



From theory to practice:

Hospital Based - Health Technology Assessment at the Hospital Clínic of Barcelona

Carla Fernandez Barceló, HCB
14th International EBHC Symposium
Kraków, October 8th, 2019



How are new technologies introduced in the market?



Regulatory Agencies

Should we approve it for market entrance?



National/Regional HTA

Should we grant coverage/reimbursement?

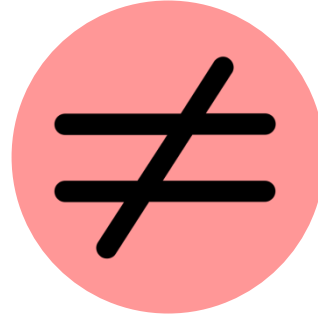
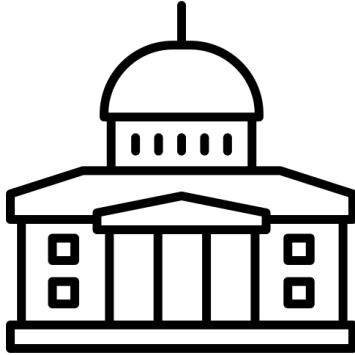


Hospital Based HTA (HB-HTA)

Should we invest/introduce it in the hospital?



Differences between national/regional HTA and HB-HTA



- Look for **all** health care system
- Decisions oriented to **all hospitals** (look at averages)
- Not always HTs of interest for Hospitals

- Look at the **specific** hospital conditions:
 - Patient needs
 - Organization of care
 - Doctors
 - Costs and budget
- **Differences** among hospitals

Can hospitals use the results from national HTA reports?

1. Priorities in Health Technologies
2. Timing
3. Relevant Outcomes (values)
4. Involvement of professionals

Domain	HTA Core model	HB-HTA Core model
	EUnetHTA	AdHopHTA
D1: Health problem and current use	✓ relevant	✓✓✓ most important
D2: Description and technical characteristics	✓ relevant	✓ relevant
D3: Clinical effectiveness	✓ relevant	✓✓✓ most important
D4: Safety aspects	✓ relevant	✓✓✓ most important
D5: Costs and economic evaluation		
D5.1 Societal point of view	✓ relevant	✓ relevant
D5.2 Hospital point of view		✓✓✓ most important
D6: Ethical aspects	✓ relevant	✓ relevant
D7: Organizational aspects	✓ relevant	✓✓✓ most important
D8: Social aspects	✓ relevant	✓ relevant
D9: Legal aspects	✓ relevant	✓ relevant
D10: Political and strategic aspects		
D10.1 Political aspects		✓ relevant
D10.2 Strategic aspects		✓✓✓ most important

- Relevant outcomes (clinician patients managers)
- Quality of scientific evidence (on outcomes)
- Adverse effects linked to HT (timing, severity, frequency)
- Patient experience (literature or collected)

- Direct additional/Saved cost/year
- Types: start-up (e.g. equipment, rebuilding, training/education) and running costs (e.g. staff salaries, maintenance etc)
- Additional or saved cost in other departments should be included
- Implications for hospital reimbursement per year (e.g. DRG, budgets etc)

- In side Hospital: Physical space impact, workload and workforce, education/training, working environment, working hours
- Outside department or hospital

- Level of innovation
- Strategic fit with hospital strategy and values
- Prestige and competition



The Hospital Clínic of Barcelona



Hospital Clínic



Maternity Hospital



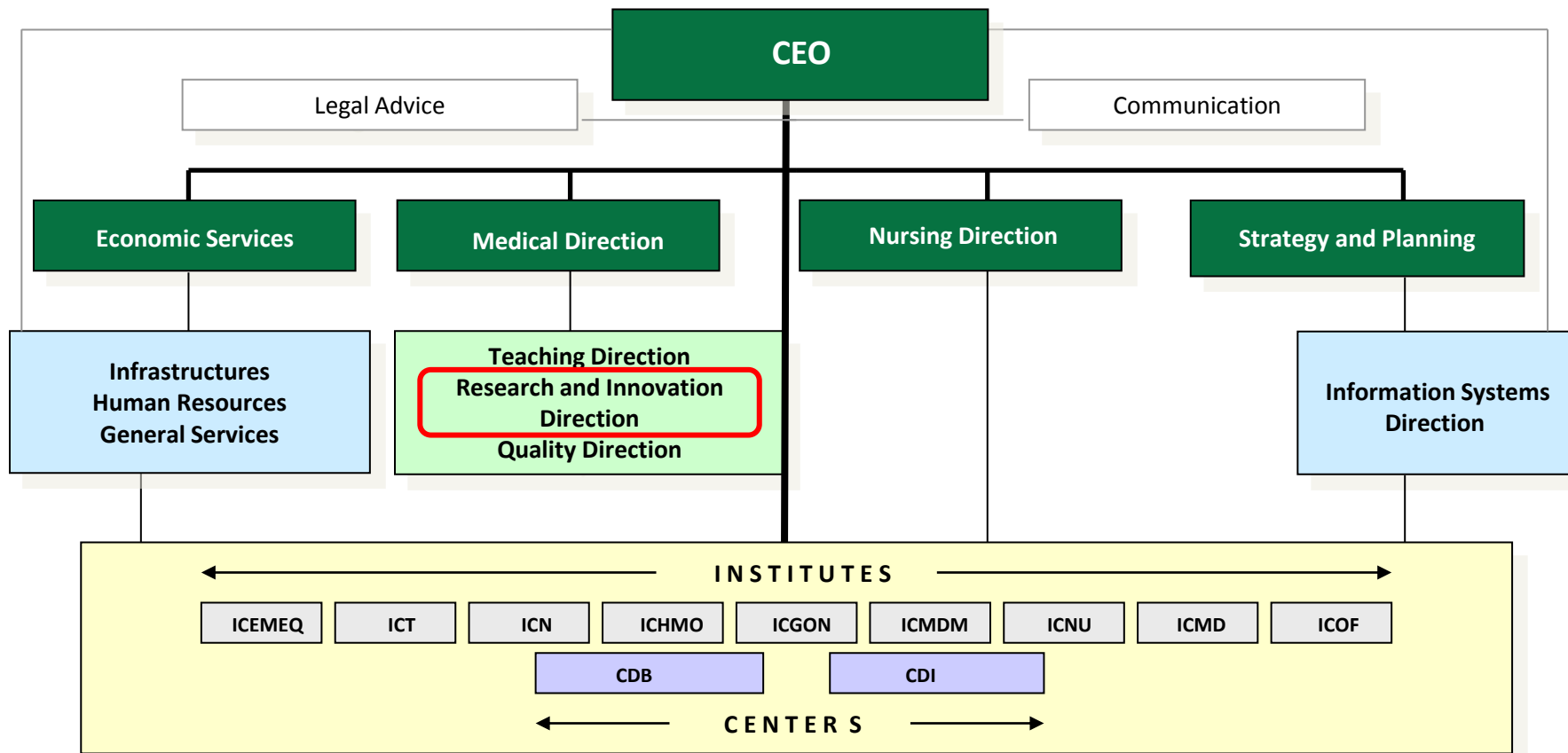
CELLEX building



CEK building – IDIBAPS - FCRB

- University Hospital founded in **1906**. 4,500 professionals covering all medical and surgical specialties (excluding paediatrics).
- Catalan Public Hospital Network | **Community Hospital** (Barcelona) | **High-complexity tertiary hospital** (Catalonia, Spain, worldwide).
- Reference Hospital at national and international level: **second best ranked in Spain (2017)**.

Where are we located?



What happens to the Hospital Manager?

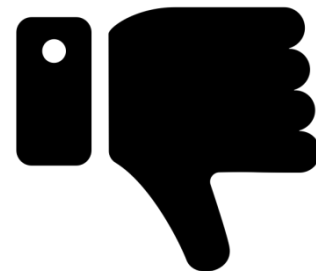


Fixed Budget + Technology Competition (innovative)



Two decisions

Option A



Option B

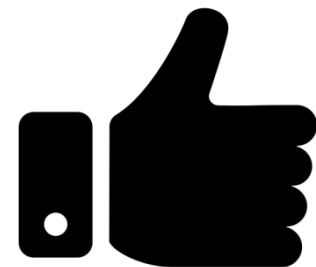
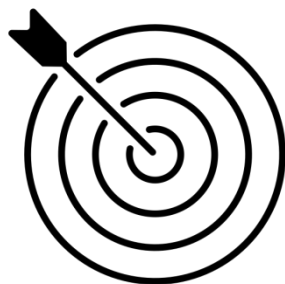


Two decisions

Option A



Option B



Source of information

1 Scientific Societies / Physicians



How do I decide and choose?

3 HTA (HB-HTA)



Information Sources

2 Seller



100%
Objective

Source of information

1 Scientific Societies / Physicians



How do I decide and choose?

3 HTA (HB-HTA)



2 Seller



Information Sources

100% Objective

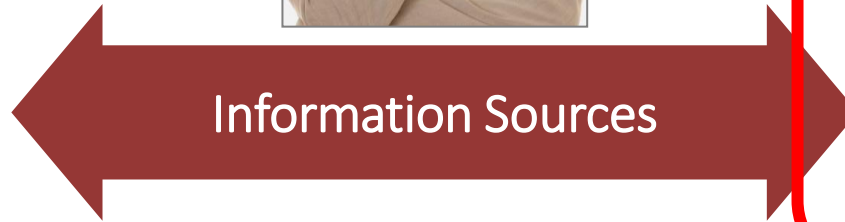
Source of information

1 Scientific Societies / Physicians



How do I decide and choose?

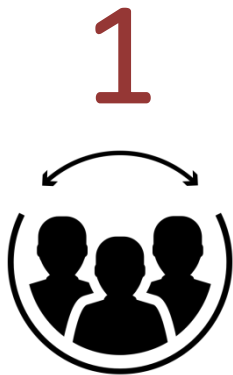
2 Seller



3 HTA (HB-HTA)



100% Objective



MULTIDISCIPLINARY Working Team

- Clinicians
- Financial department
- HTA Team

- Nurses
- Bio-engineers
- Planning teams
- Others

MEETINGS

➤ 3 meetings on average

LENGTH

➤ 3 months on average



2



TIME

How much time do we have?
When is the decision being taken?



EVIDENCE

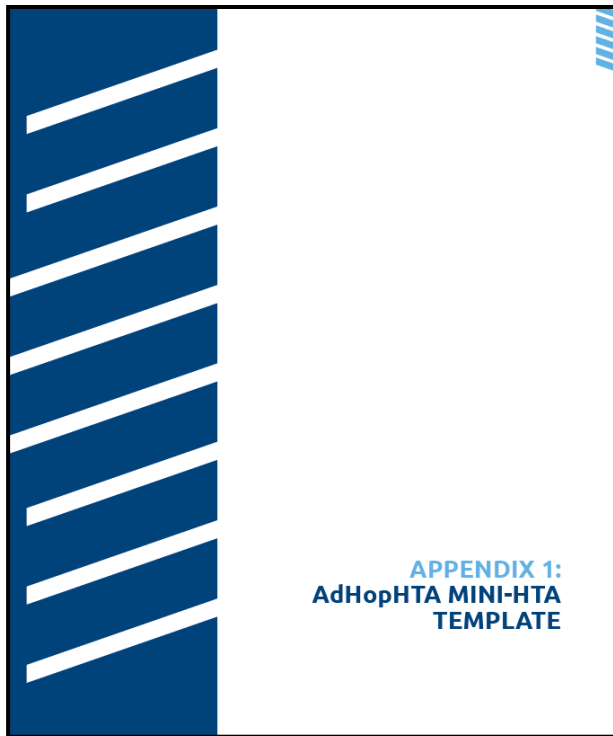
Is there evidence?
What type?



EVALUATION QUESTION

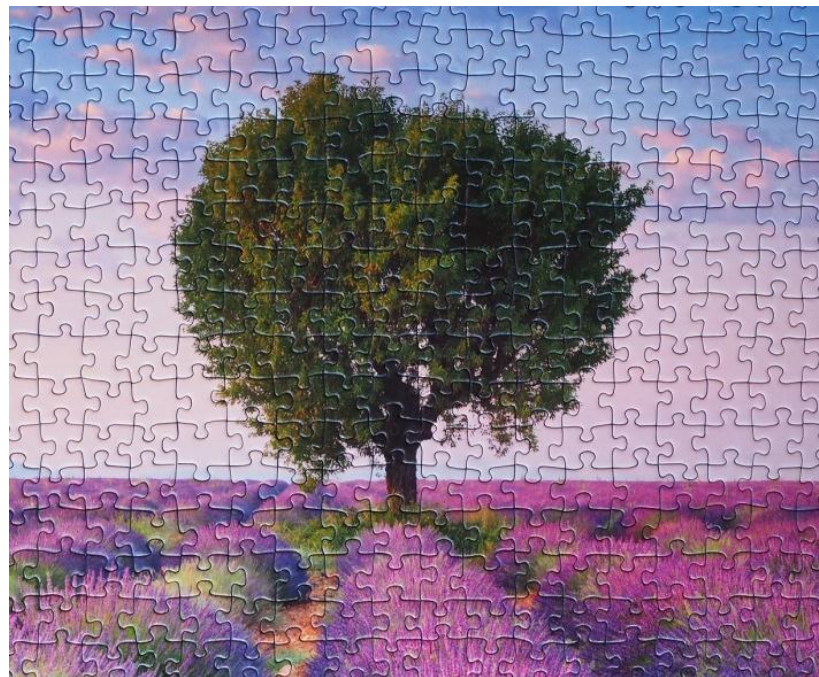
Determines the method.
Helps focus the evaluation.

HB-HTA: Tool



HB-HTA: Tool

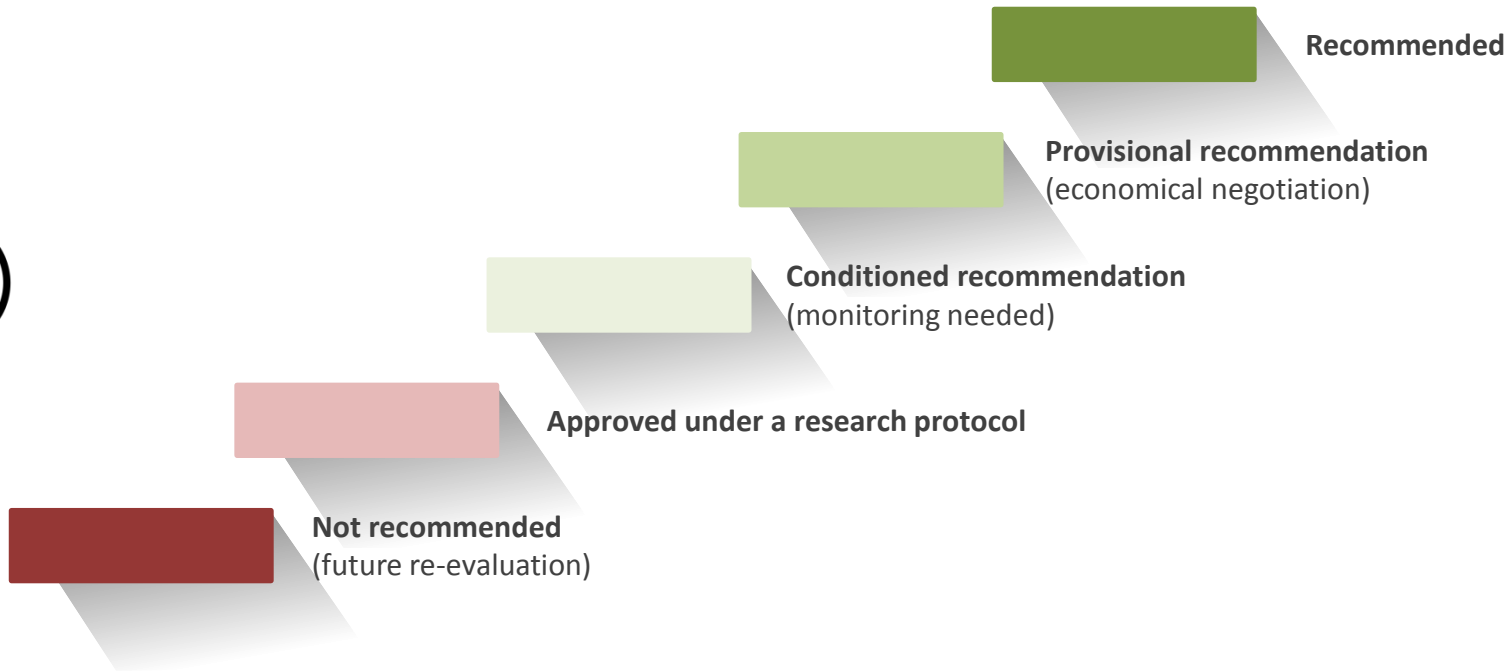
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AdHopHTA
Adopting Hospital Based
Health Technology Assessment

HB-HTA: Decision

4



Examples of Health Technologies at Hospital Clínic

Big Size Medical Devices

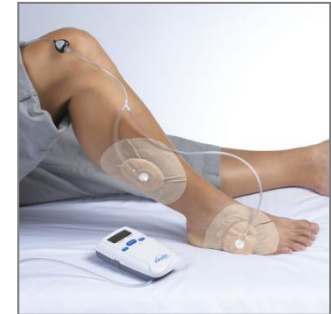
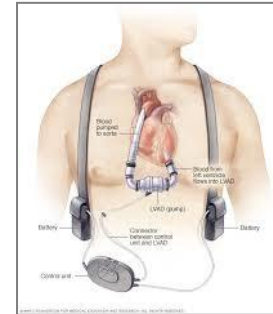
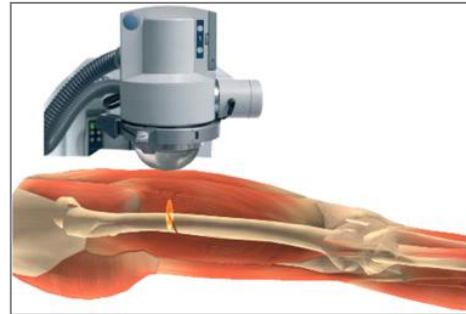
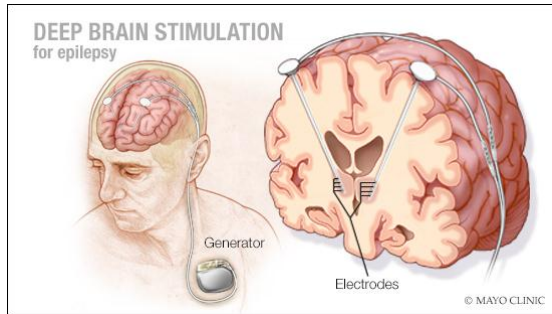
- ✓ Intraoperative Radiation Therapy with Linear Accelerator (breast cancer) (ICHMO)
- ✓ Da Vinci Robot (urology, cardiology, gastroenterology, gynecology) (DM-ICNU)
- ✓ Robot Apoteca Chemo (Pharmacy) (Pharmacy)



Examples of Health Technologies at Hospital Clínic

Medium Size Medical Devices

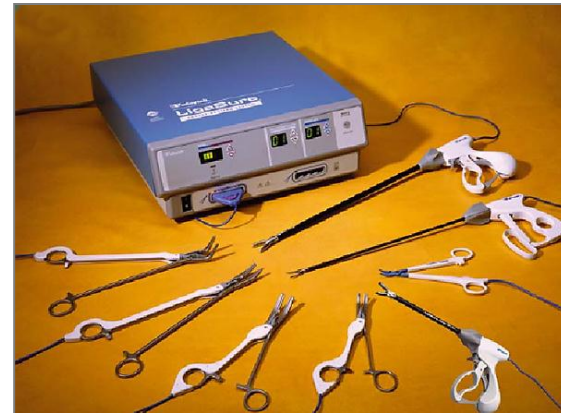
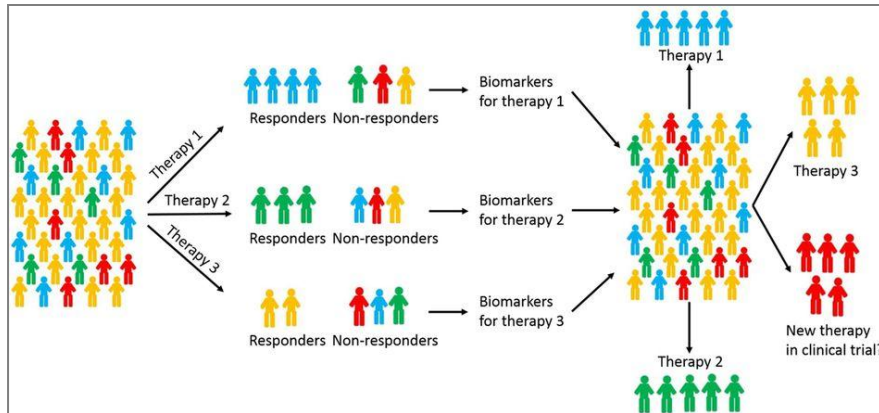
- ✓ Deep Brain Stimulation (Parkinson, other dystonia) (n=2) (ICN)
- ✓ Extracorporeal Shock Wave Therapy for non-union long bones (ICEMEQ)
- ✓ Left Ventricular Assistive Device (ICT)
- ✓ Negative pressure wound therapy (VAC[®] equipment) (DM)



Examples of Health Technologies at Hospital Clínic

Small Size Medical Devices

- ✓ Multi-gene Assay test (for Breast Cancer) (Personalized medicine) (ICHMO)
- ✓ Re-usable electrosurgical device for bipolar vessel sealing (DG)



Examples of Health Technologies at Hospital Clínic

Procedures

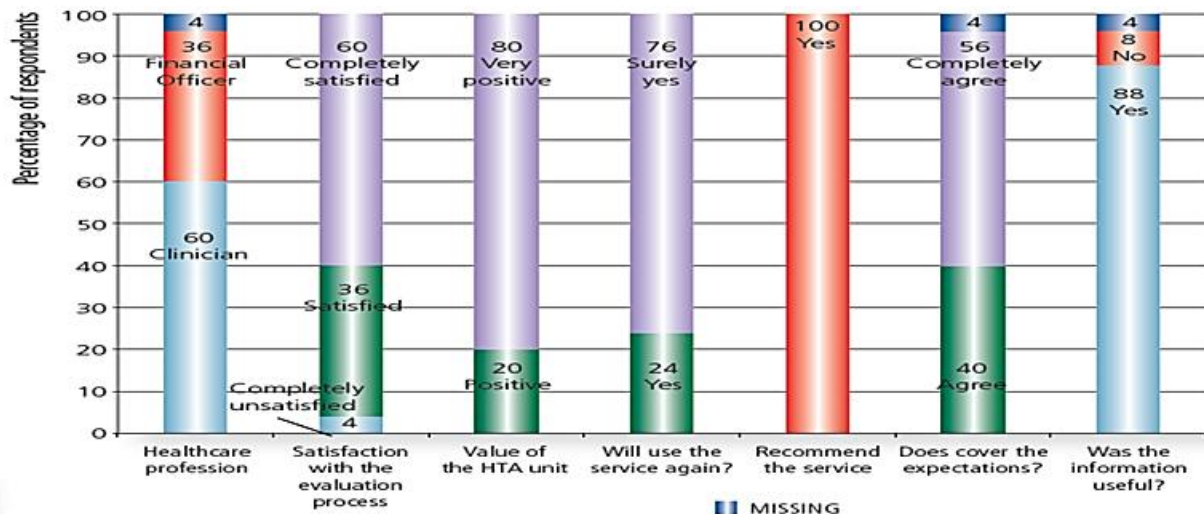
- ✓ Amniotic membrane transplantation (treatment of venous leg ulcers) (ICMiD)
- ✓ MRI screening for breast cancer (CDI)



Impact: HB-HTA at Hospital CLINIC of Barcelona: 5 first years

Clinical area
Biochemistry
Cardiology
Dermatology
Digestive System
General Surgery
Hepatology
Neurology
Neurosurgery
Oncology
Traumatology
Pharmacy

Satisfaction survey



Acquisition cost (n=23)	7,7M €
Accepted (n=12)	1,9M €
(Final negotiated price)	(1,5M €)
Opportunity cost (n=11)	5,8M €

✓ Transparent and systematic	
✓ Improves relationship between departments	
NPV tech accepted (n=12)	4,1M €
NVP tech not accepted (n=11)	- 13,6M €

Negative Pressure Wound Therapy (NPWT)

—

VAC[®] & PICO[®]



A practical case study

AdHopHTA mini-HTA: 28 questions in 5 parts

1. Summary
2. Basic information
3. General methodological aspects and reports
4. Results inside the domains
 - ✓ Clinical aspects (efficacy/effectiveness)
 - ✓ Safety of the patient
 - ✓ Economical aspects
 - ✓ Organizational aspects
 - ✓ Patient perception
 - ✓ Strategic aspects
5. Discussion, conclusions and recommendations

Defining the scope

Define the goal and the scope of the HB-HTA report (**TICO**).

- **Technology:** *what technology is assessed?*

Negative Pressure Wound Therapy (vacuum to assist and improve the wound closure)

- **Indication:** *who is the target population?*

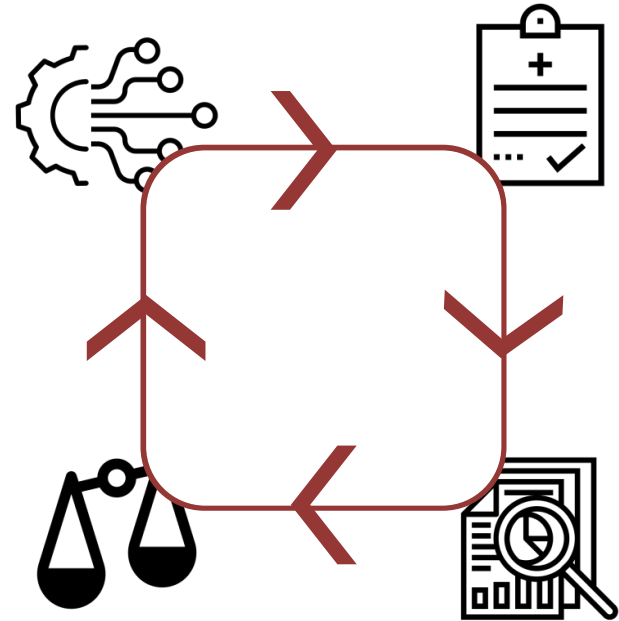
Patients with open wounds (second intention wounds)

- **Comparator:** *what is the alternative? What technology substitutes?*

Standard treatment with dressings or surgery if needed

- **Outcome:** *what outcome is being measured?*

- **Effectiveness:** healing of the wound, reduction of the wound size, time of scaring
- **Safety issues:** mortality and adverse effects
- **Cost:** length of stay and other associated costs



Literature review

SCIENTIFIC REVIEW: HTA REPORTS, META-ANALYSIS, SYSTEMATIC REVIEWS?

EFFECTIVENESS

National HTA agencies: 3; SBU (Sweden), NICE (UK), Avalia-T (Spain)

Quality of the reports: low, moderate, high?

Conclusion: good trend but low quality of evidence

ECONOMIC EVALUATION

Cost analysis: 7

Conclusion: potential cost saving → reduction Length of Stay & less frequency of care

Analysis of costs in our hospital

If the NPWT doesn't change in the next year, it will be used in 46 patients.

	Nº simulations	Without NPWT	With NPWT	Potential save with NPWT	Nº amputations without NPWT	Nº amputations with NPWT	Potential amputation save with NPWT
Surgery	23	68.595,09 €	50.168,40 €	18.426,69 €			
Trauma: Graft	11	51.946,85 €	21.473,00 €	30.473,85 €	0,08	0	0,08
Trauma: Flap	11	138.700,30 €	99.259,54 €	39.440,84 €	3,24	0,21	3,03
Total	46	259.242,24 €	170.900,94 €	88.341,38 €	3,32	0,21	3,11

Other mini-HTA domains

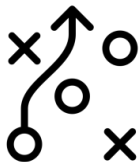
- ✓ Is there training needed?



- ✓ What is the patient's experience of the technology and its implications?



- ✓ Are there any strategic implications associated with the technology that should be considered?



Recommendation



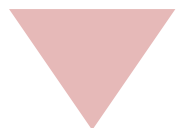
Recommended



Provisional recommendation (pending economic negotiation)



Conditioned recommendation (under monitoring)



Approved under a protocol of research



Not recommended (future evaluation)

From scientific assessment (mini-HTA) to real life assessment

From March 2015 to February 2016, all patients carrying NPWT were monitored, an economic model for the associated activity was created and a follow-up sheet was administered by the departments of Traumatology, Surgery, Surgical Block and Nursing Supervisors.



Results of the monitoring

- ✓ The NPWT has been used in 21 cases, 6 of surgery and 15 of Traumatology.
- ✓ The results from real life are aligned with the evidence from the reviewed scientific literature. Nevertheless, 90% of cases of surgical infection achieved a better resolution of the wound than showed by scientific literature.
- ✓ Appropriateness is reached in diabetic foot and managing infections, while grafting indications needs improvement. The only complications were bleeding (5%) and maceration of the surrounding skin (5%) unlike the scientific literature that includes complications such as fistulas, intestinal necrosis and infection.
- ✓ According to the economic simulation model, the implantation of the NPWT in surgery can be a saving, while in Traumatology the cost in cases of grafting exceeds the treatment without NPWT and in the cases of flap is practically the same.
- ✓ The implantation of NPWT in patients with surgical wounds, diabetic foot, surgical and hanging infections is adequate. The indication to patients with graft must be redefined the indications for use of NPWT.
- ✓ The use of NPWT for surgery is cost saving in our hospital; while for the other indications is not clear.



Conclusions of the monitoring

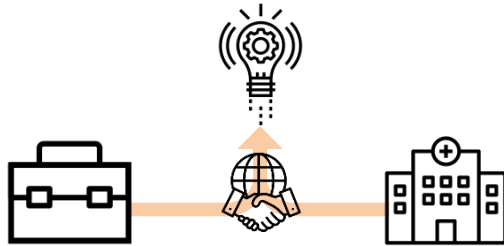
- The use and impact of NWPT in real life deviates somehow from mini-HTA results.
- Nevertheless, these deviations are towards a positive impact in health care since it improves patient outcomes, helps to realign appropriateness and save costs in some indications.
- This results could be an indicator of the conservative approach traditionally adopted when performing mini-HTA.

Trends in HB-HTA: last 5 years at HCB

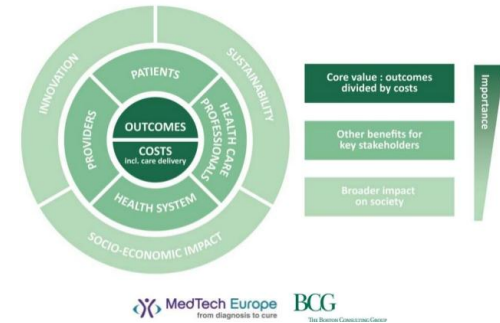
1 Technology valorization for market entrance and reimbursement (very early assessment)



2 Strategic alliances with companies



3 Value Based Procurement



4 Innovative Public Procurement



Thank you

Dziękuję Ci



Carla Fernandez Barceló



Hospital Clínic de Barcelona



cafernandez@clinic.cat