that the information produced reaches the target audience in a timely fashion.

The completed report will be disseminated via email to the relevant stakeholders and local innovators. In addition, the report will be uploaded to the Ministry of Health Malaysia website after being endorsed by the Health Technology Assessment and Clinical Practice Guidelines Council. The reports can also be accessed through myMaHTAS 2.0 mobile application and website.

Other methods of dissemination may include:
- Sharing with other healthcare horizon scanning programmes (e.g., i-HTS)
- Newsletter on key/significant technologies
- Producing peer-reviewed publications or presenting in academic/scientific venues
- Joining and actively participating in i-HTS activities
- Social media/networking service

# 4 OBSOLETE HEALTH TECHNOLOGY

As many healthcare systems face resource scarcity and increasing service demand, disinvestment processes on obsolete or low-value health technologies could help to ensure the sustainability of the health care system, providing new resources that could be reinvested in more effective, cost-effective, or useful health technologies.[10] In real practice however, once decisions on reimbursement were taken, health technologies remained unassessed up to their disuse by health professionals.

Based on the discussion with the MOH and external experts, obsolete health technology is defined as a health technology that has been superseded by other technologies or demonstrated to be ineffective, harmful or not useful.

## 4.1 Identification

Identification of obsolete health technology will be conducted through various sources which include;

   i. Reviewing the CPG and HTA/TR reports for health technologies that are not being recommended.
   ii. Experts among the national advisors and the TAC HS members
   iii. Regulatory agencies such as National Pharmaceutical Regulatory Agency (NPRA) and Medical Device Authority (MDA)
   - Adverse Drug Reaction (ADR) reports for drugs
   - Obsolete medical devices
   iv. Proactive online search such as international network search; i-HTS, Cochrane Library, Choose Wisely; journal and databases as well as the newspapers.

## 4.2   Filtration

Filtration process aims to filter out some of the identified technologies. However, based on the discussion with the experts, filtration will be conducted simultaneously with the prioritisation process.

## 4.3   Prioritisation

Prioritisation will be conducted using a similar work process described in Section 3.4 and according to the following criteria and their assigned weightages.

   i.   Population/users - Frequency of the disease (Weightage: 25%)
         a)   Disease burden
         b)   Frequency of use
         c)   Patient's preference
         d)   User friendly

   ii.   Risk/Benefit - Efficacy/effectiveness (Weightage: 45%)
         a)   Efficacy/effectiveness
         b)   Adverse events
         c)   Risk (health risk to the staff/environment)
         d)   Medicolegal implications

   iii.   Cost/organisation and other implications (Weightage: 30%)
         a)   Service availability - Functionality/performance
         b)   Risk - Cost/safety issues
         c)   Maintenance cost

## 4.4   Assessment

If an assessment is required, it will be conducted systematically as health technology reassessment.

# 5    HORIZON SCANNING AND DECISION MAKING

Horizon scanning reports summarised why the new technology is important. The reports will provide sound and timely information to stakeholders for the decision-making process. Advanced information enables earlier and more effective decision making and planning, thus will result in faster uptake in patients who need the technologies for their treatment.

Technologies which are identified to have potential impact but with insufficient evidence, can be prioritised for research.

Horizon scanning of medical technologies can be used for decision on procurement, planning, programme initiation, health policy making, research, investment, and clinical practice by various stakeholders as in **Figure 7**.
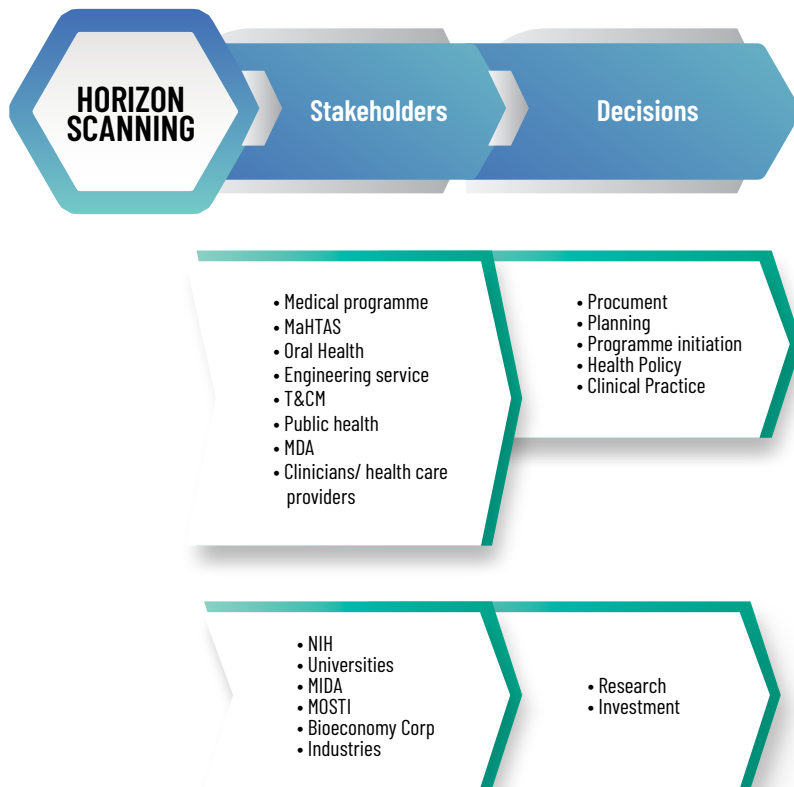
**Figure 7: Horizon Scanning Framework for Medical Technology**

Adapted from: EuroScan International Network. A Toolkit for the Identification and Assessment of New and Emerging Health Technologies. Birmingham: Euroscan International Network; 2014

*Abbreviations: MaHTAS = Malaysian Health Technology Assessment Section, T&CM = Traditional & Complementary Medicine), MDA = Medical Device Authority, NIH = National Health Institute, MIDA = Malaysian Investment Development Authority, MOSTI = Ministry of Science, Technology & Innovation, BioTech Corp = Malaysian Biotechnology Development Corporation

For pharmaceuticals, the input can be used in making decisions regarding drug registration before it reaches the local market, drug evaluation and pharmacoeconomic evaluation as well as planning, procurement, health policy, clinical practice and investment (Figure 8).
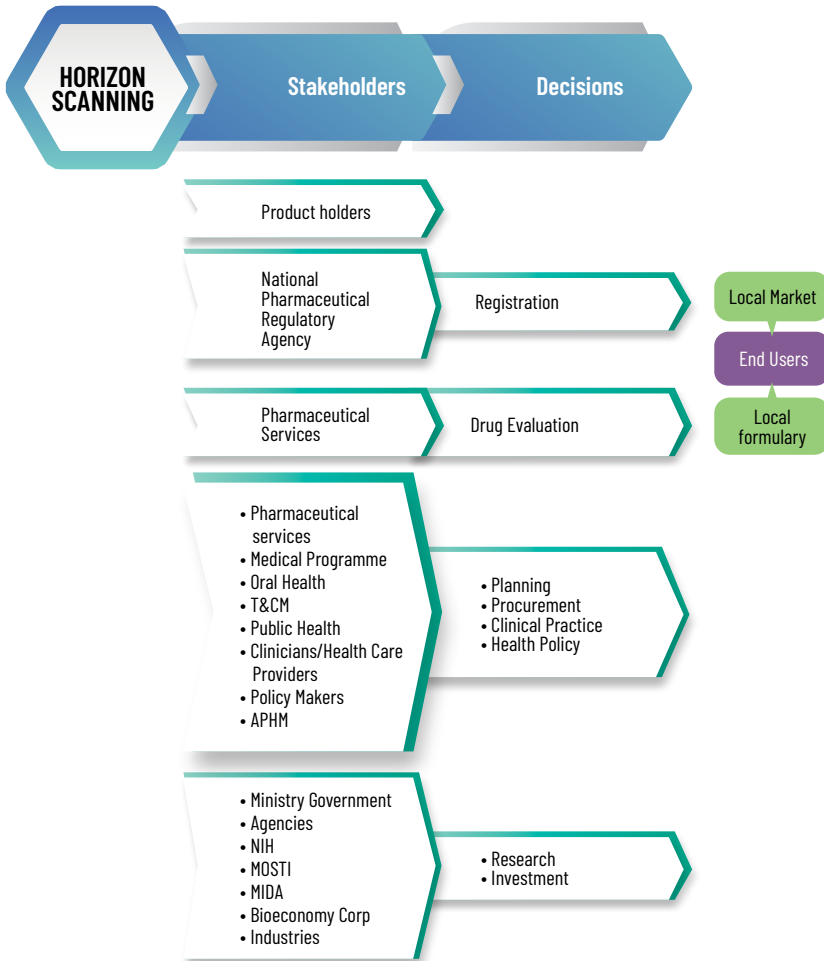
**Figure 8: Horizon Scanning Framework for Pharmaceuticals**

Adapted from: EuroScan International Network. A Toolkit for the Identification and Assessment of New and Emerging Health Technologies. Birmingham: Euroscan International Network; 2014

*Abbreviations: T&CM = Traditional & Complementary Medicine, MDA = Medical Device Authority, NIH = National Health Institute, MIDA = Malaysian Investment Development Authority, BioTech Corp = Malaysian Biotechnology Development Corporation, APHM = Association of Private Hospitals of Malaysia, MOSTI=Ministry of Science, Technology & Innovation

# 6 UPDATING INFORMATION

Due to the nature of early assessment, the information from horizon scanning reports used is often incomplete and dynamic, thus it is likely to change or expand before the technology is fully implemented. In certain situations, information needs to be updated and fed back to clients. In other occasions, re-assessment may be considered to include new information.

# 7 EVALUATION OF HORIZON SCANNING METHOD AND SYSTEM

Evaluation is an important component in any horizon scanning system to ensure its effectiveness and efficiency so that further development and improvement can be carried out. A horizon scanning programme can be evaluated in terms of its structure, process and outcomes.[7]

The main outcome of the horizon scanning system is the ability to predict the potential impacts of certain technologies. However, it is quite challenging to design and conduct rigorous studies for this type of assessment. Simpson et al. conducted a study to assess the accuracy of forecasting using standard diagnostic assessment tools where the sensitivity, specificity and predictive values of the United Kingdom National Horizon Scanning Centre's prediction methods were estimated with reference to an imperfect gold standard, that is expert opinion of impact 3 to 5 years after prediction.[11] Such evaluation may be conducted at least after five years the system have been established.

A periodical survey may also be conducted to get the stakeholders' feedback on the impact of the horizon scanning reports on their decision making.

The direct outputs of the horizon scanning system such as the number and type of assessment, the quality & acceptability of the report and the accessibility can be evaluated periodically. A periodical survey or feedback mechanism can be developed to assess the quality and acceptability of the report. The accessibility can be evaluated based on the number of views and downloads from the website as well as requests for the reports.

The structural aspect that can be evaluated includes funding, governance and mandate, place in policy making process, independence from commercial, political or other influence, staffing and facilities.[4]

The process that can be evaluated includes timely identification of topics, application of explicit and agreed identification criteria, application of explicit agreed filtration and/or prioritisation criteria, application of agreed investigation and reporting methods e.g. timeliness, quality sources, use of experts, peer review and timely updating of information systems such as licensing plans, expert contact details and output from system.[7] The evaluation of the structures and processes may be conducted through internal or external audit process.

In MaHTAS, the evaluation of quality and impact of horizon scanning reports will be performed by conducting a survey among the stakeholders using **Horizon Scanning User Feedback Form** (**Annex 12**).

# 8  ENGAGEMENT WITH COMMERCIAL DEVELOPERS

Basic information about a technology can usually be found on company websites, in commercial databases and through general internet searches. However, to obtain detailed information about a technology such as development status, regulatory or marketing plans, unpublished or ongoing studies and pricing information, it is usually necessary to contact the developer directly.[4]

Some of the technologies which are within the pipeline or still in the research stage will not be available publicly. Thus, the engagement with industries such as pharmaceutical companies, medical device companies and manufacturers of diagnostic tests is essential. However, it is recognised that working with these industries can be problematic due to differing purposes and conflicts of interest.

Two mechanisms are used for engagement process, via:
    i.     Proforma send by industries/agencies/research institutes
    ii.    Meeting with industries

MaHTAS Horizon Scanning Unit recommends **Guidelines on Interaction with Industries** (**Annex 13**) to be observed by the members while interacting with industries. This guideline aims to protect the interest of both parties, in order to cultivate positive contacts and to ensure that interaction happens on terms acceptable to both parties.

MaHTAS Horizon Scanning Unit has prepared a **Confidentiality Statement** (**Annex 14**) to be given to the industries in gaining their trust to provide the information needed as well as protecting their confidentiality.

# 9 ENGAGEMENT WITH EXPERTS

Experts play an important role in the horizon scanning system as one of the sources of information for emerging technologies. They may also be consulted to get additional information prior to the filtration process especially to verify the innovativeness of a particular technology within their specialty area and to get more information about current management of the diseases.

Input from experts is important to assist in predicting the potential impacts of a particular technology during the assessment process. However, it is important to bear in mind, expert opinion should not substitute comprehensive, proactive searches of other sources of information.[6]

Engagement with experts can be done through these mechanisms;
  i.    Proforma send by experts
  ii.   Periodic meeting with experts to get input on emerging technologies or prioritised area via various medium such as face to face, video conference, tele-conference and email exchange

Potential conflict of interest is an important factor to consider in selecting expert informant.[7] The identified experts will be appointed as expert panel for a specific technology being analysed and will have to declare their conflict of interest by completing the **Declaration of Competing Interest Form** (**Annex 15**). A database of experts who are willing to be involved with horizon scanning activity will be kept.

# 10 CODE OF PRACTICE AND CONFIDENTIALITY STATEMENT

Engagement with commercial developers requires careful management and transparent processes understood by both parties at the outset. MaHTAS has delineated the code of practice in dealing with industries in **Guidelines on Interaction with Industries** (**Annex 13**).These guidelines have to be observed by all MaHTAS members to avoid conflict of interest and in maintaining integrity. All horizon analysts will have to declare their conflict of interest by completing the **Declaration of Competing Interest Form** (**Annex 15**).

Some of the information received by MaHTAS Horizon Scanning Unit may be confidential. Explicit statements about how the confidential information is identified and managed, the purpose of sharing confidential information and with whom the information will be shared is declared in the **Confidentiality Statement** (**Annex 14**). Confidential information will be kept in confidential files in a locked and barred metal cabinet as outlined in Guidelines and Procedure on Classification and Reclassification issued by the Office of the Chief Government Security Officer. Only appointed officers are allowed to handle confidential information.

## GLOSSARY

### Medical Devices[12]

'Medical device' means any instrument, apparatus, implement, machine, appliance, implant, reagent for in-vitro use, software, material or other similar or related article, intended by the manufacturer to be used, alone or in combination, for human beings, for one or more of the specific medical purpose(s) of:

· diagnosis, prevention, monitoring, treatment or alleviation of disease,
· diagnosis, monitoring, treatment, alleviation of or compensation for an injury,
· investigation, replacement, modification, or support of the anatomy or of a physiological process,
· supporting or sustaining life,
· control of conception,
· disinfection of medical devices
· providing information by means of in-vitro examination of specimens derived from the human body; and does not achieve its primary intended action by pharmacological, immunological or metabolic means, in or on the human body, but which may be assisted in its intended function by such means.[12]

**Note:** Products which may be considered to be medical devices in some jurisdictions but not in others include disinfection substances, aids for persons with disabilities, devices incorporating animal and/or human tissues, devices for in-vitro fertilization or assisted reproduction technologies.[12]

## Diagnostics

A diagnostic includes any technologies either an equipment or technique used in medical diagnosis.[12]

## Biologics

Biologics are medications targeted to specific genotypes or protein receptors. Biologics include hormones, growth factors, interferons, interleukins, polypeptides, monoclonal antibodies and vaccines.[13]

## Clinical Procedures

Clinical procedure is defined as any practice of a health practitioner that involves a combination of special skills or abilities and may require drugs, devices or both.[14]

Surgical procedures refer to all invasive therapies performed as in-patient surgery, where in-patient surgery is defined as a surgical operation or procedure which is performed with an overnight stay in an in-patient institution (International Classification of Disease ICD 9-CM and case mix).[14]

## Regenerative Technologies

Regenerative technologies refer to technologies used in regenerative medicine in replacing or regenerating human cells, tissue or organs to restore or establish normal function.[15]

## Pharmaceuticals

A pharmaceutical is a drug or medicine that is prepared or dispensed in pharmacies and used in medical treatment.

## Traditional and Complementary Medicine[16]
### Traditional medicine

Traditional medicine is the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness.

## Complementary/alternative medicine (CAM)

The terms "complementary medicine" or "alternative medicine" are used interchangeably with traditional medicine in some countries. They refer to a broad set of health care practices that are not part of that country's own tradition and are not integrated into the dominant health care system.

## Public Health Interventions

Public Health Intervention is defined as a set of actions which may include policy, regulatory initiatives, single strategy projects or multicomponent programmes intended to promote or protect health or prevent ill health in communities or populations. [17]

## Commercial Developers

A commercial developer of a health technology/technologies is defined as individual, a group of people or a company that develops, manufactures, markets or distributes a health technology/technologies.

## Digital Health Technology

Digital health technologies use computing platforms, connectivity, software, and sensors for health care and related uses, intended for use as a medical product, in a medical product, as companion diagnostics, or as an adjunct to other medical products (devices, drugs, and biologics).[18]

## Disinvestment

Disinvestment relates to the processes of withdrawing health resources from any existing health care practices, procedures, technologies or pharmaceuticals that are deemed to deliver little or no health gain for their cost, and thus do not represent efficient health resource allocation.[19]

## Obsolete Technology

Technologies that have been superseded by other technologies or demonstrated to be ineffective, harmful or not useful.

# ANNEXES

**MAHTAS**
MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION

# PHARMACEUTICAL INFORMATION PROFORMA

Instruction notes:

1.  This form is intended to be used for pharmaceutical only.
2.  For other medical technologies, please use form PTK-Bor-14 (Medical Technologies Information Proforma)
3.  Please fill in the form as complete as possible

| Company Detail | | Contact Person Detail | |
|---|---|---|---|
| Date: | | Name: | |
| Company name: | | Position in company: | |
| Address: | | Email: | |
| | | Telephone: | |

| Technology description | | Confidential Information<br><br>Tick (√) where applicable |
|---|---|---|
| Technology/product name | | |
| Generic/ active pharmaceutical ingredient name | | |
| Patient group/indication including stage of disease and targeted patient-sub-groups (e.g.: advanced or metastatic disease in women with HER-2 positive breast cancer) | | |
| Place in the treatment pathway (e.g.: first or second line) | | |
| Brief description of the technology | | |
| Is it a new drug? | | |
| Intended use of technology (e.g.: prevention, treatment) | | |
| Route of administration (e.g.: oral or intravenous) | | |
| Treatment schedule &/or combination (e.g.: once a day, 28 days cycle) | | |
| Is the new technology planned to be additional to current therapy or used as a substitute? | | |
| Is the technology already available for a different patient group? | | |
| Who are the commercial developers &/or distributors? | | |

| Stage of development, availability, and licensing and launch plans | | Confidential Information<br><br>Tick (√) where applicable |
|---|---|---|
| Does the technology have the marketing authorization in a different patient group/s | | |
| When do you anticipate submitting a local marketing authorization application? | | |
| Is your product a designated orphan drug in any countries? Please state | | |
| Is your product available, licensed or launched in other countries? If not, do you have any marketing plans in other countries? | | |
| **Current alternatives** | | |
| What is the current treatment or management options for the patient group? | | |
| What advantages does the new technology have over current options? (e.g.: fewer adverse effects, shorter length of stay etc) | | |
| **Costs** | | |
| What is the cost per treatment or per unit of administration &/or estimated cost over a specific time period. | | |
| Are the additional cost related to your product? (e.g.: days in hospital, monitoring tests) | | |
| What is the cost of current treatment or other management options for this patient? | | |
| **Clinical need, burden of disease** | | Confidential Information<br><br>Tick (√) where applicable |
| What is the burden of disease in Malaysia? (e.g.: morbidity, service use & quality of life) | | |
| Estimated potential uptake of the technology amongst the relevant patient group or healthcare professionals. | | |
| **Research Evidence** | | Confidential Information<br><br>Tick (√) where applicable |

| **Published clinical trials**<br>Please list references, and attach copies of relevant publications and abstracts from publications or conferences that are not readily available on the internet. | | |
|---|---|---|
| • trial number/name | | |
| • location | | |
| • trial funders, sponsors | | |
| • study design | | |
| • inclusion and exclusion criteria | | |
| • treatment arms | | |
| • length of follow up | | |
| • primary and secondary endpoints | | |
| • numbers of patients in trial | | |
| • start date | | |
| • date of full patient accrual | | |
| • date of interim analysis | | |
| • date of final analysis or publication | | |
| • results | | |
| **Unpublished completed clinical trials**<br>Please give details of the following, &/or attach copies of protocols, press releases and abstracts | | |
| • trial number/name | | |
| • location | | |
| • trial funders, sponsors | | |
| • study design | | |
| • inclusion and exclusion criteria | | |
| • treatment arms | | |
| • length of follow up | | |
| • primary and secondary endpoints | | |
| • numbers of patients in trial | | |
| • start date | | |
| • date of full patient accrual | | |
| • date of interim analysis | | |
| • date of final analysis or publication | | |
| • results | | |
| **Ongoing clinical trials**<br>Please give details of the following attaching copies of protocols, press releases and abstracts. | | |
| • trial number/name | | |
| • location | | |
| • trial funders, sponsors | | |
| • study design | | |
| • inclusion and exclusion criteria | | |
| • treatment arms | | |
| • length of follow up | | |
| • primary and secondary endpoints | | |
| • planned patients number | | |
| • start date | | |
| • anticipated date of full patient accrual | | |

| | | |
|---|---|---|
| • date of interim analysis | | |
| • expected date of final analysis or publication | | |
| • expected results | | |

## What is the potential or intended impact of the technology (speculative)?

Please tick at the relevant boxes.

| Patients | | |
|---|---|---|
| ☐ Reduced morbidity | ☐ Reduced mortality or increased survival | ☐ Improved quality of life for patients or carers |
| ☐ Other, please specify: | | |
| **Services** | | |
| ☐ Increased use e.g. length of stay, out-patient visits | ☐ Service re-organization required | ☐ Staff or training needs |
| ☐ Decreased use e.g. shorter length of stay, reduced referrals | ☐ Services – other, please specify: | |
| **Costs** | | |
| ☐ Increased unit cost compared to alternative | ☐ Increased – more patients coming for treatment | ☐ Increased – capital investment needed |
| ☐ New costs, please specify: | ☐ Savings, please specify: | ☐ Other, please specify: |

# MEDICAL TECHNOLOGIES INFORMATION PROFORMA

*Please use this proforma for medical devices, regenerative technologies, biologics, intervention/procedures, diagn ostics, traditional and complementary medicines.

| Company detail | | Contact Person Detail | |
|---|---|---|---|
| Date: | | Name: | |
| Company name: | | Position in company: | |
| Address: | | Email: | |
| | | Telephone: | |

| Technology description | | Confidential Information<br><br>Tick (√) where applicable |
|---|---|---|
| Name of the device/product<br>Please list any brand name/s, synonyms | | |
| Who are the commercial developer/s &/or distributors (if different)? | | |
| Patient group &/or indication<br>Please include stage of disease and targeted patient sub-groups (including sex, age-range etc) | | |
| Brief description of the device (2 paragraphs)<br>i.e. what it is and how it works | | |
| What is the intended use of the device?<br>e.g. prevention, treatment, rehabilitation | | |
| What is innovative about the device? | | |
| What advantages does the device have over current options?<br>e.g. ease of use compared to current options, non or less invasive, fewer adverse effects, shorter length of stay in hospital, fewer infections | | |
| Is the device already available for a different patient group? | | |

| Stage of development, availability and launch plans | | Confidential Information<br><br>Tick (√) where applicable |
|---|---|---|
| Date of CE mark/ FDA/TGA approval | | |
| If not yet CE marked or FDA/TGA approved, when is this anticipated? e.g. Q3 2014 | | |
| **Date of *actual* or *planned* launches:** | | |
| Malaysia – research use | | |
| Malaysia – clinical use: private | | |
| Malaysia – clinical use: government facilities | | |
| Is it available or launch in other countries? | | |
| **Research evidence** | | |
| **Published clinical trials** Please list references of relevant publications and abstracts from conferences | | |
| **Unpublished completed clinical trial** Please provide brief details &/or web links/trial names/codes for any unpublished completed trials | | |
| **Ongoing clinical trials** Please provide brief details &/or web links/trial names/codes for any unpublished completed trials | | |
| **Possible impact** | | |
| Likely impact of this technology in terms of **patient benefits** (please quantify where possible), e.g. increased effectiveness in meeting outcomes, safety etc | | |
| Likely impact of this technology in terms of **system benefits** to the health service (please quantify which possible), e.g. price, net cost savings, training needs etc. | | |

MAHTAS
MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION

## HORIZON SCANNING IDENTIFICATION FORM

| Date/Week: | |
|---|---|
| Source: | |

**Technology Identified:**

| Source | Name of Technology | IDENTIFICATION CRITERIA | | |
|---|---|---|---|---|
| | | Indication/Diseases* | Innovation | | |
| | | | Novel | Increment | New indication |
| | | | | | |

*Priority for high burden diseases according to national priority (ie: Diabetes, Hypertension, IHD, dengue, TB, cancer, emerging diseases)

By,

**MAHTAS**
MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION

## HORIZON SCANNING FILTRATION FORM       **No. :** [        ]

**Technology name:** [                                    ]

**Innovation:**

☐ New

☐ Old with novel approach *(existing technology being used for a new indication/patient group)*

☐ Incremental *(significant innovation of an existing technology)*

Other: _____

**Type of technology:**

☐ Medical device                    ☐ Biologic

☐ Diagnostic                          ☐ Intervention/procedure

☐ Regenerative technology       ☐ Pharmaceutical

☐ Traditional & Complementary Medicine       ☐ Public Health Intervention

☐ Digital Health Technology

**Manufacturer/developer/company/owner:**

[                                                                    ]

**Time to availability:** *expected to be launched within 24 months or launched within 2-3 months but limited diffusion)*

- **Stage of diffusion:**

☐ Available but not fully diffused

☐ In clinical trials (phase: _____)

☐ Pre-registration ( _____ )

☐ Licensed ( _____ )

☐ Other, *please specify* ( _____)

- **CE marking/US FDA/TGA or equivalent regulatory approval:**
  *(please mark which applicable)*

  ☐ Yes (Date:                    )        ☐ No

- **Launching plan:**
  _____

**Patient group/indication:** *(including stage of disease and targeted patient sub-groups, if any)*

| |
|---|
| |

**Brief description of the technology** *(i.e. what is it and how it works)***:**

| |
|---|
| |

**Source of information:**        ☐ MaHTAS team: _____

☐ Company: _____

☐ Expert informants: _____

**References:**

| |
|---|
| |

**For Prioritisation:**    ☐ **Yes**              ☐ **No**

| |
|---|
| |

**HORIZON SCANNING PRIORITISATION FORM**

| Date | |
|---|---|
| **No.** | |
| **Category** (Pharmaceutical /Other medical technologies) | |

| Technology ID | |
|---|---|
| Technology Name | |
| Technology Indication | |

**Please score on a scale of 1 (not important) to 5 (very important) for the sub-criteria below. Weightage of the scores are as indicated.**

| Criteria | Sub-criteria | Explanation | Score |
|---|---|---|---|
| **1. Innovativeness** **(Please tick ( ✔ ) one appropriate option only)** | **Novel** | Completely new (15 marks) | |
| | **Incremental** | Incremental improvement of the existing technology (10 marks) | |
| | **New indication** | New indication of an existing technology (5 marks) | |
| | **Additional 5 marks for local innovation** | | |
| **2. Population/ end-user** | **Disease burden** *(20 marks)* | The impact of the disease in terms of number of people affected, morbidity, mortality and other indicators. (**Higher priority for diseases with higher burden**) | |
| | **Current options for patients** *(10 marks)* | No available technology for this specific indication  If other treatment regimen available for this specific indication will the technology - replace the current treatment - or is it an add-on | |

| | | | |
|---|---|---|---|
| | | *(Higher priority for novel technologies and if there is no treatment regimen available)* | |
| **3. Potential impact of technology** | **Efficacy** *(20 marks)* | Efficacy in term of reducing morbidity, mortality, improving quality of life, improving diagnosis<br>Comparison with current treatment<br><br>*(Higher priority for technologies that may reduce morbidity, mortality, improve quality of life and diagnosis)* | |
| | **Cost/Cost effectiveness** *(20 marks)* | Such as increase cost or savings, large capital outlay, direct and indirect costs for patients and society<br><br>*(Higher priority for expensive technologies)* | |
| | **Societal or ethical** *(5 marks)* | *Societal reaction or acceptability towards the technology, ethical issues that may surface*<br><br>*(Higher priority for technologies with higher impact to the society or ethics)* | |
| | **Safety/adverse events** *(10 marks)* | *Invasiveness of the technology and the associated adverse events*<br><br>*(Higher priority for technologies with higher safety risk)* | |
| | | **Total Score** | |

**Decision:  Prioritised**          ☐

**Not prioritised**          ☐

**Note: _____**

**MAHTAS**
MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION

**TERHAD**

| **TechScan** Horizon Scanning | **Report No.: 000/Year** |
|---|---|

# TITLE

*Keywords:*

## SUMMARY OF TECHNOLOGY

Briefly on:
- The technology (what is it, how it works)
- Related (patient group), disease burden
- The developer
- Current stage of development
- Photo of the technology (if available)

## INNOVATIVENESS

- Novel, completely new
- Incremental improvement of the existing technology
- New indication of an existing technology

## DISEASE BURDEN

## CURRENT OPTIONS FOR PATIENTS

## POTENTIAL IMPACT OF TECHNOLOGY

- a. Clinical Impact - mortality, morbidity, quality of life, diagnosis
- b. Cost
- c. Organizational Issue- services, infrastructure, human resources
- d. Safety

## CONCLUSION

## EVIDENCE

- List of studies conducted on the technology (published papers / abstracts / unpublished paper / ongoing studies / conference paper presentation)
- Based on available evidence up to (date)

## REFERENCES

- Information from – e.g., from company, time-limited internet search
- Modified Vancouver method

Prepared by:

Reviewed by:

**TERHAD**

| **TechBrief Horizon Scanning** | Report No.: 000/Year |
|---|---|

## TITLE

### EXECUTIVE SUMMARY

- Short summary of report

*Keywords:*

### INTRODUCTION

Briefly on the technology and the related disease

### THE TECHNOLOGY

- Photo of the technology (if available
- What is it (the technology)?
- Type of technology
- How does it work / mechanism of action?
- What is the expected outcome?
- Who is the developer?
- In what the current stage of development?
- What is the regulatory status/approval status?

*Pharmaceutical
- What is it (the technology)?
- What is its place in the treatment pathway (e.g. first line, second lines)?
- What class of drug or pharmacological action of this product?
- Is it a new class of drug for the patient group?
- What other indication is the product licensed for?
- What is the route of administration? (e.g., oral, subcutaneous, intravenous (short or infusion)?
- What is/are the treatment schedule and/or combination (e.g., once a day, twice a day, day 1 - 5 in a 28 days' cycle)?

### PATIENT GROUP AND INDICATION

- Intended to be used in which group of patients?
- What is the clinical need and burden of the disease?

### CURRENT PRACTICE

- What is the current practice/existing technology for the disease/patient group?
- Compare existing technology with advantages/benefits of the new technology

### SAFETY AND EFFICACY

Evidence on safety and efficacy

## ESTIMATED COST

Estimate the cost of the technology
If cost not available, report cost of similar technology

## OTHER ISSUES

- Organisational
- Ethical

## POTENTIAL IMPACT

- Clinical - mortality, morbidity, quality of life, diagnosis
- Costs
- Organisation - health services, infrastructure, human resources
- Social, ethical, legal concerns

## REFERENCES

- Information from e.g., company, time- limited internet search
- Modified Vancouver method

Prepared by:

Reviewed by:

**MAHTAS**
MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION

**TERHAD**

| **Horizon Scanning Report** | **Report No.:  000/Year** |
|---|---|

# TITLE

## EXECUTIVE SUMMARY

- Short summary of report

*Keywords:*

## INTRODUCTION

- Objectives
- Clinical Need and Burden of Disease
- Current Clinical Practice

## METHOD

- Search Strategy
- Inclusion Criteria
- Contacting developers
- Clinical Expert and Patient Consultation

## RESULTS

Number of technologies identified

## OVERVIEW OF FINDINGS

- Technology 1
- Technology 2
- Technology 3

## DISCUSSION AND CONCLUSION

## REFERENCES

- Information from e.g., company, time- limited internet search
- Modified Vancouver method

Prepared by:

Reviewed by:

**Disclosure:** The author of this report has no competing interest in this subject and the preparation of this report is totally funded by the Ministry of Health, Malaysia.

**Disclaimer:** Horizon Scanning Report is prepared based on information available at the time of research and a limited literature, It is not a definitive statement on the safely, effectiveness or cost effectiveness of the health technology covered.
Additionally, other relevant scientific findings may have been reported since completion of this report.

Horizon Scanning Unit, MaHTAS,
Medical Development Division,
Ministry of Health, Malaysia

Email: horizonscanningunit.cptk@moh.gov.my
Web: http://www.moh.gov.my

MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION

## PHARMACEUTICAL - SEARCH RECORD

| ID/No. | |
|---|---|
| Date search record started | |
| Date output allocated to author | |

| Technology ID | |
|---|---|
| Technology Name | |
| Technology Indication | |
| Company | |

### Commercial Developer Contact

| Contact Name | |
|---|---|
| No. Tel | |
| Email | |
| Received additional document / information | |

# 1. TECHNOLOGY

| Technology description, stage of development, press release etc | Date | Search criteria[a] | Notes[b] | N/A (tick √) |
|---|---|---|---|---|
| **Company Websites** | | | | |
| Technology name (inc codes, etc), background, latest trial info etc | | | | |
| **Google** | | | | |
| Consider using advanced search (limit to search to last year if appropriate) | | | | |
| **Drug-specific** | | | | |
| **Pharmaprojects** | | | | |
| Drug name | | | | |
| **Adis** | | | | |
| http://bi.adisinsight.com | | | | |
| Drug name | | | | |
| **Electronic medicines compendium (eMC)** | | | | |
| Licensed drugs | | | | |
| http://www.medicines.org.uk | | | | |
| **Tertiary Sources & Other HTA Agencies** | | | | |
| **The Cochrane Library** | | | | |
| Systematic reviews, clinical trials, publications | | | | |
| http://www.cochranelibrary.com/ | | | | |
| **Centre for Reviews and Dissemination – database HTA** | | | | |
| http://www.crd.york.ac.uk/crdweb | | | | |
| **International HealthTechScan** | | | | |
| http://www.euroscan.org | | | | |
| **CADTH** | | | | |
| http://www.cadth.ca | | | | |

[a] E.g Technology name, disease name, years/quarters, terms, etc
[b] E.g File name, hits, search results

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## 2. GOVERNMENT PRIORITY AREA & RELEVANT GUIDANCE

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **National Health Morbidity Survey (NHMS) Malaysia** https://iku.gov.my/nhms | | | | |
| **Department of Health National Services Frameworks and Health and Social Care topics** http://www.nhs.uk/nhsengland/NSF/pages/Nationalserviceframeworks.aspx | | | | |
| **National Commissioning Group** http://www.specialisedservices.nhs.uk/index.php/key-documents/ - NCG policies and publications e.g. annual report also lists regionally commissioned designated services set | | | | |
| **Relevant guidance** | | | | |
| **NHS Evidence** Health information sources – guidance http://www.evidence.nhs.uk/ | | | | |
| **Scottish Intercollegiate Guidelines Network** http://www.sign.ac.uk/ | | | | |

## 3. CLINICAL BACKGROUND & PATIENT GROUP SIZE

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **Also useful for patient group size; mortality; and current treatments/tests (see also Section 4 below)** | | | | |
| **NIHR HSC briefings** Previous and in preparation (see tech. db; progress list or topic allocations list on J drive) | | | | |
| **NICE guidance – technology appraisals, clinical guidelines and interventional procedure guidance; NICE Pathways; NICE Quality Standards** Published, in development and proposed (scoping documents) http://www.nice.org.uk NB also consider any associated guidance on implementation, e.g. costing report, which may contain additional information on the likely patient group size in order to inform an economic model | | | | |
| **TRIP** www.tripdatabase.com | | | | |
| **UK HTA programme** | | | | |

Reports and projects
http://www.ncchta.org/

**Orphanet**
EU info on rare diseases
http://www.orpha.net/consor/cgi-bin/index.php

**Specifically for patient group size and mortality data:**
Make sure you have the correct ICD code(s) e.g. for HES/mortality data – if in doubt ask

**Clinical Evidence** (book or electronic access)
http://www.clinicalevidence.bmj.com/ceweb/servlet/LoginServlet
Require membership login

**Hospital Episode Statistics** (need ICD or OPCS code)
HES data: http://www.hesonline.nhs.uk/

**The Association of Public Health Observatories**
Useful information on a number of conditions, including prevalence models for Cancer, CVD, CKD, COPD, CHD, Dementia, Diabetes, Hypertension, Mental Illness, Stroke (NB not all up to date)
http://www.apho.org.uk/default.aspx
http://www.apho.org.uk/resource/view.aspx?RID=48308

**NHS Indicator Portal**
A wide-ranging collection of over 1,000 indicators designed to provide a comprehensive overview of population health at a national, regional and local level. Also: GP Practice data, Local Basket of Inequalities Indicators, NHS Outcomes Framework, Summary Hospital-level Mortality Data.
https://indicators.ic.nhs.uk/webview/

**Additional sources used by author (optional):**
*Remember to reference clearly in the briefing*

## 4. REGULATION & LICENSING

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **Reports on same technology that is licensed for another indication** | | | | |
| **National Pharmaceutical Regulatory Agency (NPRA), Ministry of Health Malaysia**<br>https://npra.gov.my/index.php/en/ | | | | |
| **European Medicines Agency (EMA)**<br>http://www.ema.europa.eu/en | | | | |

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| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **U.S. Food and Drug Administration (FDA)**<br>http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm<br>Search FDA drugs database and whole website, sometimes get extra information this way. | | | | |
| **FDA orphan drug list**<br>Details of orphan drug application<br>http://www.accessdata.fda.gov/scripts/opdlisting/oopd/index.cfm | | | | |

## 5. EFFICACY & SAFETY

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| Clinical trials - ongoing; completed and published (e.g. abstract, journal article etc.) | | | | |
| **ClinicalTrials.gov**<br>http://www.clinicaltrials.gov | | | | |
| **WHO International Clinical Trials Registry**<br>http://www.who.int/trialsearch/Default.aspx | | | | |
| **EU Clinical Trials Register**<br>https://www.clinicaltrialsregister.eu/ | | | | |
| **ISRCTN Registry**<br>http://www.controlled-trials.com/mrct/ | | | | |
| **PROSPERO**<br>http://www.crd.york.ac.uk/PROSPERO/<br>International open-access database of ongoing systematic reviews hosted by CRD, University of York | | | | |
| **Primary research:**<br>*Epidemiology and number of trials published* | | | | |
| **PubMed:**<br>www.pubmed.ncbi.nlm.nih.gov | | | | |
| **Medline:**<br>https://ovidsp.dc2.ovid.com (Require membership login) | | | | |

*Instructions for Medline searching:

- Mark searches as human (don't limit to English as there may be English abstracts for foreign language papers)
- Search all disease names using MeSH (exploded) and KEYWORDS and technology names KEYWORDS as appropriate
- Combine results using OR and select all subheadings (If there are lots of hits – reduce to more recent publications)
- Limit to clinical trials by selecting appropriate terms for clinical trials of interest
- Combine searches of disease and drug name using AND

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## 6. COST

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **BNF & BNF for Children**<br>Paper copy in G27 and website: www.medicinescomplete.com/#/ (need to register for own login)<br>Or **Drug Tariff** http://www.nhsbsa.nhs.uk/pharmacies-gp-practices-and-appliance-contractors/drug-tariff | | | | |

## 7. SPECIFIC DISEASE AREAS

Scientific meeting abstracts and patient groups; for other disease areas not listed below, attempt to identify & search the most relevant conference, association etc.

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **ONCOLOGY** | | | | |
| **ASCO (American Society for Clinical Oncology)**<br>http://www.asco.org | | | | |
| **ESMO (European Society for Medical Oncology)**<br>http://www.esmo.org | | | | |
| **European Organisation for Research and Treatment of Cancer**<br>http://www.eortc.org/ - go to 'Research Tools' - Clinical Trials Database | | | | |
| **National Cancer Institute**<br>http://www.cancer.gov/about-cancer/treatment/clinical-trials | | | | |
| **Southwest Oncology Group - SWOG**<br>http://swog.org | | | | |
| **Eastern Cooperative Oncology Group - ECOG**<br>https://ds.dfci.harvard.edu/research/cancer-research/<br>https://ecog-acrin.org | | | | |
| **National Surgical Adjuvant Breast and Bowel Project - NSABP**<br>http://www.nsabp.pitt.edu | | | | |
| **San Antonio Breast Cancer Symposium**<br>http://www.sabcs.org | | | | |
| **Cancer Research UK**<br>Cancer information, stats and trials<br>http://info.cancerresearchuk.org/ | | | | |
| **CancerBackup (Now on Macmillan cancer support website)** | | | | |

| | | | |
|---|---|---|---|
| http://www.macmillan.org.uk/Home.aspx | | | |
| **Blood Cancer** | | | |
| http://www.bloodcancer.org.uk/ | | | |
| **National Cancer Intelligence Network** | | | |
| lead national registries | | | |
| http://www.ncin.org.uk/collecting_and_using_data/ | | | |
| **CARDIOLOGY & CARDIOVASCULAR DISEASE** | | | |
| **Cardiology Trials** | | | |
| http://www.cardiologytrials.org/ | | | |
| **British Heart Foundation For Professionals** | | | |
| Statistics | | | |
| https://www.bhf.org.uk/for-professionals/healthcare-professionals/data-and-statistics | | | |
| **Stroke trials** | | | |
| http://www.strokecenter.org/trials/ | | | |
| **American College of Cardiology** | | | |
| www.acc.org - search latest conference on left and/or "cardiosource" | | | |
| **Medscape – Cardiology** | | | |
| www.medscape.com/cardiologyhome - search "medscape" and/or "drug reference" | | | |
| **European Society of Cardiology Annual Congress** | | | |
| http://www.escardio.org | | | |
| **DIABETES** | | | |
| **Diabetes UK** | | | |
| http://www.diabetes.org.uk/ | | | |
| **American Diabetes Association** | | | |
| http://www.diabetes.org | | | |
| **OTHER SPECIALTIES** | | | |
| **American Society of Hematology (ASH)** | | | |
| http://www.hematology.org// | | | |
| **European Hematology Association (EHA)** | | | |
| www.ehaweb.org | | | |
| **European ALLIANCE OF ASSOCIATIONS FOR Rheumatology (EULAR)** | | | |
| http://www.eular.org | | | |
| **American Association for the Study of liver Diseases (AASLD)** | | | |
| www.aasld.org | | | |

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**European Association for the Study of Liver Diseases (EASL)**
www.easl.eu

## OPTIONAL SOURCES

| Clinical background & epidemiology: | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **Merck Manual**<br>https://www.merck.com/home | | | | |
| **ASERNIP and ASERNIP-S NETS**<br>Surgical procedures only<br>http://www.surgeons.org/research-audit/Resources | | | | |
| **Measuring the Use of NICE Guidance**<br>https://www.nice.org.uk/about/what-we-do/into-practice/measuring-the-uptake-of-nice-guidance | | | | |
| **Google**<br>http://www.google.com/ | | | | |
| **GOOGLE – SCHOLAR**<br>http://scholar.google.com/<br>Specific article – authors last name then keywords in quotation marks | | | | |
| **NHS Evidence**<br>http://www.evidence.nhs.uk/ | | | | |
| **NHS Choices**<br>http://www.nhs.uk/ | | | | |
| **Patient UK**<br>https://www.patient.info | | | | |
| **National Cancer Registration and Analysis Service (NCRAS)**<br>Useful links to other relevant cancer –related websites<br>http://www.ncin.org.uk/home | | | | |
| **The Association of Public Health Observatories**<br>Useful information on public health topics.<br>http://www.apho.org.uk/ | | | | |
| **Lab tests online**<br>Information on disease area and currently available tests<br>http://www.labtestsonline.org/ | | | | |

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| | | | |
|---|---|---|---|
| **Census data**<br>Key statistics tables - see list of tables on left, e.g. KS01. Put the table you want into the search box<br>https://www.ons.gov.uk/census | | | |
| **Public Health England**<br>https://www.gov.uk/government/organisations/public-health-england | | | |
| **eMedicine** (need to register for free access)<br>US data<br>https://emedicine.com.medscape.com | | | |
| **National Screening Programmes**<br>http://www.nhs.uk/conditions/nhs-screening/ | | | |
| **Patient group size & mortality data:** | | | |
| **Compendium of Population Health Indicators**<br>NHS Information Centre – a wide range of information on individual conditions, primary care, secondary care, Public Health and inequalities<br>https://indicators.ic.nhs.uk/webview/ | | | |
| **Quality Outcomes Framework**<br>GP data<br>https://digital.nhs.uk/services/quality-and-outcomes-framework-qof-online-database | | | |
| **Prescribing data - England**<br>Primary and secondary care prescribing<br>https://www.nhsbsa.nhs.uk/prescription-data/prescribing-data | | | |
| **Health Statistics - Wales**<br>http://www.healthstats.nsw.gov.au/ | | | |
| **Patient groups:**<br>*For rare diseases where more information is still needed*<br>*If used as source, reference clearly in briefing* | | | |
| **Contact a Family**<br>https://contact.org.uk/ | | | |
| **National Organisation for Rare Disorders**<br>http://www.rarediseases.org | | | |
| **UK & International HTA & drug info:** | | | |
| **ECRI** | | | |

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| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| http://www.ecri.org - click on 'members' | | | | |
| **Clinical background & epidemiology:** | | | | |
| **CADTH, Canada (Diabetes Library)** https://www.cadth.ca/evidence-bundles/evidence-diabetes-management | | | | |
| **Australia and New Zealand Horizon Scanning Network (ANZHSN)** **Devices and diagnostics** http://www.horizonscanning.gov.au/internet/horizon/publishing.nsf/Content/process-2 | | | | |
| **The Institute of Cancer Research** http://www.icr.ac.uk/research/ | | | | |
| **Licensing** | | | | |
| **Scottish Medicines Consortium** http://www.scottishmedicines.org/ - go to medicines or work programme | | | | |
| **Costs** | | | | |
| **NHS Reference Costs (Healthcare Resource Groups - HRGs) -** Need to be used in conjunction with the OPCS/ICD codes. HRGs are standard groupings of clinically similar treatments which use common levels of healthcare resource: https://www.gov.uk/government/collections/nhs-reference-costs | | | | |

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **Any additional sources used by author (optional):** *Remember to reference clearly in the briefing* | | | | |

**Annex 10**
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MAHTAS
MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION

## MEDICAL TECHNOLOGY - SEARCH RECORD

| ID/No. | |
|---|---|
| Date search record started | |
| Date output allocated to author | |

| Technology ID | |
|---|---|
| Technology Name | |
| Technology Indication | |
| Company | |

### Commercial Developer Contact

| Contact Name | |
|---|---|
| No. Tel | |
| Email | |
| Received additional document / information | |

## 1. TECHNOLOGY

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **Company Websites**<br>Technology name (inc codes, etc), background, latest trial info etc | | | | |
| **Google**<br>Consider using advanced search (limit to search to last year if appropriate) | | | | |
| **Tertiary Sources & Other HTA Agencies** | | | | |
| **ASERNIP and ASERNIP-S NETS**<br>Surgical procedures only<br>http://www.surgeons.org/research-audit/Resources | | | | |
| **TRIP**<br>www.tripdatabase.com | | | | |
| **ECRI**<br>http://www.ecri.org<br>Require membership login | | | | |
| **International HealthTechScan**<br>http://www.euroscan.org | | | | |
| **CADTH**<br>http://www.cadth.ca | | | | |
| **HealthPACT – Formerly Australia and New Zealand Horizon Scanning Network (ANZHSN)**<br>Devices and diagnostics **assessed after 2011**<br>https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/speciality-diagnostics-therapeutics/health-technology-program/healthpact<br><br>Devices and diagnostics **assessed before 2011**<br>http://www.horizonscanning.gov.au/internet/horizon/publishing.nsf/Content/technologies-assessed-lp-2 | | | | |
| **NIHR Evaluation, Trials and Studies Coordinating Center (NETSCC), University of Southampton**<br>https://www.southampton.ac.uk/netscc/index.page | | | | |
| **NICE guidance**<br>Under 'find guidance' go to 'guidance by type' and search: | | | | |

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Technology appraisals, clinical guidance, interventional procedures guidance, medical technologies guidance, diagnostic guidance – look at published, in development and proposed etc
https://nice.org.uk/guidance

## 2. EVIDENCE

| Clinical trials – ongoing; completed and published (e.g. abstract, journal article, etc) | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **ClinicalTrials.gov**<br>http://www.clinicaltrials.gov | | | | |
| **WHO International Clinical Trials Registry Platform (ICTRP)**<br>http://www.who.int/clinical-trials-registry-platform | | | | |
| **ISRCTN Registry**<br>http://www.controlled-trials.com/mrct | | | | |
| **PROSPERO**<br>http://www.crd.york.ac.uk/PROSPERO<br>International open-access database of ongoing systematic reviews hosted by CRD, University of York | | | | |
| **EU Clinical Trials Register**<br>http://www.clinicaltrialsregister.eu | | | | |
| **The Cochrane Library**<br>http://www.cochrane.org – select the blue Cochrane Library button | | | | |
| **The Institute of Cancer Research (if a cancer topic)**<br>Go to 'Our Research'<br>http://www.icr.ac.uk | | | | |
| **PubMed, Medline & Medline in Progress, & EMBASE**<br>http://www.elibrary.bham.ac.uk – Require membership login<br>**OR** | | | | |
| **PubMed only**<br>http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed | | | | |
| **GOOGLE SCHOLAR**<br>http://scholar.google.com/ | | | | |

## 3. GOVERNMENT PRIORITY AREA & RELEVANT GUIDANCE

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| **National Health Morbidity Survey (NHMS) Malaysia** https://iku.gov.my/nhms | | | | |
| **Department of Health National Services Frameworks and Health and Social Care topics** http://www.nhs.uk/nhsengland/NSF/pages/Nationalserviceframeworks.aspx | | | | |
| **National Commissioning Group** http://www.specialisedservices.nhs.uk/index.php/key-documents/ - NCG policies and publications e.g. annual report also lists regionally commissioned designated services set | | | | |
| **Relevant guidance** | | | | |
| **NHS Evidence** Health information sources – guidance http://www.evidence.nhs.uk/ | | | | |
| **Scottish Intercollegiate Guidelines Network** http://www.sign.ac.uk/ Do not rely on search engine – use the Guidelines button on left hand side | | | | |

## 4. REGULATION & LICENSING

| | Date | Search criteria | Notes | N/A (tick √) |
|---|---|---|---|---|
| Reports on same technology that is licensed for another indication | | | | |
| **Medical Device Authority (MDA), Ministry of Health Malaysia** https://portal.mda.gov.my/ | | | | |
| **U.S. Food and Drug Administration (FDA)** https://www.fda.gov/drugs/development-approval-process-drugs/drug-approvals-and-databases | | | | |
| Search FDA drugs database and whole website, sometimes get extra information this way. | | | | |

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## EXTERNAL REVIEWER FEEDBACK FORM (HORIZON SCANNING)

The purpose of external review process is to provide a broader and independent perspective on the documents prepared based on the best current available evidence at the time of development, thus improving its quality before it is being finalised.

**Document title**

☐ TechBrief report
☐ TechScan report

**Instruction.**

Please complete all the sections (1, 2 and 3).

| 1. | **REVIEWER'S DETAIL** (Please complete) |
|----|------------------------------------------|

Name : ………………………………………………………………………………………………
Designation : ………………………………………………………………………………………
Organisation : ……………………………………………………………………………………

| 2. | **REVIEW OF TECHNICAL/SCIENTIFIC CONTENT** (Please tick (√) **ONE** of the following) |
|----|------------------------------------------|

**a)  Title**
The title is clear and appropriate                         ☐ Yes            ☐ No

**b)  Summary**
Does the summary appropriately summarised the results?     ☐ Yes            ☐ No

**c)  Introduction**
Is the problem statement clearly stated?                   ☐ Yes            ☐ No

**d)  Description of technology**
Is the technology clearly described in terms of how it works?   ☐ Yes       ☐ No

**e)  Evidence (safety, efficacy, cost, patient, service/organisation)**
Is the evidence clearly presented and scopes well-addressed?    ☐ Yes       ☐ No

**f)  Potential impact**
Is the potential impact supported by evidence?             ☐ Yes            ☐ No

**g)  Other comments**
(If any, please specify)……………………………………………………………………………………
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………
(You may provide separate attachment as required) ………………………………………………………

| 3. | **REVIEW OF OVERALL READABILITY** (Please tick (√) ONE of the following) |
|----|------------------------------------------|

**a)  This document has been written clearly and  comprehensible to the readers**

☐ Good          ☐ Fair          ☐ Poor

**b)  Comment**
(If any, please specify)  ………………………………………………………………………………………

Thank you for your cooperation.
Please return the completed form to: **Health Technology Asessment Section (MaHTAS)**
Medical Development Division, Ministry of Health Malaysia, Level 4, Blok E1, Parcel E, Presint 1,62590 Putrajaya
**Tel: 603-88831229 Fax:(603)-88831230 Email: horizonscanningunit.cptk@moh.gov.my**

MaHTAS

## MAHTAS HORIZON SCANNING USER FEEDBACK FORM

**Title of Horizon Scanning TechScan/TechBrief:**

---

### PERSONAL DETAILS

**Salutation**

**Name**                                    **Official contact number**

**Current position**                        **Mobile phone number (optional)**

**Current workplace**                       **Email**

---

### YOUR FEEDBACK

**1. How would you rate the report? [Please tick (√) one of the following]**

☐ Excellent    ☐ Good    ☐ Fair    ☐ Poor    ☐ Very poor

**2. What is the impact of this report? (Please choose all that apply)**

○ Use to develop policy/ decisions              ○ Use as reference material
○ Use in operational procedures/ practices      ○ Indication for further research
○ Use in guideline formulation                  ○ Change awareness or increase
○ Use in operational/ capital funding decision     understanding of the issue

○ Other (please specify) _____

*Additional comment(s):* _____
*(Kindly provide specific examples of use where possible). You can use separate paper for your comment(s).*

**3. Did the report meet your needs and expectation?**

○ Yes    ○ No

*Comment or suggestion for improvement (if any). You can use separate paper for your comment(s).*

_____
_____

---

*Please return the completed survey form to:*
***Health Technology Assessment Section (MaHTAS),***
***Medical Development Division,***
***Ministry of Health Malaysia,***
***Level 4, Block E1, Parcel E, Presint 1, 62590 Putrajaya.***
***Tel: 603-8883 1229***
***Email: evaluation.cptk@gmail.com***

**Alternatively, you can answer our survey on online platform by scanning the QR code**

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🅣 | **MaHTASMalaysia**

MINISTRY OF HEALTH MALAYSIA

## GUIDELINES ON INTERACTION WITH INDUSTRIES

1. MaHTAS Horizon Scanning Unit should in all respects remain entirely independent from industry, should act impartially and should not be influenced by social or business relations. Gifts and hospitality from industry should not be accepted.

2. Where there is a potential for a private interest to be relevant to the business of Horizon Scanning systems the relevant interests should be declared and recorded in the individual Horizon Scanning member's register. The register should be kept up to date, and available for scrutiny.

3. When somebody is providing information to the MaHTAS Horizon Scanning Unit, the information should be transparent and contain specific conflict of interest (CoI) declaration.

4. MaHTAS Horizon Scanning Unit recognises that some information supplied by industry is considered as 'commercial in confidence'. Confidential information received from industry will be handled according to the written policy for maintaining confidentiality.

5. MaHTAS Horizon Scanning Unit will maintain a neutral approach towards industry on the identification and prioritisation of technologies and to any assessment of impact undertaken.

6. The information provided by MaHTAS Horizon Scanning Unit in our assessment of impact should reflect accurately and critically (as from any other source) any information that has been provided by industry, should make reference to the source, and should not endorse any particular product or company.

7. Any assessments of technologies that contain information provided by industry and not generally available could be sent to the relevant industry contact for comment before publication. MaHTAS Horizon Scanning Unit will decide how to handle any comments returned.

8. The assessments of impact produced by MaHTAS Horizon Scanning Unit remain the responsibility of the MaHTAS Horizon Scanning Unit itself, and we have the full authority to decide how they will be published and distributed.

**MINISTRY OF HEALTH MALAYSIA**

**CONFIDENTIALITY STATEMENT**

The MaHTAS Horizon Scanning Unit, Ministry of Health Malaysia is funded by the Ministry of Health Malaysia (MOH) to provide key MOH policy-makers, research funders and research institutes with advance notice of health technologies and interventions that are likely to have a significant impact on the public health services in Malaysia.

Information held by the MaHTAS Horizon Scanning Unit is used to provide advice to national policy-makers responsible for evaluating and appraising new technologies and planning or supporting their introduction into the public health services.

The advice provided by the MaHTAS Horizon Scanning Unit may be in the form of verbal briefings, electronic updates, and/or written briefings. The information provided by the MaHTAS Horizon Scanning Unit may contain confidential and/or commercially sensitive information ("Confidential Information"); this may be shared with: MOH policy-makers, research institutes within MOH, Malaysian Investment Development Authority, Medical Device Authority, National Innovation Agency Malaysia, Malaysian Biotechnology Corporation, Ministry of Science, Technology and Innovation who may wish to contact the technology developer(s) for additional information about products in development.

1. The MaHTAS Horizon Scanning Unit acknowledges that information may be disclosed to it which is Confidential Information.

2. The MaHTAS Horizon Scanning Unit undertakes to:
   a. keep all Confidential Information strictly confidential;
   b. not use any Confidential Information for any purpose other than participating in the MaHTAS Horizon Scanning Unit's processes;
   c. restrict access to any Confidential Information to only those persons that need to know such information;
   d. not disclose any Confidential Information to any third party other than for the purposes outlined in the text above, and where the third party is fully aware of the Confidential Information and agrees to be bound by these undertakings.

3. The undertakings set out in paragraph 2 above shall not apply to the use or disclosure of information which:
   a. at or after the time of disclosure or acquisition is in the public domain; or
   b. was lawfully in a third party's possession prior to its disclosure by the MaHTAS Horizon Scanning Unit; or

c.  is required by a court or government agency, provided that the third party notifies the MaHTAS Horizon Scanning Unit in advance of such disclosure; or

d.  is approved for release by prior authorisation from the technology developer.

I, .............................................................................. hereby have read and fully understood the terms and conditions set forth above, and I am aware that all Horizon Scanning properties shall be considered as Private & Confidential.

.............................................
Name:
NRIC:
Date:

**DECLARATION OF COMPETING INTEREST**

Horizon Scanning of emerging health technologies is the systematic identification of new and emerging health technologies that have the potential to impact on health, health services, and/or society; and which might be considered for health technology assessment. The methods used can also identify health technologies that are becoming obsolete.

Horizon Scanning reports are important for the decision making process. Thus, it is important to ensure that the processes are done in a systematic and transparent method. Potential conflict of interest may occur among the heath technology assessors including analysts, expert panel, or other experts involved in reviewing the evidence and predicting the potential impact of the technology. A conflict of interest may be in any form such as financial or other interest that conflicts with one's contributions in an assessment group because it could impair that person's objectivity or could create an unfair advantage.

All the authors, experts panel appointed to assist in assessment of emerging health technologies and the Horizon Scanning Technical Advisory Committee (TAC) members are required to complete a declaration of competing interest detailing the sources of funding, and other possible conflicts of interest. An explicit statement regarding the above is made in the horizon scanning reports.

**DECLARATION OF COMPETING INTEREST\***

1.  Have you in the **last three years** accepted the following from any pharmaceutical and other medical technologies industries that may in any way gain or lose financially from the results of your work (in relation to assessment of this emerging health technologies):

    ▪   A fee for speaking?
    ▪   Fund support for research?
    ▪   Funding for publication?
    ▪   Consultancies?

    If so, please declare the occasion or event and the organisation that provided you with financial support.

| Organisation | Event |
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2.  Have you, during **last three years**, been employed by an organisation that may in any way gain or lose financially from the results or conclusion of this assessment?

    If so, please declare the organisation and the nature of your relationship with that organisation.

| Organisation | Event |
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3.  Do you have any competing financial interests such as investments or directorships? If so specify.

| Organisation | Interest |
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4.   Do you belong to a political party, special interest group or hold deep personal or religious convictions that may have affected what you have written and that readers should be aware of when reading your paper?

| **Organisation/personal beliefs that could be perceived as influencing your work** |
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5.   List the source(s) of funding for the assessment of this/these emerging technology/technologies

_____
_____
_____

Signature:   ……………………………………………………………………..

Name:   ………………………………………………………………………

Work place:   ………………………………………………………………………

Title of
HTA/TR/HS
that you   ……………………………………………………………………..
have   ……………………………………………………………………..
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Date
:   ……………………………………………………………………..

*I understand that this declaration will be retained by the Malaysian Health Technology Assessment Section (MaHTAS) Administrator and made available on inspection at MaHTAS, Ministry of Health Malaysia.*

*\*The Ministry of Health Malaysia requires all authors, expert panel and the TAC members to fill in this form.*

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