

## BIOMEDICAL & CLINICAL ENGINEERING

# Health Technology Assessment (HTA); Perspective of Medical Devices for Arab countries

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EGYPT

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**ISQua EEA surveyor for International healthcare accrediting bodies 2021-Present**  
**Temos Regional director for Jordan, KSA, Kuwait, Bahrain, Lebanon 2010- Present**  
**Temos International Senior assessor, Germany, 2010- Present**  
**Emirati International Accreditation (EIAC) Hospital Assessor, Dubai, 2021- Present**  
**Board and collaborate member of Global Clinical Eng. Alliance, USA, 2018- Present**  
**Chairman of the Board for Middle East Academy for Special Edu., Jordan, 2004- Present**  
**Member of the National HTA steering committee, Jordan 2010-Present**

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**Chairman (elected) for Temos Assessors Advisory Board - several terms 2012- 2021**  
**Vice Chairman, Board of Healthcare Sector, The Arab Trainers Union, Arab League, 2018-2021**  
**Board member (a founder) of Istiklal hospital, and Chairman of quality council, Jordan, 2000 -2021**  
**Chairman of Jordanian Special needs and rehab association, 2017- 2021**

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**Formerly before 2020: Reg.ME Director GE Healthcare-USA, BME director King Faisal Sp. Hospital-KSA,**  
**Program director Project Hope/USA/Egypt/China, Clinical Engineer Memorial Hospital, S. Bend, In,**

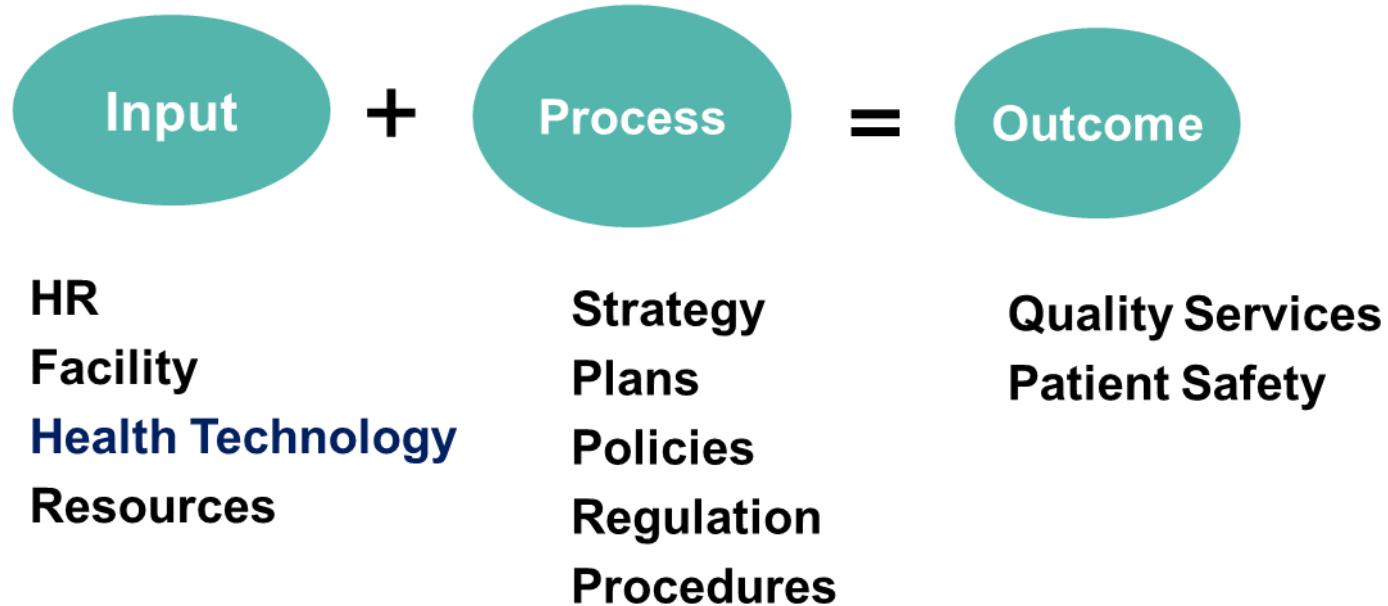
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**Ph.D., MBA, BSBE, Biomed Eng. and healthcare management/ Uni. of Illinois, Indiana, Washington**

### **International hospital experience:**

**Jordan, USA, UK, Germany, Greece, Turkey, Cyprus, KSA, Egypt, UAE, Bahrain, Kuwait, Qatar, Oman, Lebanon, Kenya, Uganda, Tanzania, Ghana, Thailand, China, South Korea, Malaysia, India**

# The Health Care System \*



**Satisfaction + Accreditations & Certifications = Excellence in Healthcare Services**

\* Adopted from WHO : World Health Report

Universally accepted definition of

## Designed to:

- Improve health
- Prevent, diagnose and provide long term and short term treatment

## Includes:

- Drugs, vaccines, and blood products
- Medical devices
- Medical and surgical procedures and knowledge associated with these



HTA refers to the **systematic evaluation of properties, effects, and/or impacts of health technology**. It is a multidisciplinary process to evaluate the social, economic, organizational and ethical issues of a health intervention or health technology. **The main purpose of conducting an assessment is to inform policy decision making.**

WHO HTA document 2011

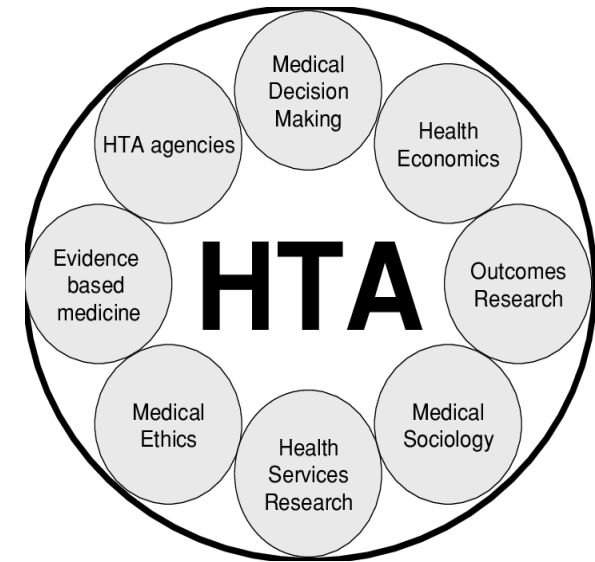
**The careful evaluation of a medical technology for evidence of its safety, efficacy, cost, cost-effectiveness and ethical and legal implications. It's a structured way to use and apply scarce resources.**

# What does HTA cover?

1. Pharmaceutical products
2. Medical devices
3. Medical, surgical and therapeutic procedures
4. Medical support and IT systems
5. Others include disease management and immunization programs

# Why HTA is necessary?

- Visibility of emerging Technologies
- High expenditure for Healthcare
- To rationalize and optimize healthcare
- The need for ethical information
- Expert opinion for healthcare decision makers
- Not to be dependent on Suppliers
- **To improve healthcare delivery services**



## Top 10 benefits of HTA?

1. Acquiring certain technology, updated information on medical questions, new technology etc
2. For innovative technologies – medical questions
3. Serve as an advisor to mgmt., clinicians and patients
4. Promote the use of technologies if recommended
5. Reducing the use of technologies if not recommended
6. Advise governmental regulatory
7. Serve as an advisor to health insurance
8. Post launch data for robust assessments
9. Improve health services outcome resulting from HTA
10. Promote research for improving healthcare services



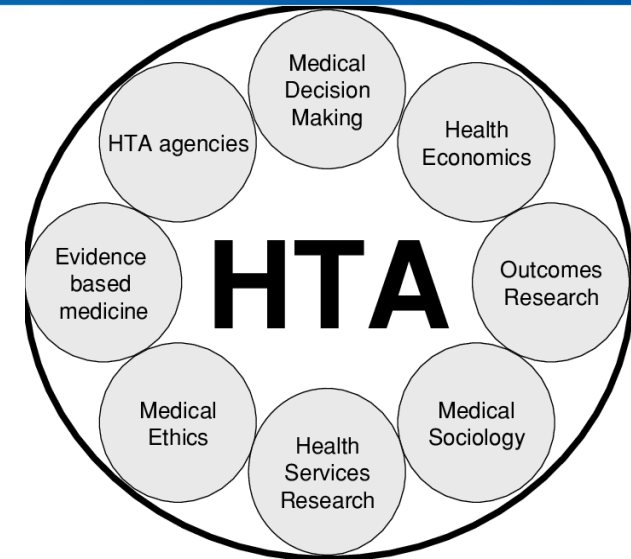
# Medical Devices Market

- ❑ 2022 Research estimated at \$536.2 Billions a year
- ❑ Estimated updated may reach \$799.67 Billion a year 2030

❑ USA	40%
❑ EU	30%
❑ Japan	15%
❑ Rest of the world	15%

# HTA for Medical Devices

- ❑ Proactive technology Planning
- ❑ Evidence based
- ❑ Social, economical and legal implication
- ❑ Addresses misuse, over use and under use of technology
- ❑ Reimbursement for new technologies
- ❑ Visibility of effective technologies



# Examples of HTA on Medical

- Hyperbaric oxygen therapy for the treatment of diabetic leg ulcers
- The role of rapid diagnostic tests in the management strategy for COVID-19
- Robotic surgery
- Proton therapy
- O Arm
- Gama knife vis stereotactic
- EOS scanning
- Cost and outcome of chiropractics treatment for low back pain
- Liquid based techniques for cervical cancer screening
- 3 Tesla or more verses 1.5 tesla MRI
- Multi-Slices CTs above 256 slices
- Reprocessing single use Medical Devices
- E-Health ; EMR, E-Physician, E-Pathology, E-Robotic, Cybersecurity in medical devices etc
- Others...

# Medical devices' FDA and HTA

<b>Function</b>	<b>FDA/CE</b>	<b>HTA</b>
<b>Main focus</b>	Safety, performance, quality	Clinical and cost affectivity Robust data/ more evidence
<b>Other focus</b>	Pre marketing, on market, post market	Social and legal
<b>Timing of approval</b>	Premarketing approval	Throughout life cycle
<b>Care taker</b>	Government	Government and or Private
<b>Outcome</b>	Mandatory/ regulation	Recommendation, guidelines, reference etc.
<b>Data/ Evidence</b>	Limited	Robust, practical

# HTA in some in Arab

**Jordan:** has been addressing HTA since 2010, work is in progress for a few years so far, including pharmaceutical mainly and medical devices in initial stages, none yet for medical procedures and systems. Formal guidelines at the national level are in progress, ISPOR Chapter exists.

**KSA:** a lot of work has been done through major hospitals, ISPOR Chapter exists, no formal guidelines at the national level, based on my recent research, ISPOR chapter exists.

**Egypt:** HTA / Pharmaceutical. Such as the Pharmaceutical HTA advisory committee with MOH in Egypt, ISPOR Chapter, we'll hear more about Egypt experience in this session.

**Tunisia:** National Authority for assessment and accreditation in Healthcare which started in 2014: [INEAS](#) Pharmacology, Medical devices, Medical procedures and health programs. Infrastructure is well set, Projects have been published and ongoing.

Other Arab countries ISPOR Chapters exists in Algeria, Morocco, Lebanon, Kuwait and Qatar.

# HTA World-Wide

**1974-1995** : HTA started in the US congress with OTA, there are more than 55 HTA agencies, among them Blue cross blue shield, ECRI, NIH and Hayes

**1980s**: HTA in UK

**1985**: International society of Technology Assessment in Healthcare (HTAi), members from 35 organizations, 2000

**1990** : HTA in all Europe started for each (29 Countries)

**1992**: International Network of Agencies in HTA (INAHTA) 41 members from 21 countries

**1995**: ISPOR with chapters in 76 countries with 19,000 membership to date (2023)

**1996**: KSA steps taken at KFSHRC and could be in other hospitals

**2005**: EUnetHTA for all Europe

**2004** : WHO efforts in HTA in Africa and Latin America

**2005** : HTA in other countries; China, Korea, Malaysia, Philippines, Singapore, Australia, Canada, New Zealand, Latvia, Hungary and

2008: IFMBE HTA Unit, for Medical Devices

**2010**: Jordan HTA Steering committee

**2014**: Tunisia, : INEAS, IANHTA, National Authority for Assessment and healthcare accreditation

**2018**: HTA Pharmaceutical Committee in Egypt

# Jordan HTA Process

1. A national HTA steering committee with members from all healthcare sectors.
2. There are HTA units in some sectors with minimum coordination
3. A road map for HTA has been established to be completed in 5 years, i.e. by 2028.
4. Working on establishing an advisory guide document for HTA with all its parts by end of 2024.
5. Stakeholders involvement includes MOH, RMS, PHA, University Hospitals and KHCC.

# Project Goals - Who benefits?

- To facilitate evidence-based decision making, which in turn improves the quality and cost-effectiveness of healthcare.
- Provide healthcare managers with information on technology alternatives.
- It evaluates the **clinical effectiveness** , **cost effectiveness** and **impact of health technologies and their use.**
- Coordinate the development of clinical guidelines and pathways and their implementation
- Training on evidence based policy and decision making for healthcare providers, capacity building



# Challenges

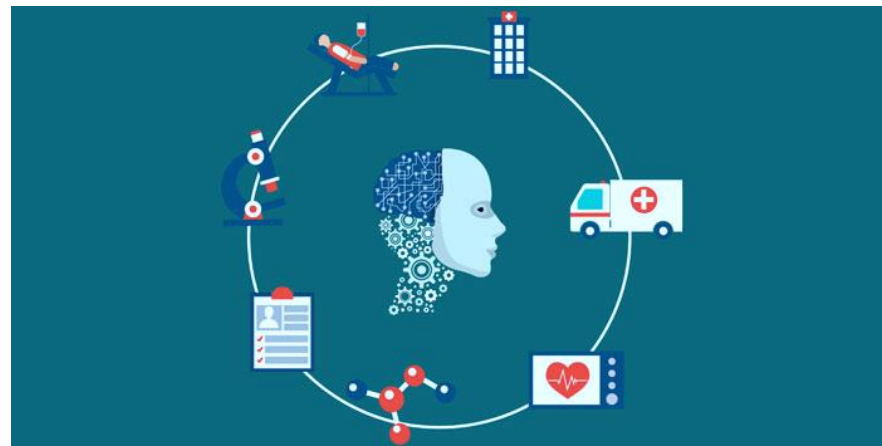
- HR
- Data
- Budget
- Networking
- HTA report as an interim support for new technology
- Criticism of assessments
- Lack of CRO
- Recommendation
- Applying HTA in hospitals



Access to HTA data bases  
Continuous training and  
knowledge process  
Gap between HTA findings  
and the decision making  
process  
Need HTA infrastructure

# Opportunities

- Artificial Intelligence and HTA
- Collaborations with International HTA associations
- Collaborations with different countries in the region and benchmarking/ cooperation with different countries
- Cooperation with Global Clinical Engineering Alliance (GCEA)
- Big opportunities for Clinical/Biomedical Engineers



## References

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- ECRI: [www.ecri.org](http://www.ecri.org)
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- HTAi: [www.htai.org](http://www.htai.org)
- INAHTA: [www.inahta.org](http://www.inahta.org)
- EunetHTA: [www.eunethta.eu](http://www.eunethta.eu)
- INEASE: [www.ineas.tn](http://www.ineas.tn)
- ISPOR: [www.ispor.org](http://www.ispor.org)



# Questions and comments?

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