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Improving healthcare decisions

ISPOR Medication Adherence and Persistence Special Interest Group

Who Should Pay for Medication Adherence Enhancing Interventions and What Are They Paying for?

ISPOR MAP SIG

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Agenda

Item #	Time	Topic	Presenter(s)
1	8:00	Opening Remarks	Bijan Borah
2	8:10	Manufacturer Perspective	Przemysław Kardas
3	8:22	Healthcare Provider Perspective	Tamas Agh
4	8:34	Payer Perspective	Adina Turcu
5	8:46	Open Discussion and Conclusions	All, Bijan Borah

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Speakers

Moderator:
Bijan Borah, MPhil, PhD
Head, Section of Advanced Analytics, Division of Healthcare Delivery Research, Mayo Clinic

Panelists:
Tamas Agh, MD, PhD
Research Associate Professor, University of Pecs & Syreon Research Institute, Hungary

Przemysław Kardas, MD, PhD
Director, Medication Adherence Research Centre, Medical University of Lodz, Poland

Adina Turcu, PhD
Professor, University of Medicine and Pharmacy of Craiova, Romania

Burden of medication nonadherence

- Extent of the problem
  - ~4 billion prescriptions are written annually in the US of which one-fifth is never filled[1]
  - WHO and OECD estimates that one-out-of-two patients with chronic conditions does not use their medication as precribed[2]
  - Associated with poor and avoidable adverse health outcomes including higher rates of hospital admission, morbidity and mortality
- Cost of medication nonadherence:
  - The adjusted all-cause cost estimated to be $5,271 to $52,341 (in 2015 USD)[3]
  - The average cost of *nonoptimized* prescription drug use was estimated to be $529 billion, which ranges from $495.3 billion to $672.7 billion (in 2016 USD)[4]

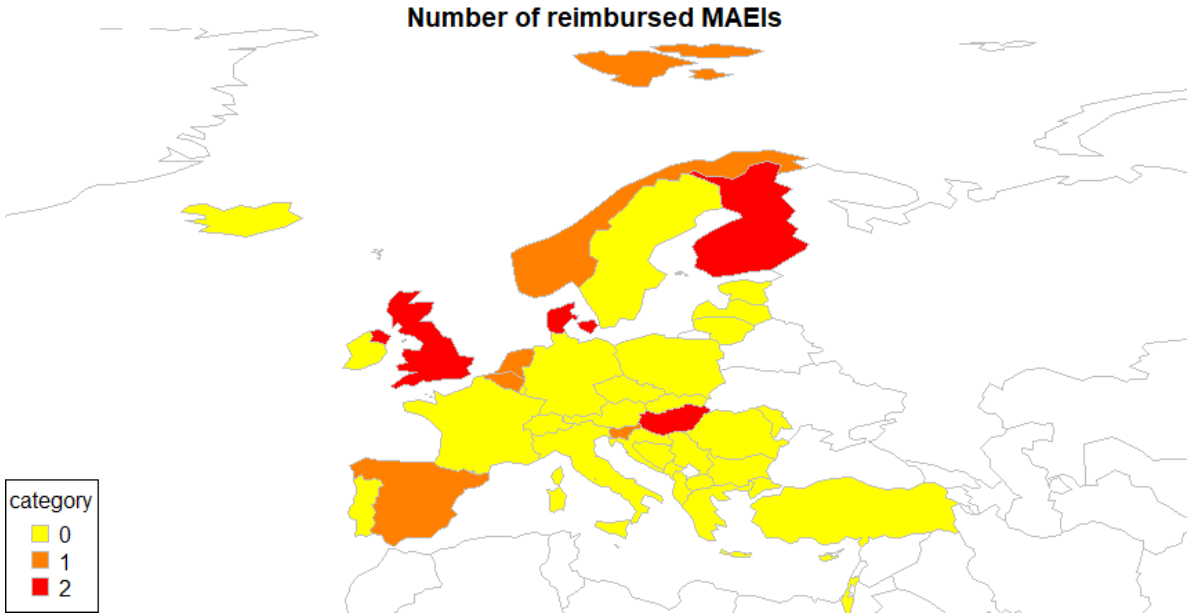
[1]Neiman AB, Ruppar T, Ho M, et al. CDC Grand Rounds: Improving Medication Adherence for Chronic Disease Management — Innovations and Opportunities. MMWR Morb Mortal Wkly Rep 2017;66
[2]Zijp TR, Mol PGM, Touw DF, et al. Smart medication adherence monitoring in clinical trials: a perquisite for personalized medicine? Eclinical Medicine (The Lancet). Vol 15, P3-4. 2019.
[3]Cutler RL, Fernandez-Llimos F, Frommer M, *et al* Economic impact of medication non-adherence by disease groups: a systematic review. *BMJ Open* 2018;**8:**e016982. doi: 10.1136/bmjopen-2017-016982
[4]Watanabe JH, McInnis T, Hirsch JD. Cost of Prescription Drug-Related Morbidity and Mortality. Ann Pharmacother. 2018 Sep;52(9):829-837. doi: 10.1177/1060028018765159. Epub 2018 Mar 26. PMID: 29577766.

FDA-approved adherence-improving technologies

- Adherence-improving technologies approved by FDA and other regulatory bodies:[1]
  - Abilify mycite (for schizophrenia) – a type of smart pill with bio-ingestible sensor;
  - Smart insulin pen;
  - Digital inhaler
  - Smart package/pill dispenser etc.
- Reimbursement – who should pay?
  - Who should bear the cost of these medication adherence-improving technologies – patients, payers, providers, and/or manufacturers?

[1]Zijp TR, Mol PGM, Touw DF, et al. Smart medication adherence monitoring in clinical trials: a perquisite for personalized medicine? Eclinical Medicine (The Lancet). Vol 15, P3-4. 2019.

Only few reimbursed MAEIs are in place in Europe



Ágh T et al. Reimbursed Medication Adherence Enhancing Interventions in European Countries: Results of the EUREcA Study. Front Pharmacol. 2022; 13: 892240.

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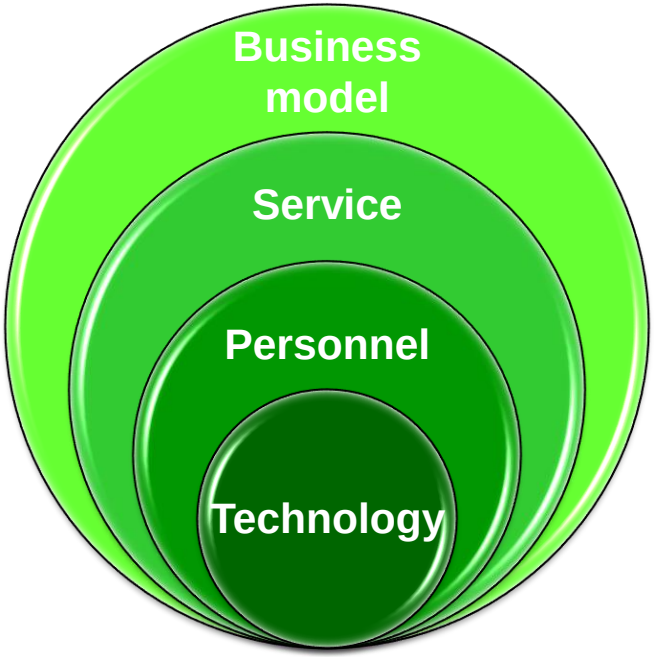
Manufacturer Perspective

What is our *product?*

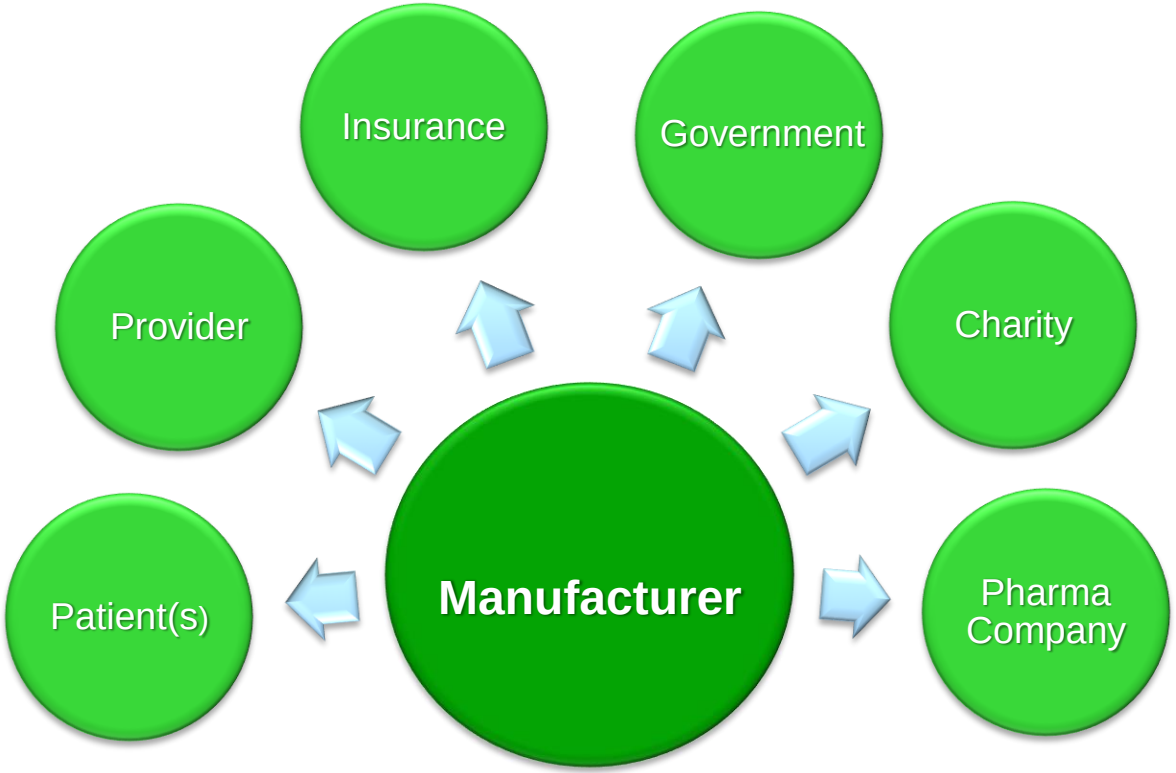
Definition[1]

- MAEIs are any structured activities taking place within, or in association with the healthcare system that have evidence on their positive effect on medication adherence at the individual patient level.

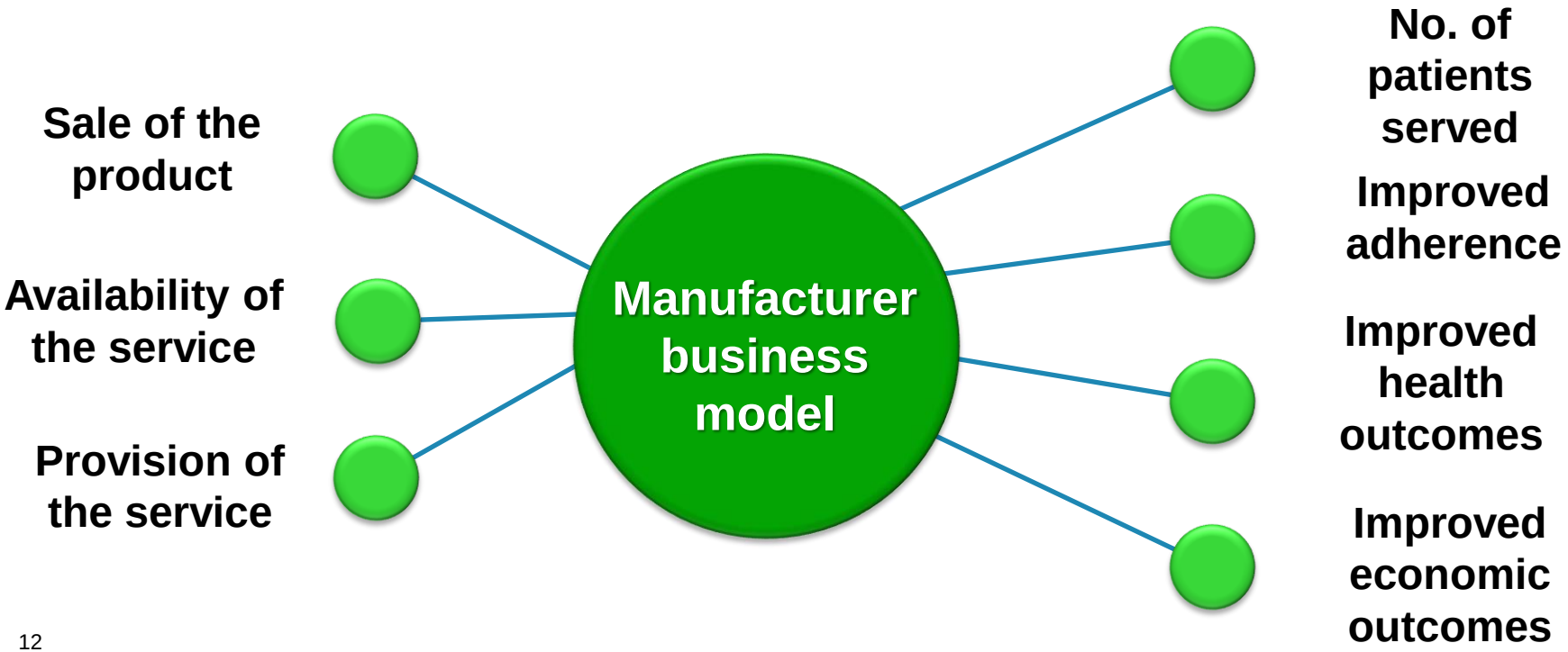


What is our *business principle?*

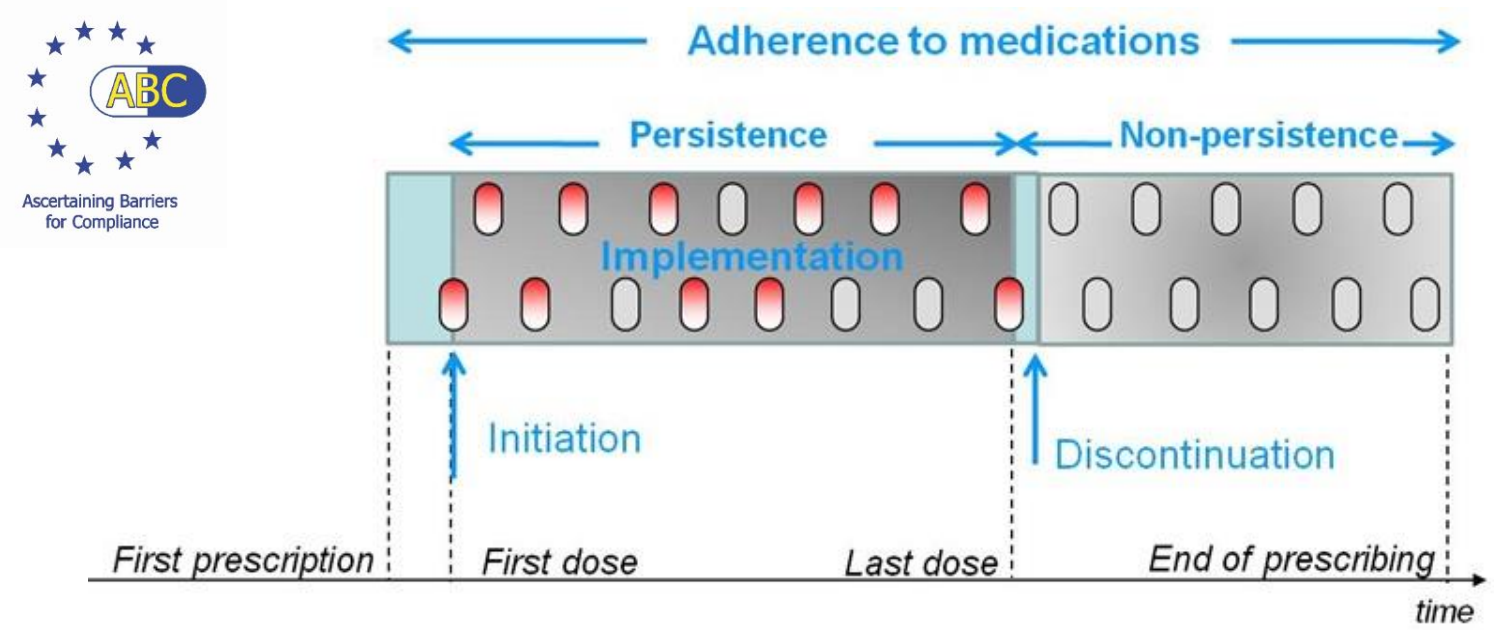
Who is our *customer?*



What is our *business model?*

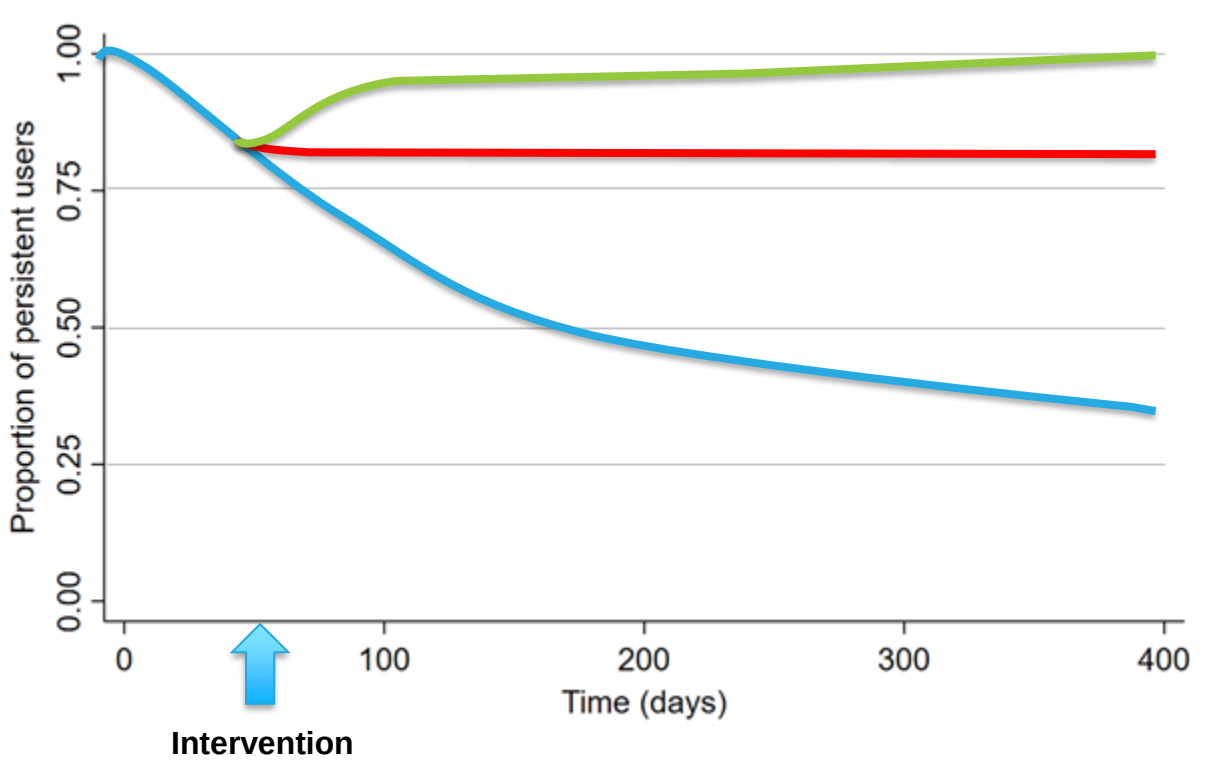


Which *adherence indicators* to target?



Demonceau J et al. Drugs. 2013 May;73(6):545-62.

Which *perspective* to accept*?*



How to win a *competitive market?*

DiGA
(German Digital Healthcare Act)

CE


Reimbursed Medication Adherence Enhancing Interventions in European Countries: Results of the EUREA Study

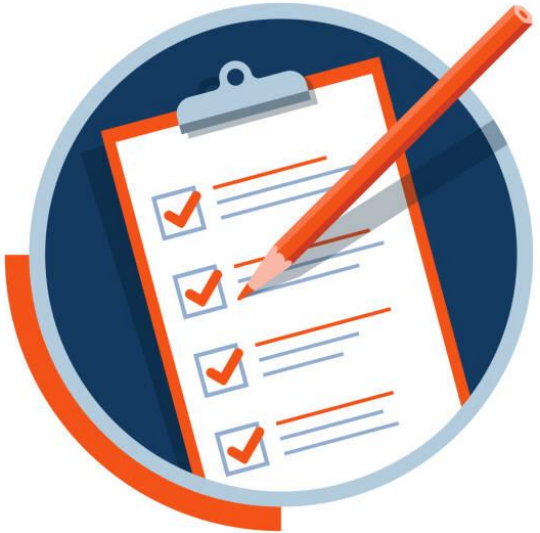
ISO 13485

RCTs

DTx Manufacturer

GDPR

No *one-size-fits-all* option is available…



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Healthcare Provider Perspective

Paying for MAEIs by providers

PROS

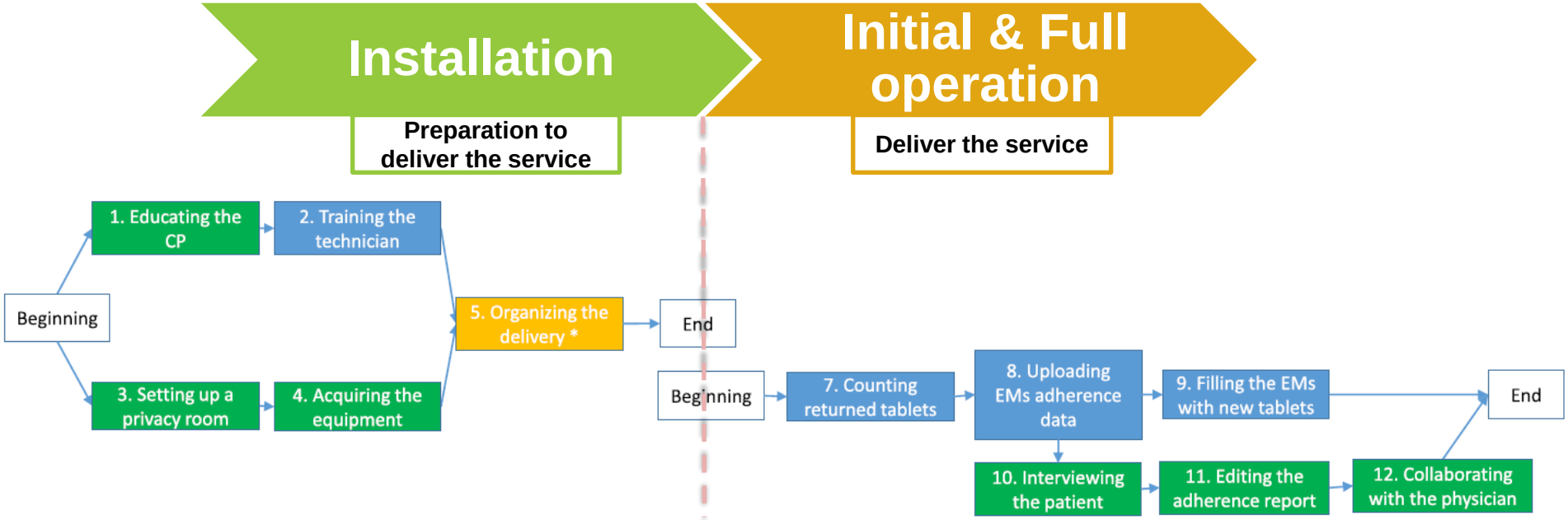
- **Patient-centered care**: healthcare providers demonstrate a commitment to patient-centered care and show that they prioritize patient health outcomes
- **Improved patient outcomes**: can improve patient outcomes, such as reduced resource utilization and better control of conditions
- **Competitive advantage**: patients may choose providers who offer comprehensive care

Paying for MAEIs by providers

CONS

- **Financial burden**: can be a financial burden on healthcare providers, particularly smaller practices or those serving under-/un-insured patients
- **Limited sources**: Healthcare providers may not have the necessary resources, such as staff or technology
- **Opportunity cost**: Paying for MAEIs may come at the expense of other healthcare services that patients need

Costs of MAEIs vary by implementation phases



 Perraudin et al. BMC Health Services Research. 2019;19:15

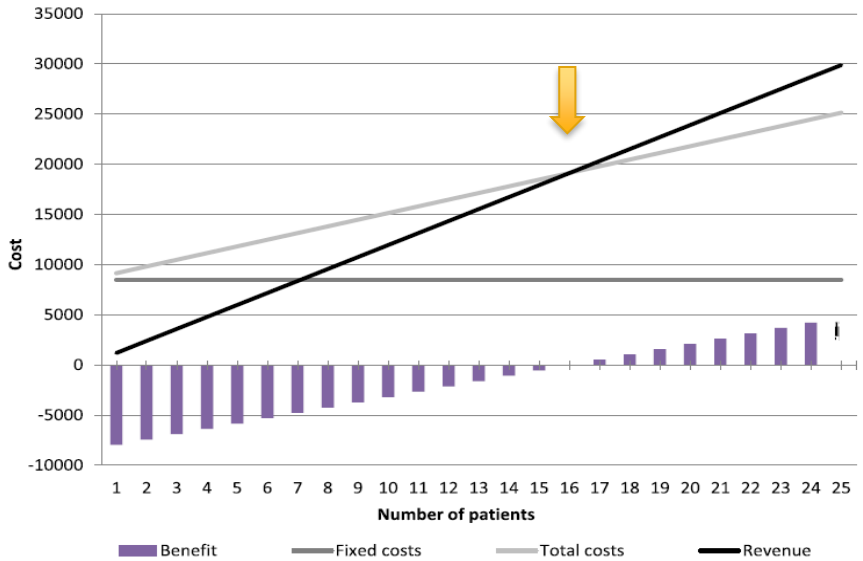
What should providers pay for?

- Cost elements
  - **Direct service delivery costs** (variable costs = costs vary with each additional patient)
    - Include all costs associated with the delivery of the service
  - **Service support costs** (fixed costs = independent of the number of patients)
    - Installation phase: initial staff training, equipment, software licenses, etc.
    - Implementation and full operation phases: continuous training, supervision meetings, software updates, etc.
- Implementation cost of MAEIs notably depends upon the complexity of the service, the complexity of the used implementation strategies, and the setting of service delivery

Perraudin et al. BMC Health Services Research. 2019;19:15

Break-even point

- Estimation of the required number of patients to follow up with to ensure that the generated revenue exceeded the total cost



 Perraudin et al. BMC Health Services Research. 2019;19:15

Potential payment models

- **Fee-for-service**: traditional health care payment model, each covered service is paid for separately (payment is based on quantity or volume)

- **Value-based payment** (payment is based on quality or value)
  - Pay for performance: payment that providers receive for reaching certain quality benchmarks
  - Bundled payment: pay providers for pre-defined episodes of care for specific procedures or conditions in a lump-sum payment instead of distinct payments for each of the services delivered
  - Comprehensive capitation payments: bundling all services delivered to patients across institutional boundaries such as primary care
  - Shared savings contracts: providers organisations receive a share of savings in healthcare spending that is realised for the enrolled population

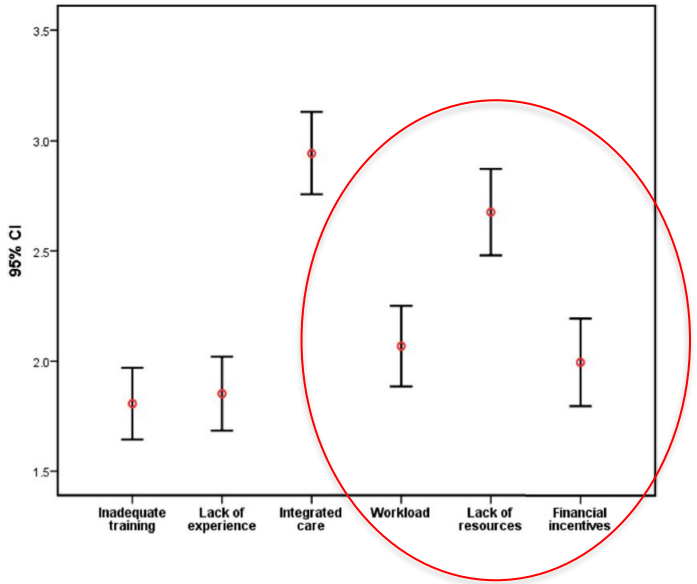
Key barriers to physicians' willingness to implement MAEIs

Financial incentives

- Physicians may be more willing to implement MAEIs if they receive financial incentives
- This could include bonuses or other financial rewards for meeting specific targets related to medication adherence

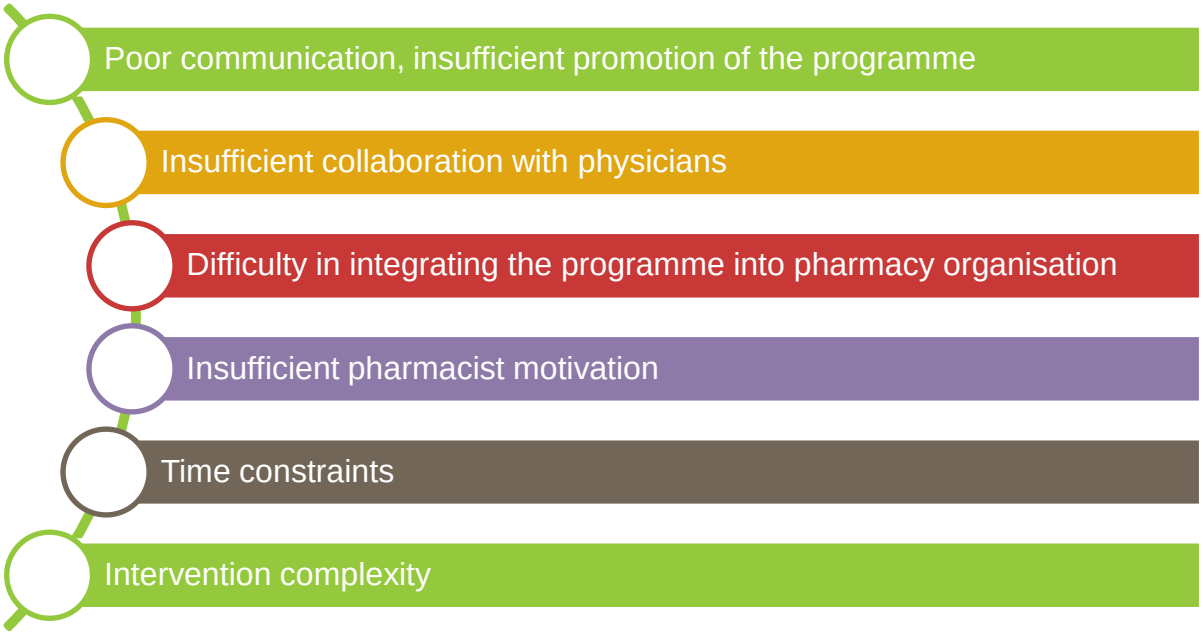
Time commitment

- Physicians are often overburdened with multiple responsibilities
- Any additional time commitment required to implement MAEIs may be seen as a burden
- To provide additional resources (e.g., support staff) to help physicians manage their time more effectively



Müller et al. Patient Preference and Adherence. 2020;14:267–276.
Yfantopoulos et al. Hormones. 2021;20:603–611.

Key barriers to pharmacists' willingness to implement MAEIs



Marquis et al. Int J Clin Pharm. 2014;36:1014–1022.
En-nasery-de Heer et al. J Clin Pharm Ther. 2022;47:1049–1069.

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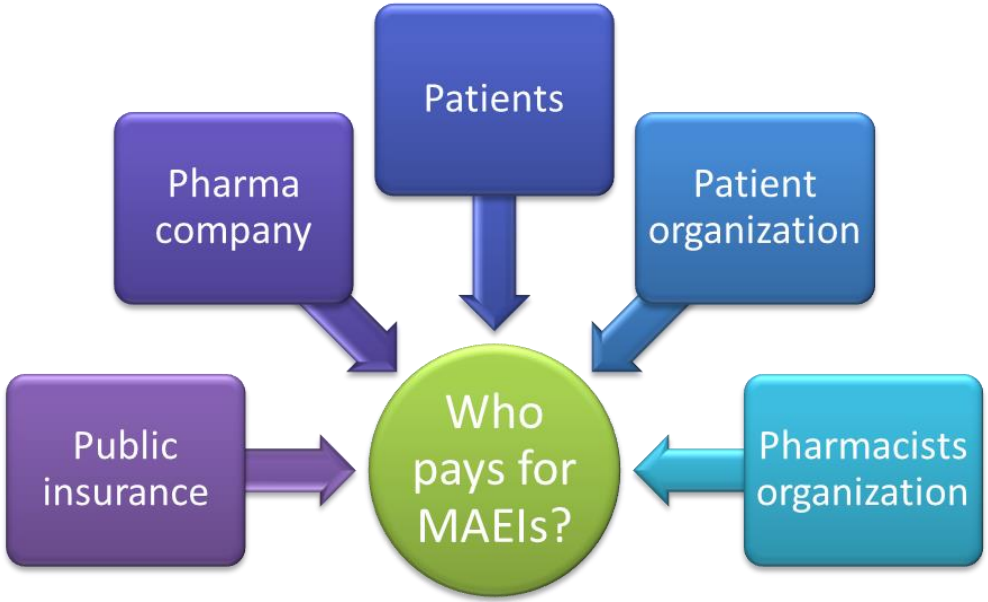
Payer Perspective

Who pays for MAEIs?



Agh et al. 2022. Reimbursed Medication Adherence Enhancing Interventions in European Countries: Results of the EUREcA Study

Payer Perspective Pros

PROS

- To improve the knowledge about the medication in the initialization phase.
- To improve clinical outcomes for chronic disease management and reduced mortality.
- To decrease the burden of healthcare providers in hospitals.
- To increase the activity of the interprofessional physician-pharmacist team.
- To decrease the costs of low medication adherence in the healthcare system, decreasing the financial burden on society.
- There are successful MAEIs already implemented in other countries.

Vera et al. Ars Pharm. 2022; 63(3):263-273.

Payer Perspective Cons

CONS

- To pay for MAEI in the phase of implementation or persistence.
- Adherence improves, clinical outcomes may not.
- A MAEI including financial incentives will increase medication adherence only for the period of intervention, and not in the period following intervention discontinuation.
- Some pharmacist-led intervention programs to enhance medication adherence were not considered cost-effective as compared to usual care with regard to self-reported medication adherence, beliefs about medicines, and QALYs.

Barankay et al. Jama Open. 2021; 4(5):e219211.
Bosmans et al. Front Pharmacol. 2019; 10:210.

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Open Discussion and Conclusions

Questions

- Please raise your hand to ask a question
- If we run out of time, please reach out the ISPOR MAP SIG with any questions (MedAdherenceSIG@ispor.org)

Conclusions

- The issue of who pays for MAEI is still an open question
  - It would partly depend on cost-effectiveness of such interventions
  - In addition to clinical studies, more research effort should be devoted to better understanding the effect of MAEIs on economic outcomes
- Close cooperation among key stakeholders involved in the reimbursement of MAEIs could establish a new benchmark for managing medication non-adherence

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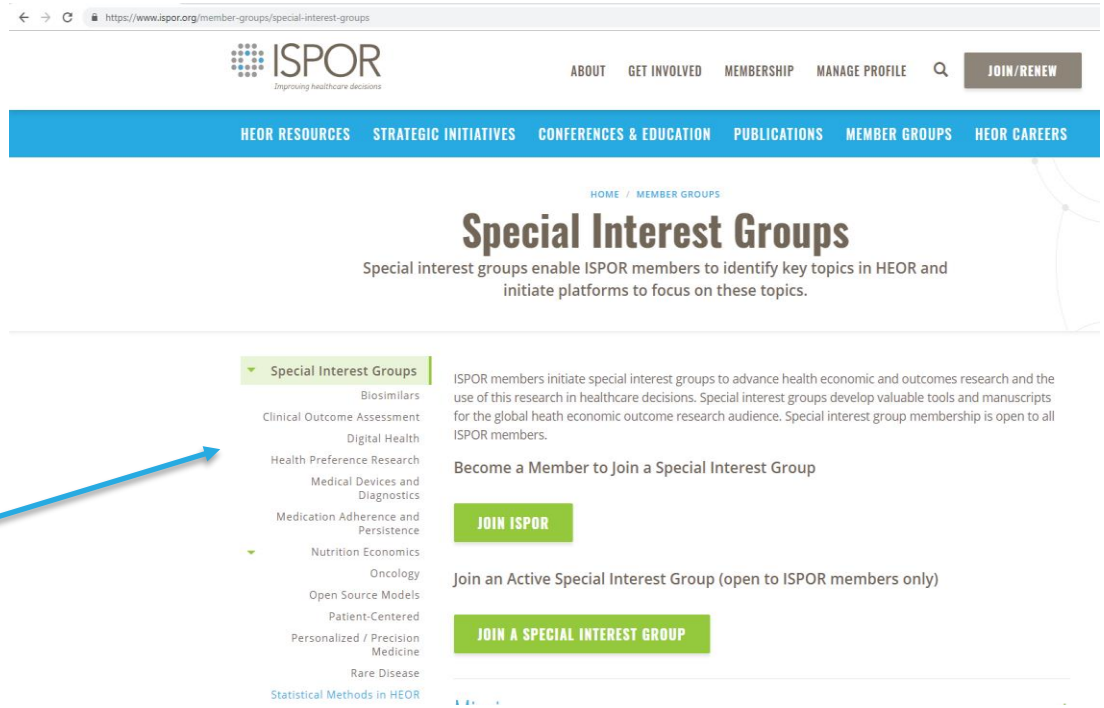

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Thank You for Attending!

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