

DRG - Costing and data analysis in Denmark

First step to improve insight into medication costing in DRG

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**DANISH HEALTH
DATA AUTHORITY**

Introduction

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Health Economics - Danish Health Data Authority

- Master of Science in Economics, University of Southern Denmark
- Working with DRG since 2008
- 6 years experience hospital level using DRG and ABF
- ~10 years making DRG/casemix at national level



**DANISH HEALTH
DATA AUTHORITY**

- **Health data and registers**
- **Health finance (DRG)**
- **Digital health solutions**
- **Cyber and information security**

- **Approximately 300 employees**
- ***DRG/casemix: 8 employees***

What we do in regards to DRG

- Maintain the Danish grouping logic
- Create the Cost Database (hospital and national level)
- Calculate DRG-tariffs based on Cost Database

- Data collection
 - Use mostly national registers (+also some extra data)
 - Distributed cost accounts from hospitals

- Dataflow (weekly)
 - DRG-data (DRG-enriched National Patient Registry)
 - Used by all regions as the common dataset
 - Imported into local BI-systems

Agenda

- Use of DRG in Denmark
- Recap of major revisions of DRG
- Upcoming revision on medicine in DRG

The Danish healthcare system

Universal coverage

Free &
equal access

Mainly financed by
general taxes
(~84 %)

A high degree of
decentralization

National Level



Ministry of Health

- Legislation
- National health policies
- National targets
- Overall economic framework
- Structural planning
- Planning of medical specialties across regions and hospitals
- Clinical guidelines
- Auditing (patient safety etc.)

Regional Level



5 regions

- Hospitals (somatic)
- Psychiatric care
- General practitioners (family doctors)
- Adult dental care
- Other private practitioners

Local Level



98 municipalities

- Preventive care and health promotion
- Elder care
- Non-hospital rehabilitation
- Treatment of alcohol and drug abuse
- Child nursing

Use of DRG in Denmark 2024



- Redistribution of funding (somatic hospitals)
 - Interregional payments uses national DRG-tariffs*
 - Municipal co-financing of hospital care
- Measuring productivity
- Transparency in cost – a common language
- BI-data at regional/hospital level

Major revisions to DRG in Denmark

2018: One common grouping logic

Not *where* (inpatient vs outpatient or organisation differences), but *how* the patient is treated.

2019: New national patient registry (NPR3)

3rd revision since 1972, new reporting standard
No longer definition of inpatient/outpatient
DRG-system adapted to new data source

2023: Telemedicine – grey zones

Not *where* (physically vs virtually), but *how* the patient is treated.

2026-27: Medication

Improve quality of DRGs – giving more options in the future
Less manual reporting, freeing up staff time
More insight – less work

We know a lot about patients cost

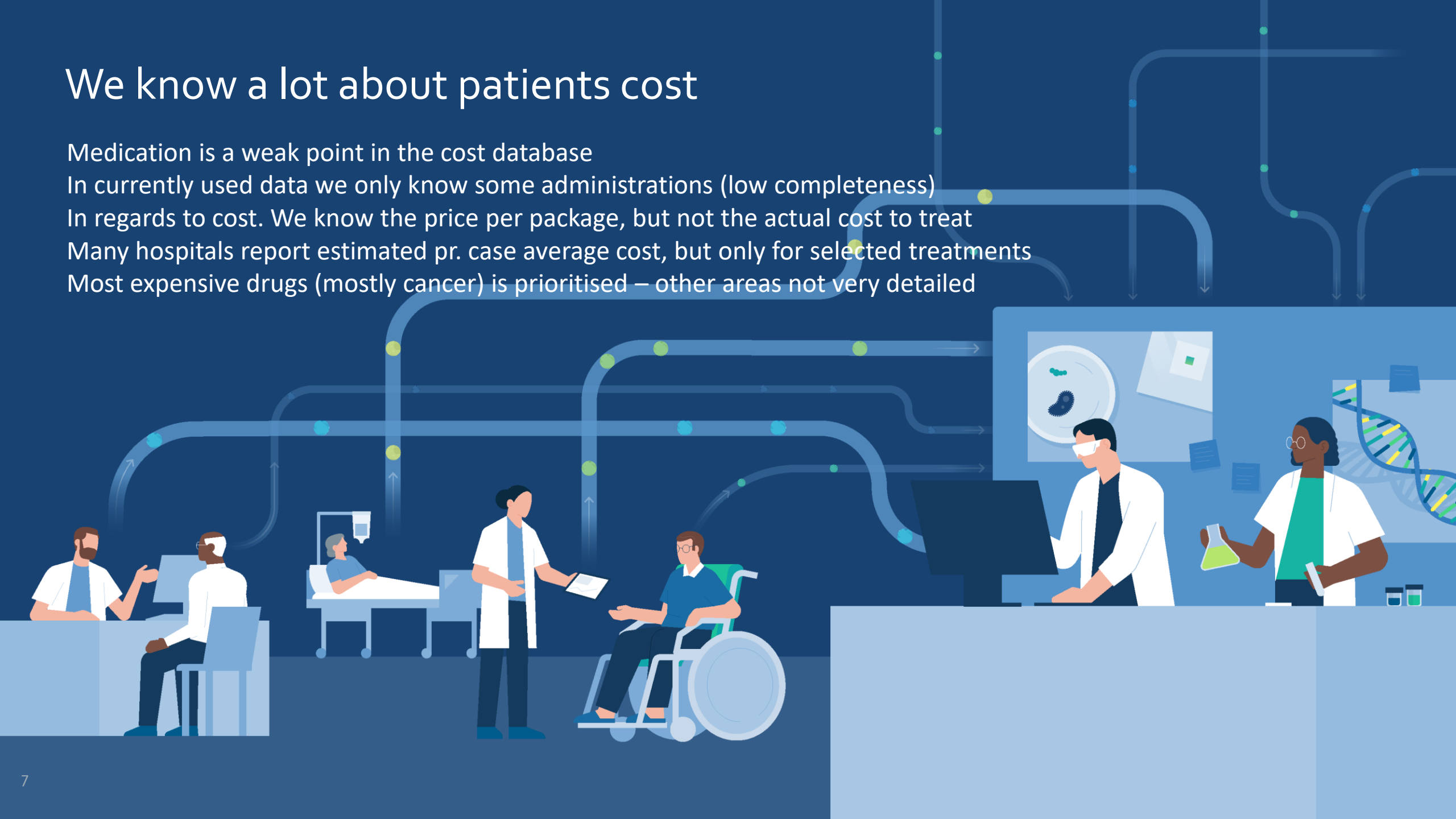
Medication is a weak point in the cost database

In currently used data we only know some administrations (low completeness)

In regards to cost. We know the price per package, but not the actual cost to treat

Many hospitals report estimated pr. case average cost, but only for selected treatments

Most expensive drugs (mostly cancer) is prioritised – other areas not very detailed



National Hospital Medication Register (HMR)



Established 2018

Purpose to increase insight into *who gets what medicine, at what cost*. To help calculate better tariffs.

- Detailed information on administrations
 - Public hospitals
 - Registrations from the hospital information systems
- Quality and completeness low in beginning. Reporting standard 2.0 has as goal to improve on this effective this year
- ~50 mio administrations 2023.
- ~2000 ATC codes, expected to implement ~500 in DRG

We hope to benefit from HMR



Automatic
administrations
reporting



High completeness
Less double registrations



“automatic”
medicine cost



High transparency in cost
Low maintenance in cost
database

Two steps

First step



Setup dataflow, so data from HMR can be used in DRG
Update the logic so we start utilising the information

Then



Improve tariffs utilising better data quality and then
add on cost information

What we will use from National Hospital Medication Register (HMR)



Medicine: ATC*-code (although more detailed drug information is available)



Patient identification: contact ID in NPR3 (national ID, time and date etc. also present)



Cost: Cost per individual dose/administration (different price information is available)



Administered at hospital or



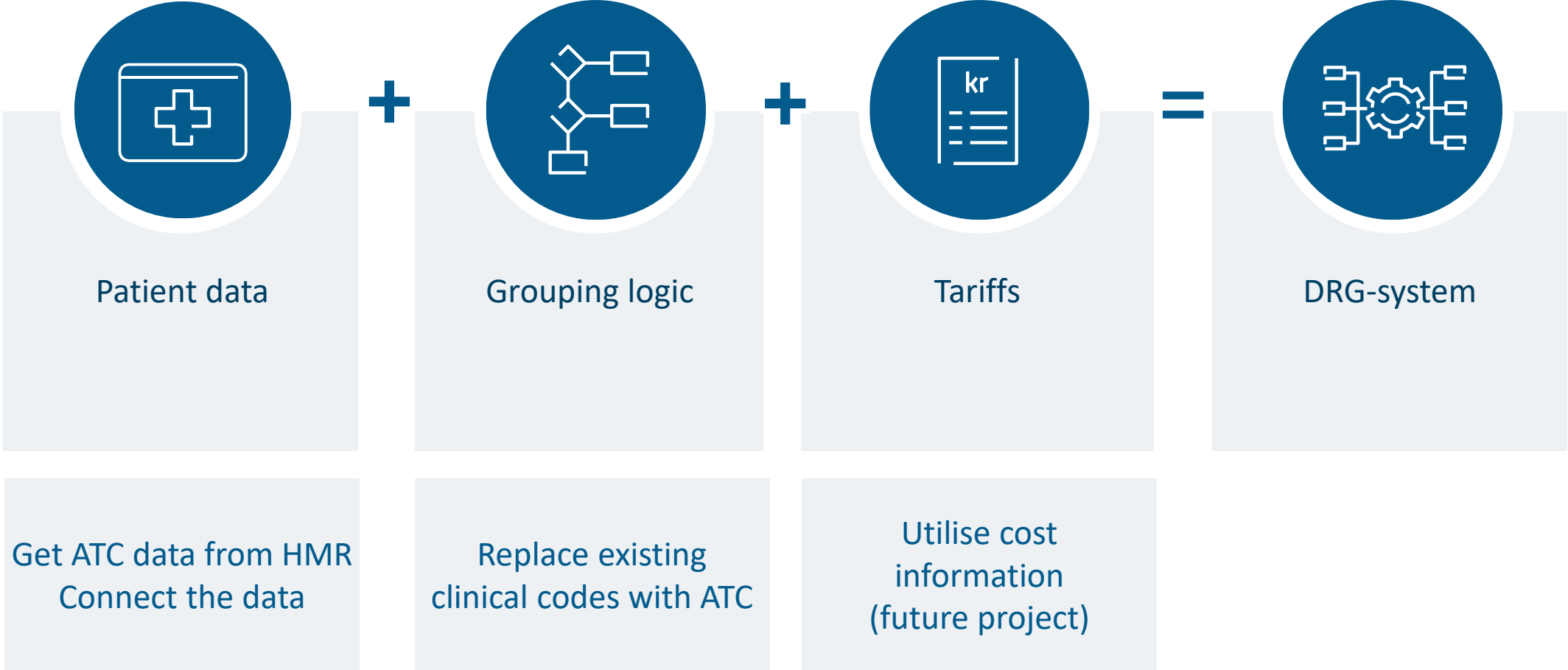
dispensed for home use (“to go”)
(as of now not part of DRG-system)

Costing of medicine – future project

- For DRG costing purposes we want to know the *true cost* – or a close proxy to that
- Challenges with medicine costing
 - Pricing of medicine changes over time, regions have different prices
 - Price at buying time might not equal price at administration time
 - Price per package. Calculation needed to find price per dose.
- Benefit of using HMR
 - Gives a calculated cost per administration providing us with an estimate
 - Price is calculated using package price and administered dose.
 - If low data quality on administered dose - we need to “massage” data. (HMR 2.0 should improve data quality)
- Use cost from HMR as cost weights
 - To secure 1:1 connection to hospital accounts.



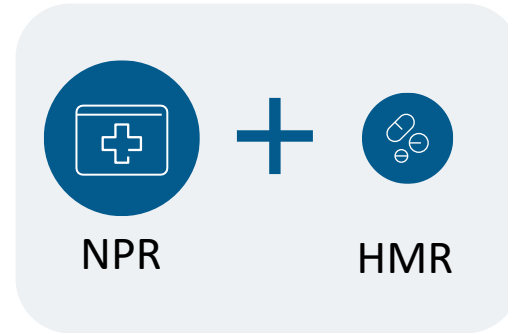
Changing the DRG-system



Getting the dataflow ready

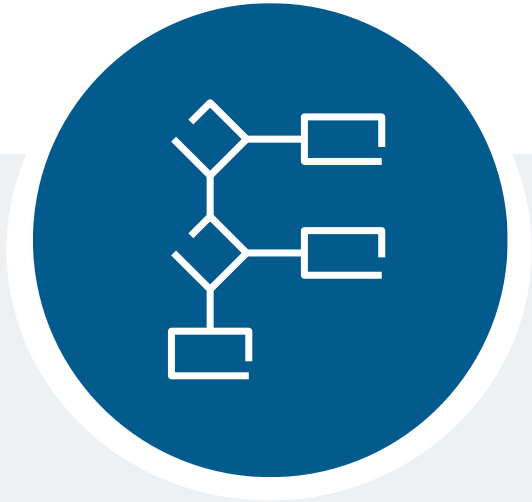


Patient data



- Connect information from HMR to NPR. Hospitals report the contact ID in NPR to HMR, so should be “plug-n-play”.
- Only relevant information implemented in DRG-data, but link back to HMR for full information.
- ATC will be handled as a any other procedure, but kept separate since it’s a difference source.
- *Awaiting the implementation of HMR 2.0 in our Datawarehouse*

Changing the DRG-logic



Grouping logic

ATC in HMR will be used as a *marker* instead of SKS-codes in NPR

Conversion from SKS to ATC:

SKS: BOHA02A Treatment with wafarin

ATC: B01AA03 Warfarin

Some SKS-codes are less precise and some combined with intake method fx injection in jaw joint with a non-specific type of medicine.

→ Needs to be addressed after proof of concept

Most affected DRGs are the 10 DRG-groups that are "medication price groups", where medication cost is the major cost in the treatment.

We expect to see more activity in affected groups.

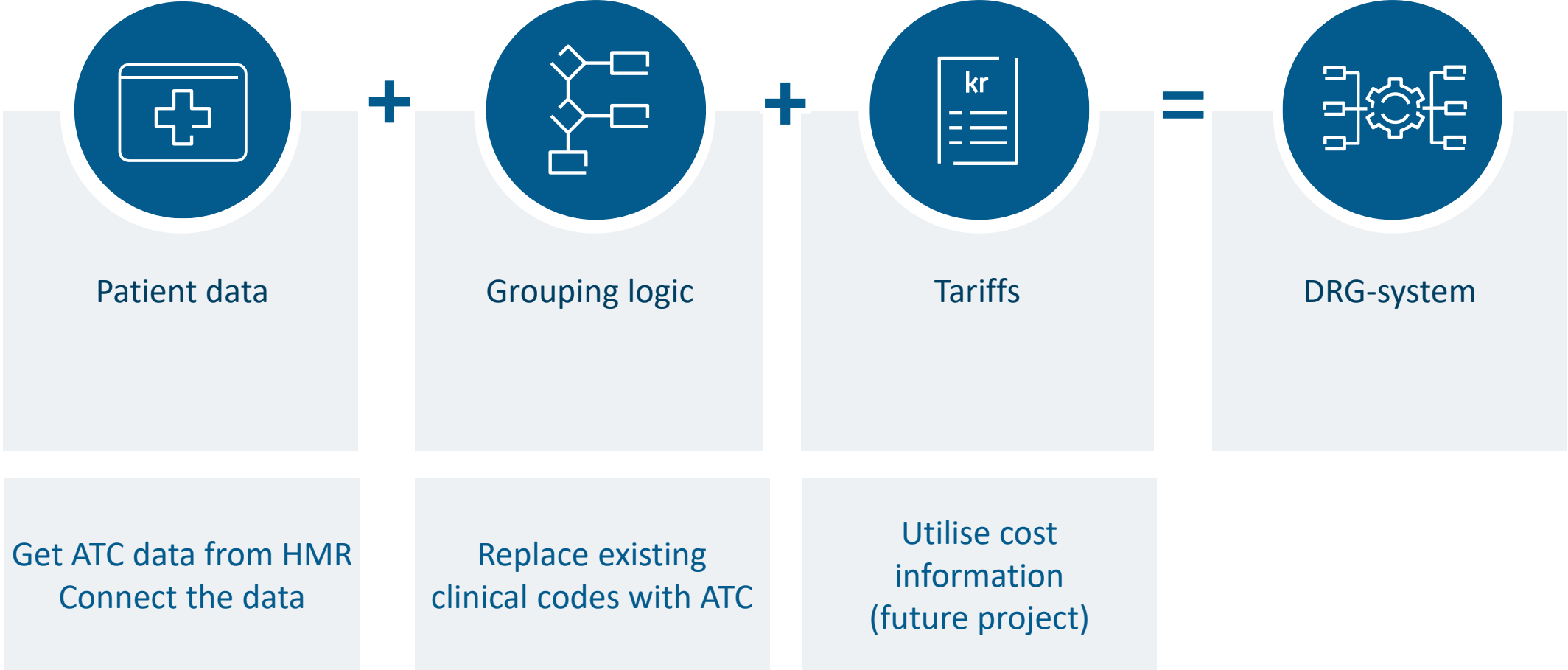
Improving the cost database and tariffs



Tariffs (Cost Database)

- Goal: To assign the ***right cost to the right patient.***
- Current state is good, but not precise: Average price of high cost medication assigned to a patient groups with specific criteria
- Future: Each individual contact will get the calculated cost.

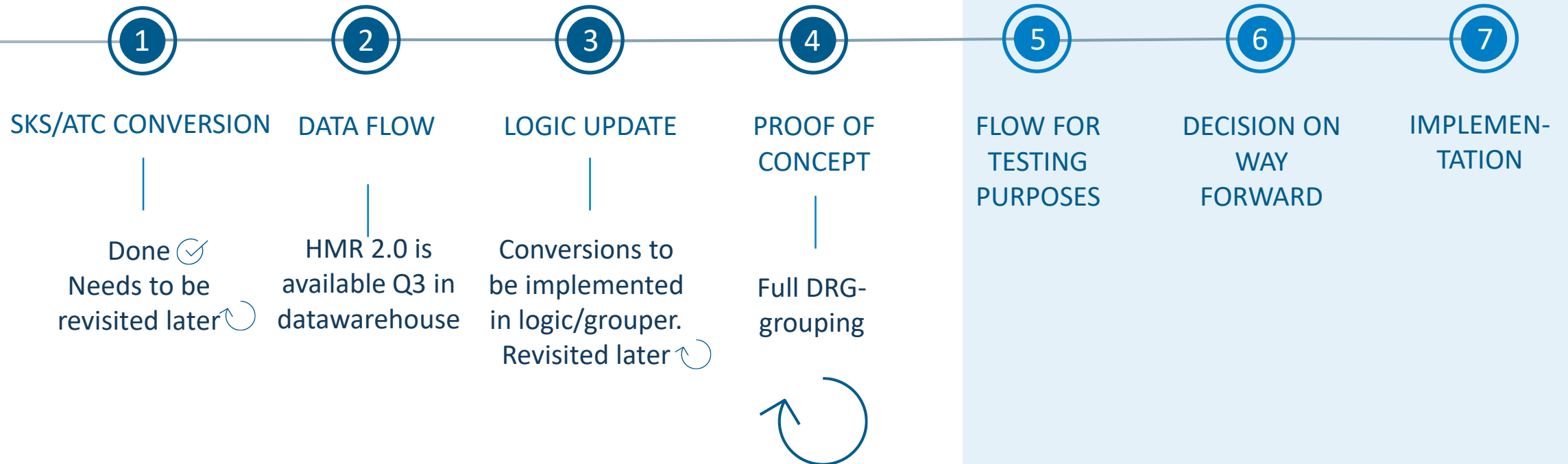
Changing the DRG-system



2024

2025

2026-



Towards a better DRG-system, step by step

Questions?

