Next Generation Health Technology Assessment

Preparing for a Policy Sandbox: Engaging Stakeholders to Advance the Use of RWD in HTA

Presenters: Milou Hogervorst, Johan Pontén, Ayla Lokhorst, Dalia Dawoud

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About HTx

- **Horizon 2020 project** supported by the **European Union**, kicking-off in **January 2019** and lasting for **5 years**.
- Facilitate the development of methodologies **to deliver more customized information on the effectiveness and cost-effectiveness of complex and personalised combinations of health technologies.**
- Provide methods **to support personalised treatment advice** that will be shared with patients and their physicians.
- In close collaboration with the European Network for HTA (EUnetHTA) and its stakeholders **pilot the implementation of these methods in Europe.**

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Preparing for a Policy Sandbox:
Engaging Stakeholders to Advance the Use of RWD in HTA

- An introduction to the sandbox approach
- Possible applications in HTA
- Methodological and policy challenges around RWD for HTA-decisions

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Presenters

• Milou Hogervorst	PhD candidate, Utrecht University	Complex therapies and RWD
• Johan Pontén	Senior Advisor International Affairs, TLV	RWD in HTA
• Ayla Lokhorst	Project Manager HTx, ZIN	Change models
• Dalia Dawoud	Senior Scientific Advisor, NICE	Policy sandboxes

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The presenters have no conflicts of interests to declare

Real World Data in Health Technology Assessment of complex health technologies

Milou Hogervorst, MSc, PharmD
PhD candidate in HTx

A survey among European HTA organisations

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Universiteit Utrecht

“Most of the challenges during HTA stem from insufficiencies in the available data.”

Which challenges in HTA make the acceptance of RWD most likely?

- Increasingly complex nature of new treatments
- Practical experiences of European HTA organisations

Guide future research on:

- method development
- alignment of policies for expanding use of RWD in HTA

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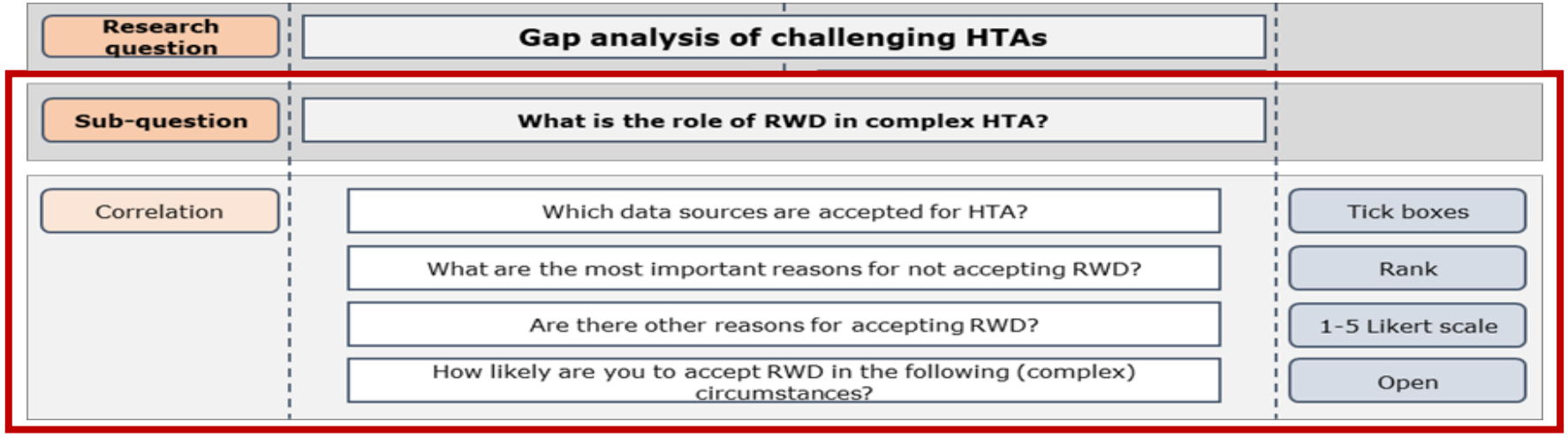
Survey structure



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Contributing HTA organisations

22 organisations from 21 countries completed the questionnaire (67%)

Mix of Eastern & Western European countries

Most assess pharmaceuticals (95%); some medical technologies (45%)

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Data sources accepted by HTA organisations

Data source	Number of HTA organisations reporting the use
Meta-analysis	22
Systematic review	22
RCT	22
Patient registries	19
Interim data from RCT	18
Cohort study (prospective observational)	17
Case-control study	13
Cross-sectional study	12
Case reports and series	9
Unpublished data	9
Editorials/expert opinions	8

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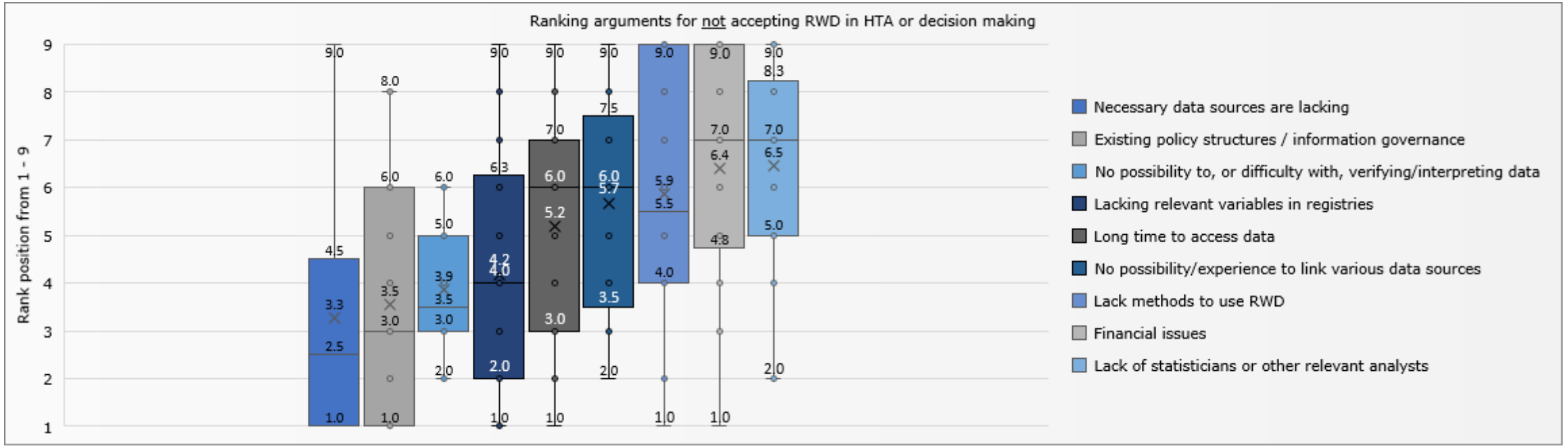
Arguments for not accepting RWD in HTA or decision making



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Other circumstances increasing willingness to accept RWD for HTA

Population
High disease burden

Intervention
Highly innovative
Otherwise not accessible

Comparator
Not right comparator in RCT / single arm study

Outcome
Highly promising RCT outdated or contradicting
Resolve uncertainties in RCT

Practical
Uncertainty resource utilization in practice

CEA
Major uncertainties

Policy
European WEU legislation (=RWD)

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Circumstances creating likelihood of using (additional) RWD in HTA

Complicating issue	Average score (SD)
Orphan designation or small patient population	4.3 (1.0)
(companion) diagnostic procedures or tests	4.2 (0.7)
Advanced surgical interventions	4.1 (0.9)
Medical devices or wearables	4.1 (1.2)
ATMPs	4.1 (0.9)
Gene sequencing	4.0 (0.9)
A sequence of therapies	3.9 (1.2)
Digital technologies	3.9 (0.9)
Treatments approved based on interim data or with limited follow-up time	3.8 (1.4)
Histology independent treatments, based on biomarkers	3.8 (1.2)
Proton, photon or laser therapies	3.7 (1.1)
RWD only available from other countries IN your region	3.7 (1.1)
Single arm trials	3.6 (1.3)
A preventative treatment or vaccine	3.5 (1.4)
Personalised medicine, based on a biomarker or gene	3.5 (1.2)
A combination of therapies	3.4 (1.3)
Comparison treatments with completely different mechanisms of action	3.3 (1.3)
RWD only available from other countries OUTSIDE your region	3.2 (1.2)

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Conclusion

- HTA organisations use various RWD sources, even editorials
- Not accepting RWD does NOT seem te be due to a lack of knowledge in organisation, finances or methodological issues
- Not accepting RWD does seem to be due to necessity and existing policy structures
- HTA organisations seem willing to accept RWD under complex circumstances (lowest score 3.2/5 seems acceptable?)
- Complex circumstances (that are increasingly present) increase willingness to use RWD (orphan therapies, single arm trials, ATM

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- Dr. Wim G. Goettsch
- Rick A. Vreman, MSc, PharmD

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- University of Copenhagen
- ZIN
- NICE
- TLV

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Identified challenges of using RWD in HTA

Based on a study of present RWD-use in 25 EU HTA-authorities:

“Overview of the development of the use of RWD including a review of international consensus methods currently developed.” HTx deliverable 4.4

DOWNLOAD

Johan Pontén, Senior Advisor International Affairs, TLV

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Survey on use of RWD in HTA-authorities

- Survey on the use of RWD
- 67% (24/36)
  - 15 questions on RWD use
  - Basis for selection for interviews
- 9 (10) Interviews
  - Thematic overview of the answers
- Literature review
- European initiatives for methods development for RWD use

Potential use of RWD

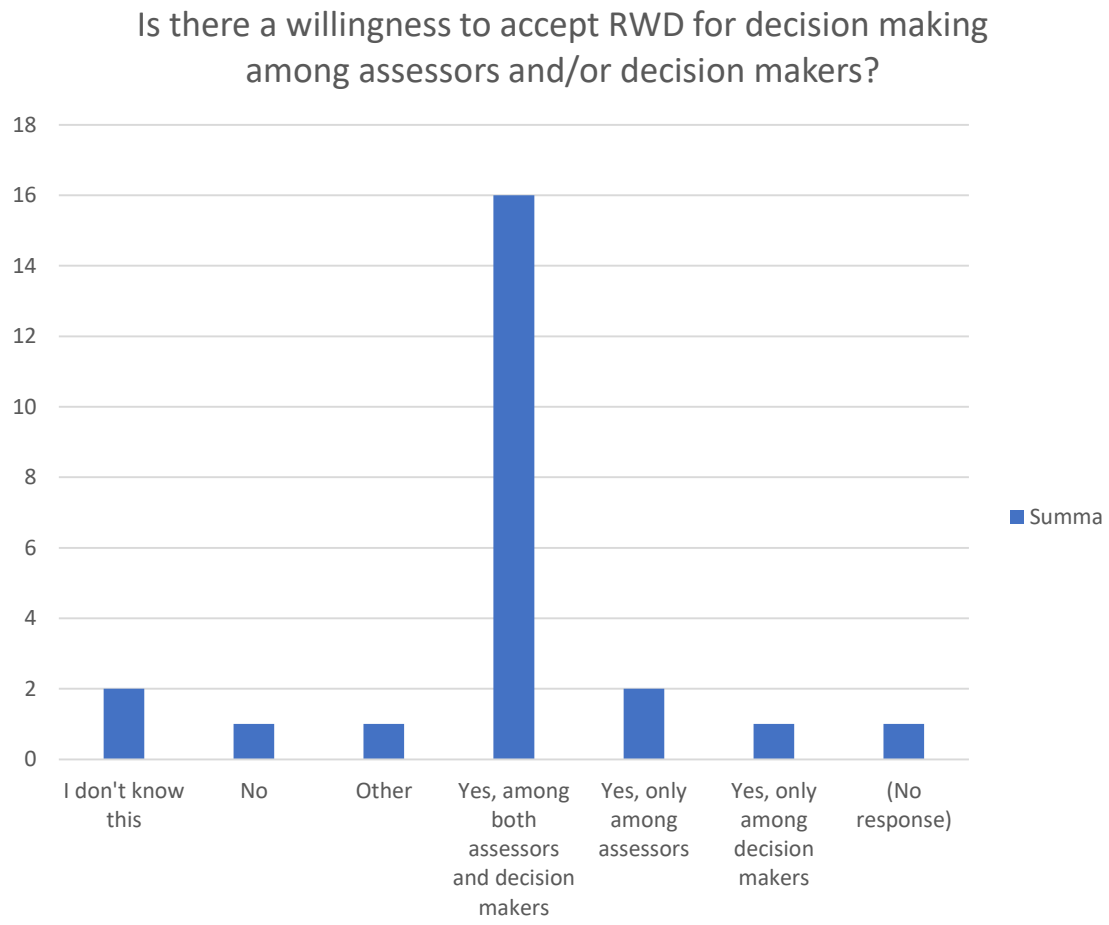
	Setting	Potential uses of RWE in decision making
Resolution of uncertainties in determination of value	Initial HTA	**• describe current standard of care • create external comparator to contextualize efficacy • populate cost effectiveness and budget impact models**
	Managed entry agreement	**• evaluate outcomes in clinical practice • resolve uncertainties related to determination of value in the initial assessment**
	Re-assessment	**• complement the clinical and economic evidence base that was available in the initial assessment • monitor utilization and evaluate budget impact in clinical practice**

Facey et al., 2020, Real-world evidence to support Payer/HTA decisions about highly innovative technologies in the EU—actions for stakeholders. International Journal of Technology Assessment in Health Care 1–10.

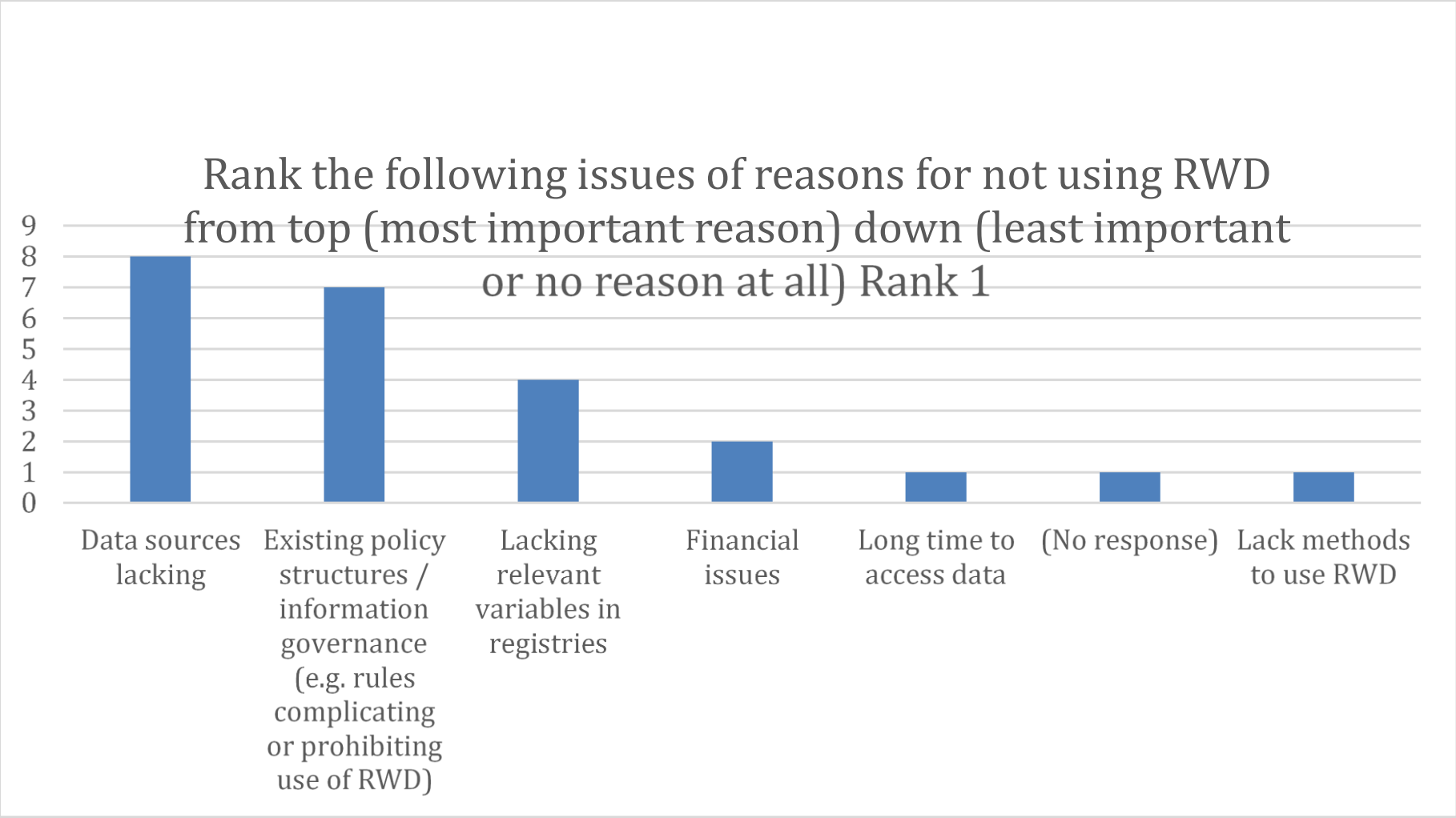
RWD-rapport TLV, 2020

Results from the Survey

- There is a willingness to use RWD for decision making, as a complement to RCT
- A majority of the surveyed agencies state that they do re-assessments
- 50% would like to be able to use RWD
- A majority assess that decisions on reimbursement have been influenced by the possibilities to follow up use and treatment effects in clinical practice
- RWD has the potential to allow for different decisions.
- A majority state that negative decisions have been made due to the difficulties to follow up in clinical practice.



Reasons for not using RWD – 1st rank



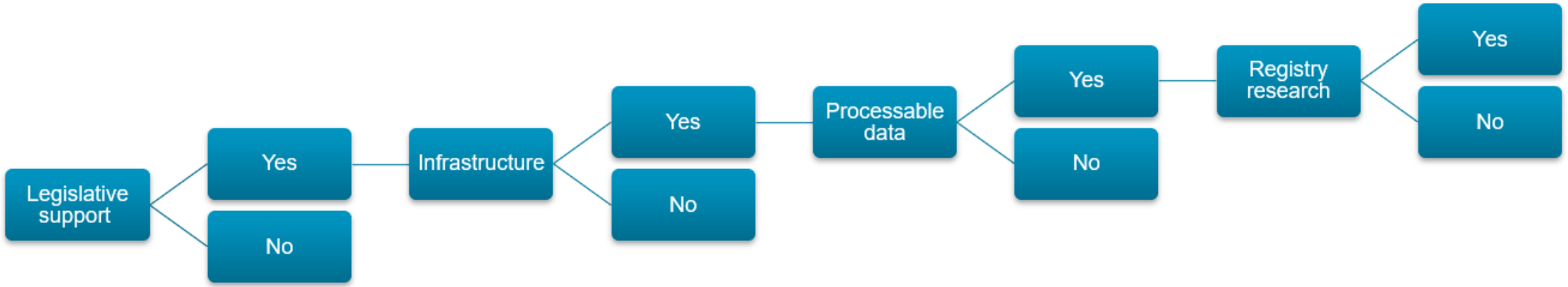
Current situation in HTA-authorities

- We see that many agencies (only) have access to claims data – some important questions can be answered by that
- Data on effectiveness is difficult to get
- Proxy data can be used for some effects
- Indication is a difficult variable to catch in many countries
- Effectiveness and resources use in clinical praxis are contexts where RWD is very interesting

Data access and processing

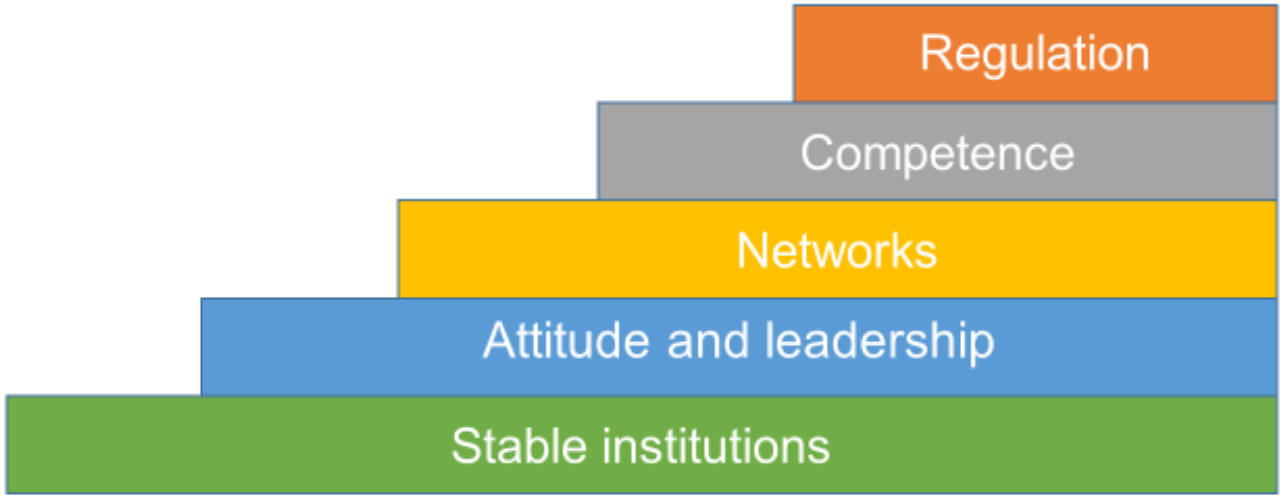
- Many agencies are working to improve data access
- Legal frameworks for data access exist in some countries, but others are trying to put them in place.
- Infrastructure for gathering of data can often become a question about the burden on health care staff for additional filing
- Register study competencies can be found inhouse at some agencies but also competencies at registry holders are used

Theoretical Framework
Data Access and Processing



Theoretical Framework

Policy factors relevant to build the use of RWD



Policy Conclusions

- Policy is ranked in the survey as prime hindrance for the use of RWD
  - Leadership and Vision is primordal – other factors can be changed with time
- Few autorities have reified knowledge that is a support for RWD processes (contracts, processes, guidelines and so on)
- Individuals can drive change – but not build a system if leadership is not there.
- Build networks to learn from others!
- In-house competence can be a key to success
- Access to data, low impact on the health care staff, legal support are other success-factors

Review on change management models in multi-lateral, multi-stakeholder contexts: How to engage stakeholders

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Engaging stakeholders - Why

- Substantive – holistic understanding will improve quality of research and help discover ‘unknown unknowns’
- Instrumental – practice-based research questions, relevant outcomes, implementable research outcomes, building a sense of trust (antidote to not-invented-here syndrom)
- Normative – accountability, sharing power and more democratic process, accountability and it is fun
- Political – empowerment and decreasing negative stereotypes

K. Oliver, A. Kothari, and N. Mays, "The Dark Side of Coproduction: Do the Costs Outweigh the Benefits for Health Research?," in *Health Res Policy Syst* (England: 2019).

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Engaging stakeholders			
Why	How much	7 factors	4 models

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Engaging stakeholders – how much?

- Communication – FYI; Here is what we are doing.
- Consultation - What do you think about what we are doing?
- Collaboration – Please get involved in what we are doing.
- Coproduction – Let’s do this together!

Petkovic et al., "Protocol for the Development of Guidance for Stakeholder Engagement in Health and Healthcare Guideline Development and Implementation."

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Engaging stakeholders			
Why	**How much**	7 factors	4 models

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Stakeholder engagement – 7 factors

7 factors affecting succesful stakeholder engagement

- Project management
- Branding
- Facilitation and personal safety
- Data and indicators
- Fora to meet each other
- Understanding each other (‘s world)
- Formal structures

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Engaging stakeholders

Why | How much | **7 factors** | 4 models

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Stakeholder engagement – 4 models

- 1) Adaptive space,
- 2) Midstream modulation,
- 3) Developmental evaluation and
- 4) Knowledge brokering

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Engaging stakeholders

Why | How much | 7 factors | **4 models**

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The Policy Sandbox and its use in health care

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Background

The sandbox concept is **borrowed from software and policy development** and is used for **testing new innovative ideas without affecting live systems**.

It is intended to be a **safe environment** where **testing of new methods and processes** can be discussed between all relevant stakeholders, implemented and assessed.

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Literature review:

- A **systematic literature review** was undertaken to identify **published papers and reports** that described and/or assessed the use of sandboxes in the healthcare sector.
- Searches were conducted in **Medline**, **Embase**, **Econlit**, **Social Policy and Practice**, and **Health Management Information Consortium** databases from inception to March 2020.
- **Free-text Google search** was also conducted to identify relevant **grey literature**.
- Included studies were **qualitatively summarised** using a thematic analysis approach.

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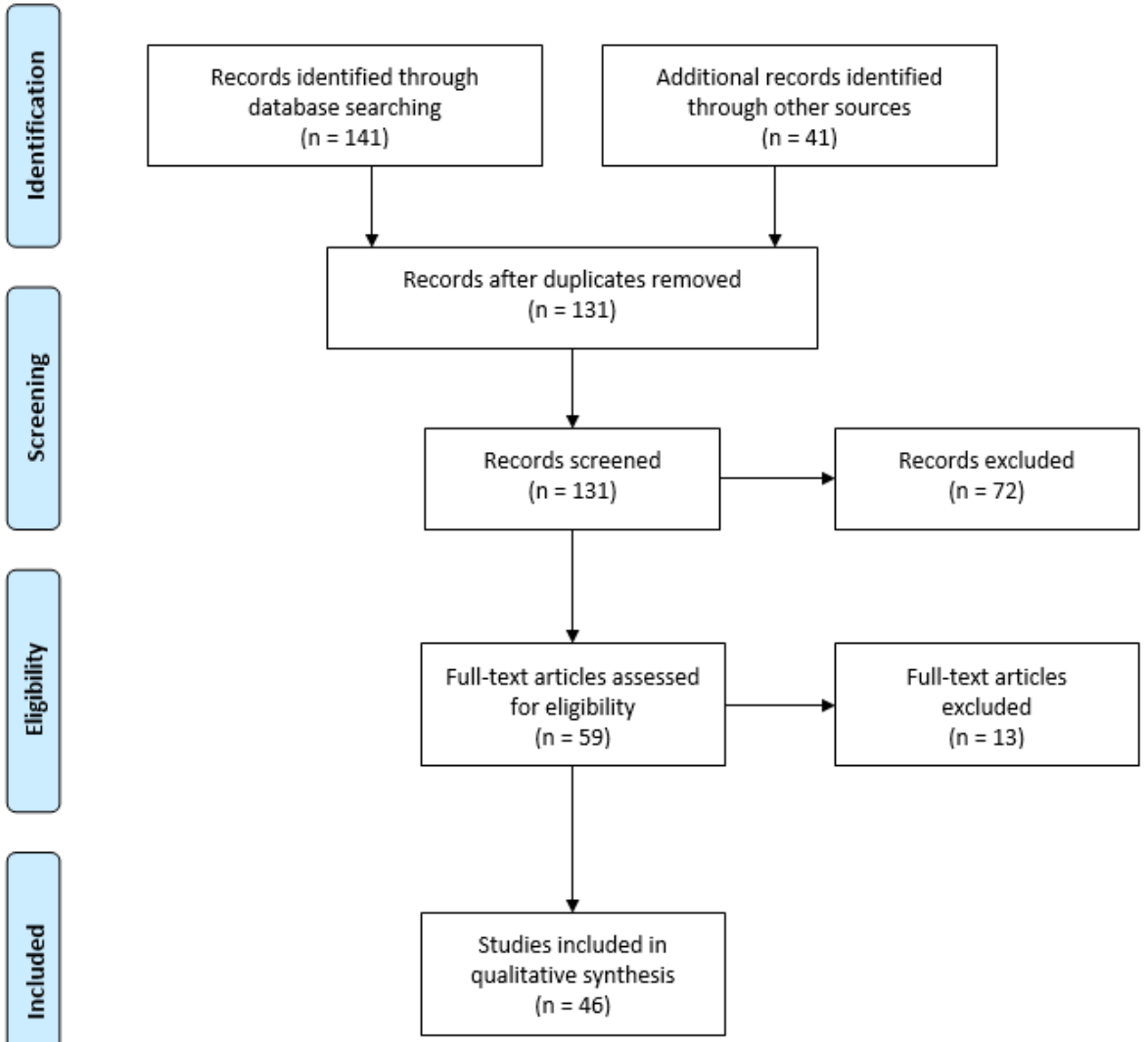
Findings

Search strategy/process

1. “policy sandbox”.tw (0)
2. “regulatory sandbox”.tw (5)
3. 1 or 2 (5)
4. (policy or policies).tw (882,603)
5. regulat*.tw (4,173,248)
6. (health or healthcare or care or nhs or drug or genetic* or genom*).tw (11,908,805)
7. 4 or 5 or 6 (15,617,858)
8. (sandbox* or sand-box* or “sand box*”).tw (527)
9. 7 and 8 (141)
10. 3 or 9 (141)



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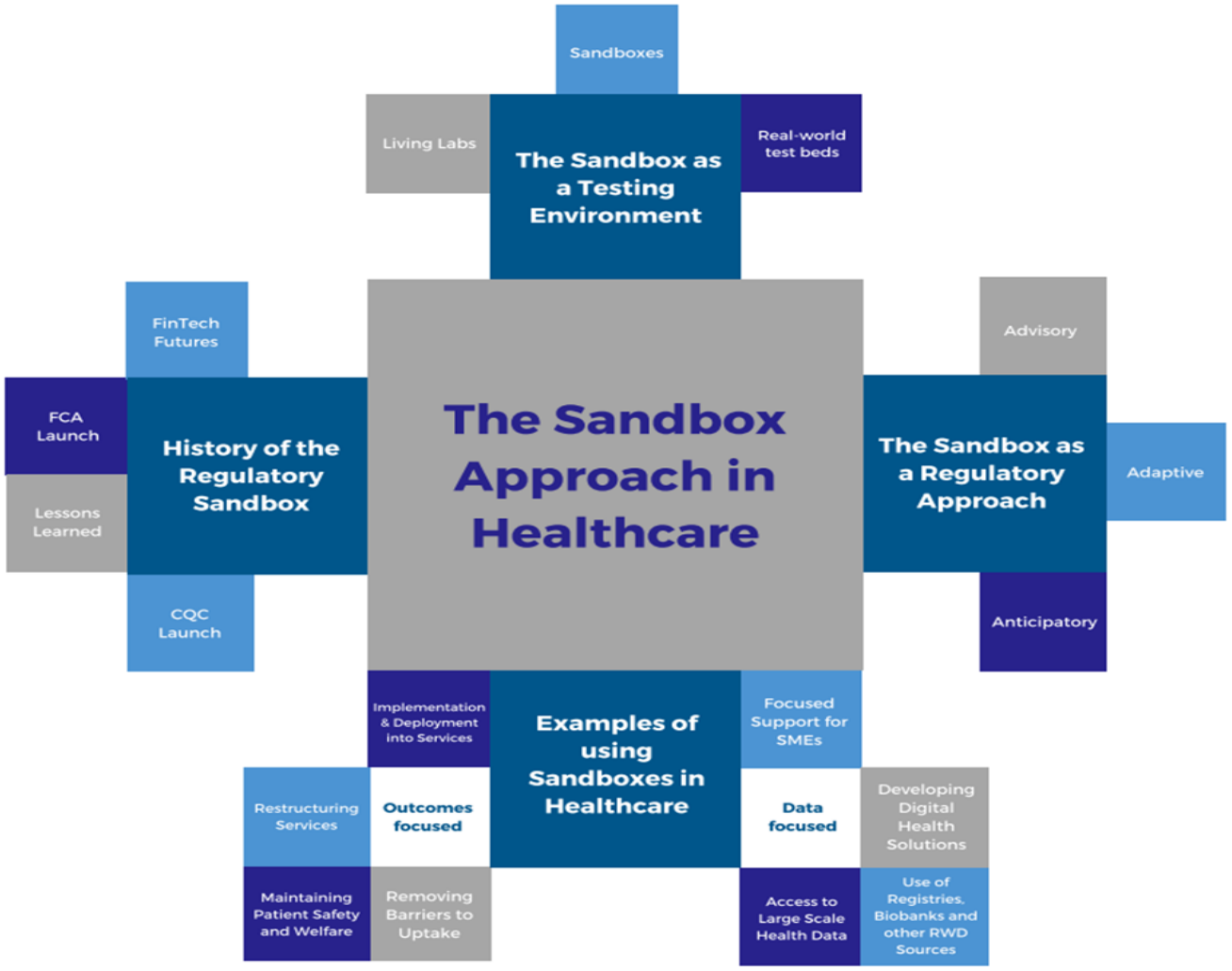
Findings

Main themes identified



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Background and history

- **‘Live-testing environments’** are environments that allow **innovators to trial products**, services and business models in a safe space, to confirm their compliance with existing regulation before implementing them within the wider sector.

- These environments also allow **exploration of processes** that may **violate current rules and regulations** but have the potential to reap a large benefit if introduced into standard practice.

- These live-testing environments are commonly referred to as sandboxes, but can also be referred to **as living labs**, **or test beds**.

- While originally developed as part of the financial technology (FinTech) sector, use of the concept has since expanded to other sectors including energy, transport and healthcare.

MARCH 2015
Fintech Futures

Mark Walport, former chief scientific advisor of the UK Government publishes the review 'FinTech Futures', detailing the concept of a live testing environment named the regulatory sandbox

NOVEMBER 2015
Introducing the Regulatory Sandbox

Following these recommendations, the Financial Conduct Authority (FCA) publishes a report referencing the feasibility of using the regulatory sandbox within the financial sector

JUNE 2016
FCA Regulatory Sandbox Launched

The FCA launches its regulatory sandbox, piloting its framework with a small number of businesses

OCTOBER 2017
Lessons Learned

A report is published summarising the regulatory sandbox, including successes and lessons learned throughout the process

AUGUST 2019
CQC Launches First Pilot

The Care Quality Commission launches the first regulatory sandbox for health innovation within the UK, its first pilot focusing on digital triage tools

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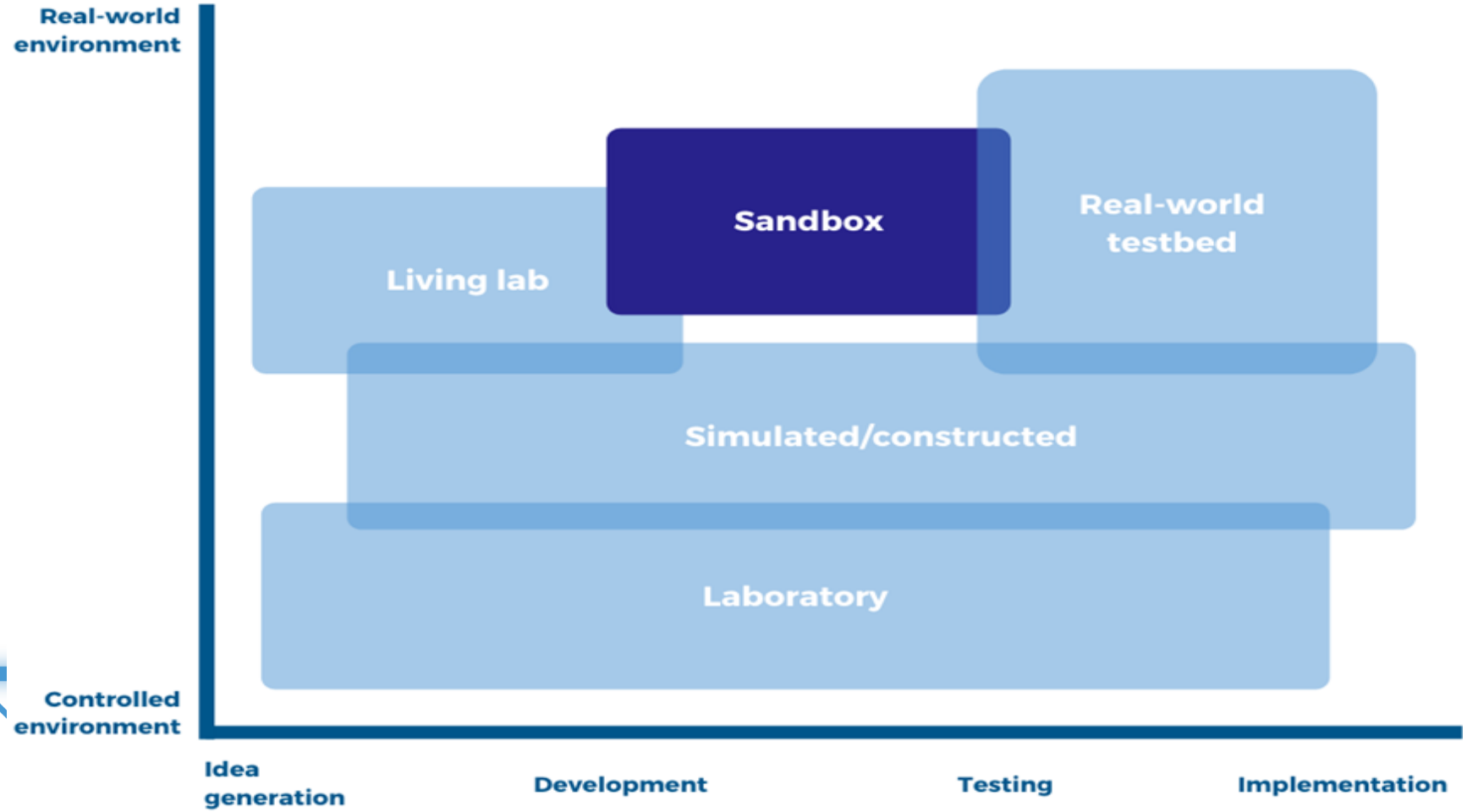
The sandbox as a testing environment



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Adapted from Arntzen *et al.*, 2019

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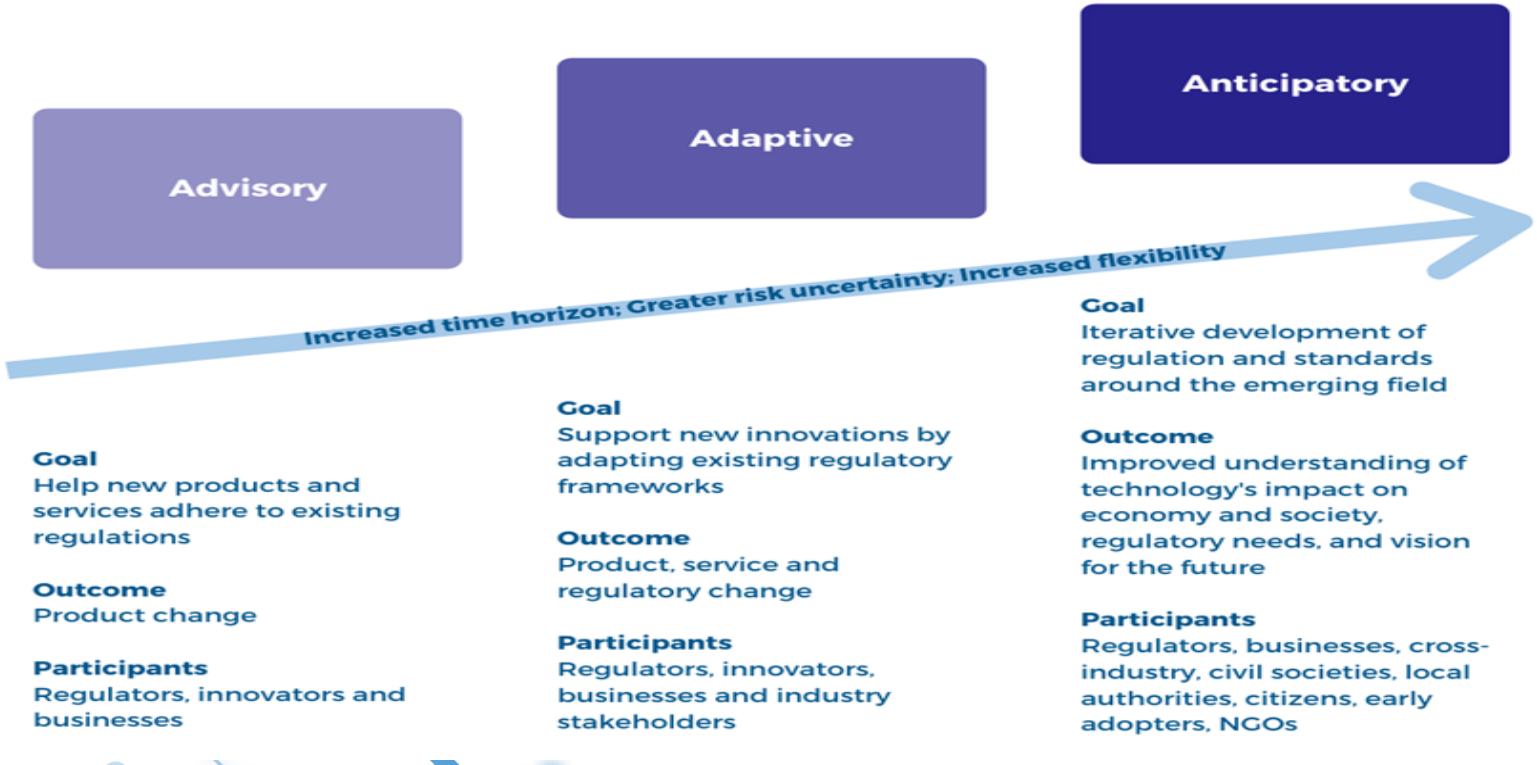
The sandbox as a regulatory approach



Advisory: not looking to change own processes, but help others to develop products that abide by these

Adaptive: are willing to adapt frameworks to facilitate innovation

Anticipatory: forward facing, understanding impacts of emerging technologies on society, and what its regulatory needs may be

Benefits of anticipatory regulation: support innovation as it emerges, regulators can direct innovation, and can respond faster/in advance to prevent harm

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Examples in healthcare

	Location	Name	Organisation(s)	Aim
Outcomes focused	UK	HealthTech Regulatory Sandbox	ICO, Data Guardian, NICE	Cross sector collaboration for ensuring successful implementation into NHS
	UK	CQC Regulatory Sandbox	Care Quality Commission	Defining 'good care', and how to facilitate and deploy new innovations
	UK (Scotland)	Care Inspectorate Sandbox	Care Inspectorate	Focus on restructuring social care services to suit evolving care system
	UK	NHS Test Bed programme	NHS	Removing barriers to uptake of innovative technologies within the NHS; test and evaluate the impact of digital innovations in real-world settings
	Singapore	Licensing Experimentation and Adaptation Programme (LEAP)	Ministry of Health	Promote an effective way of supporting innovation while maintaining patient safety and welfare, through improved interaction between industry and regulators
	Japan	Regulatory Sandbox Framework	Government of Japan	Facilitate development of innovative technologies and business models in Japan
Data focused	UK	ICO Sandbox Programme	ICO	Delivering real benefit for the UK public through innovations in technology and use of data
	UK	Health Data Research UK sandbox	HDR UK	Virtual environment that offers access to large scale health data for the development of products, services or innovations that benefit the population
	UK	Kernow Health CIC Sandbox	Kernow Health CIC	Opportunity to sample and improve products in real-life NHS clinical environments
	Jersey	Digital Health Jersey Sandbox	Digital Jersey	Providing testbed environments to companies that are developing digital health solutions
	Multiple (Europe)	eIT Health Digital Sandbox	European Institute of Innovation and Technology	Improve access to registries, biobanks, and other digital health sources for SMEs
	USA	Digital Health Sandbox Program	Massachusetts eHealth Institute	Support product development within digital health companies and promote the use of sandbox environments to a varied user base

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Developing a policy sandbox- Considerations

Scope

- Which stakeholders are involved?
- What sorts of products are the sandbox interested in supporting?
- Is the product novel and/or significantly different?

Goal and Outcome

- Does the sandbox aim to improve current processes?
- Does the sandbox aim to develop new frameworks to suit innovative products?

Flexibility

- Is the sandbox flexible to business needs?
- Are those involved open to change?

Participant Benefit

- Who stands to benefit from the work of the sandbox?
- What are these benefits?
- How are individuals encouraged to take part, or to join the sandbox?

Effective Collaboration

- How is collaboration facilitated?
- How is this collaboration measured as being effective?
- How are challenges in collaboration overcome?

Investment and Resource

- What resources and tools are available to those entering into the sandbox?
- How are workstreams within the sandbox funded?

Conclusions

- **Sandboxes** are increasingly used within **healthcare regulation.**

- This approach **has not been used in HTA** policy and methodological developments yet despite its potential to **facilitate developing policies, methods and processes.**

- It is particularly relevant for **innovative and disruptive health technologies** as well as methods for use of **new types of evidence** such as **RWE** with contribution from all relevant **stakeholders**

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