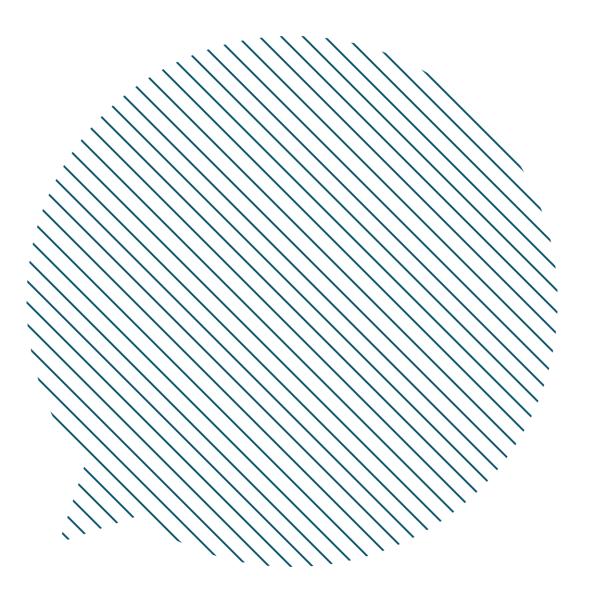


# Collaboration activities and digital health care – Challenges for cost analysis

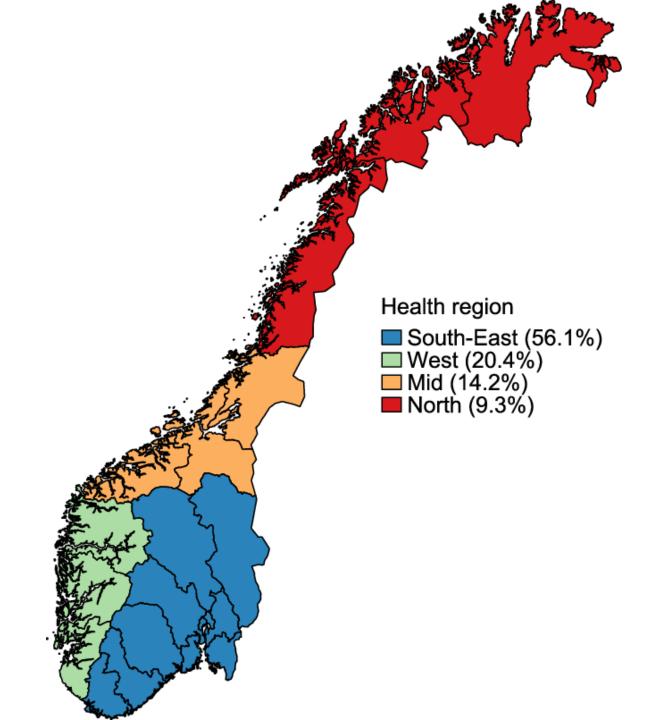
PCSI Reykjavik 28.Sept 2022

Ann Lisbeth Sandvik and Jostein Bandlien



## Health Care system in Norway

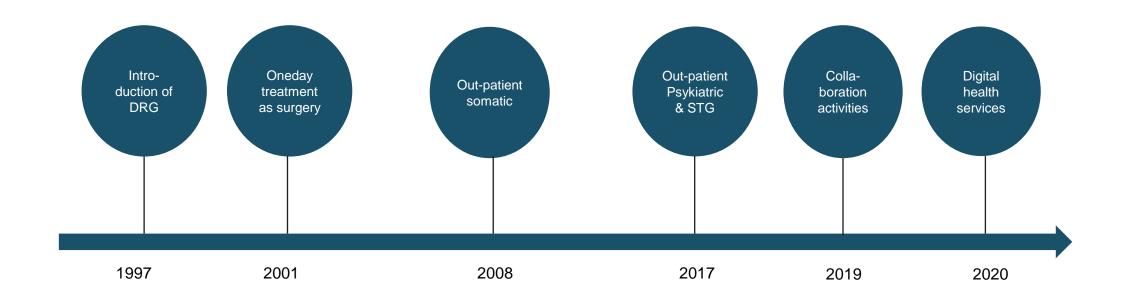
- Global coverage system
- Mainly publicly funded
- Two main authority levels with different funding systems
  - Municipalities (356) which are responsible for the primary care and are mainly block granted
  - Regional health authorities (4) which are responsible for the specialist health care (hospitals). They are partly financed by block grant and partly by activity-based funding by DRG





## Developement of the DRG-system – challenges for cost calculation

Timeline



STG – Special treatment groups



#### Cost calculation model



- The model has been developed to finance hospital treatments by DRG
- The cost weight are annually updated
- National weights



#### **Datasources**

- The National Patient Register (NPR)\* which contains all information about patient treatment in hospitals;
  - a) administrative data such as place and time of treatment and information on referrals to treatment and waiting time
  - b) demographic information such as each patient's sex, year of birth and residency at the municipality level
  - c) coded medical information such as diagnoses and surgical, medical and radiological procedure
  - d) reimbursement information
- A separated register gives us information about the patient's consumption of drugs given at home and the cost of these drugs
- Cost per patient data reported from our hospital (DRG-level)

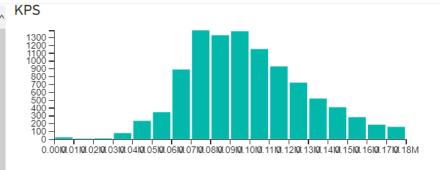
\*The Norwegian Patient Registry and the Norwegian Registry for Primary Health Care

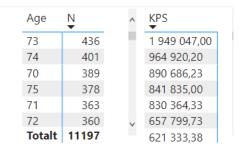


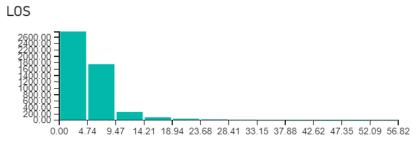


#### **Cost calculation model**

Hospital	N	LOS	KPS	Age
Vestre Viken HF	1431	3,37	111 101,77	72,57
Sykehuset Innlandet HF	1260	3,67	87 614,71	73,00
Helse Bergen HF	982	4,50	108 098,34	70,66
Akershus universitetssykehus HF	838	4,98	114 496,03	74,26
St. Olavs Hospital HF	786	3,48	83 726,45	69,81
Helse Møre og Romsdal HF	729	3,44	93 284,00	73,05
Sørlandet Sykehus HF	722	3,50	89 387,05	73,63
Sykehuset Østfold HF	706	3,40	87 642,78	74,73
Sykehuset i Vestfold HF	485	3,68	84 195,30	76,29
Universitetssykehuset Nord-Norge HF	433	5,26	121 495,62	73,82
Diakonhjemmet sykehus A/S	409	4,86	111 453,18	76,24
Sykehuset Telemark HF	356	3,97	95 391,05	75,41
Helse Nord Trøndelag HF	340	4,52	105 348,67	73,41
Nordlandssykehuset HF	339	4,90	118 127,80	74,43
Helse Fonna HF	283	4,67	117 123,95	76,93
Haraldsplass Diakonale Sykehus AS	280	5,27	157 687,47	74,00
Oslo universitetssykehus HF	257	8,62	189 141,78	68,34
Helse Førde HF	245	4,23	118 887,33	73,80
Helgelandssykehuset HF	192	4,61	108 242,24	73,04
Finnmarkssykehuset HF	124	4,74	108 948,57	71,41
Totalt	11197	4,14	104 482,00	73,21





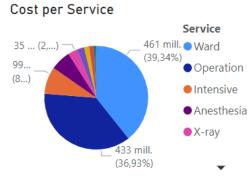


90 845,92

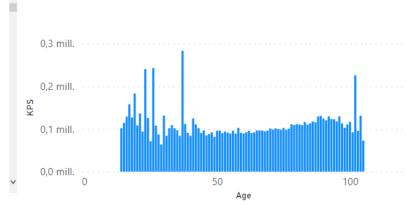
2,57 5,17 124 476,59

2,04 4,14 104 482,00

DRG Point LOS KPS



ICD10	N	^		Procedure	N
⊞ M161	5239			⊕ OBAB00	4634
⊕ S720	4881			⊞ NFB20	3355
⊞ M160	1968			⊞ NFB12	3318
⊕ Z094	879			⊞ NFB40	2273
<b>⊞ I10</b>	863			⊞ NFB30	2158
⊕ D62	860			⊕ OAAJ00	1094
∄ Z090	856			⊞ ZXA00	1012
<b>⊞</b> S7200	733			⊞ ZXA05	966
⊞ E119	485			⊞ REGG00	940
<b>⊞ 1489</b>	371			⊞ WDAL30	775
<b>⊞ 1480</b>	368		,	⊞ WDAP77	746
Totalt	30858	v		Totalt	30243



6657

4540

Totalt 11197

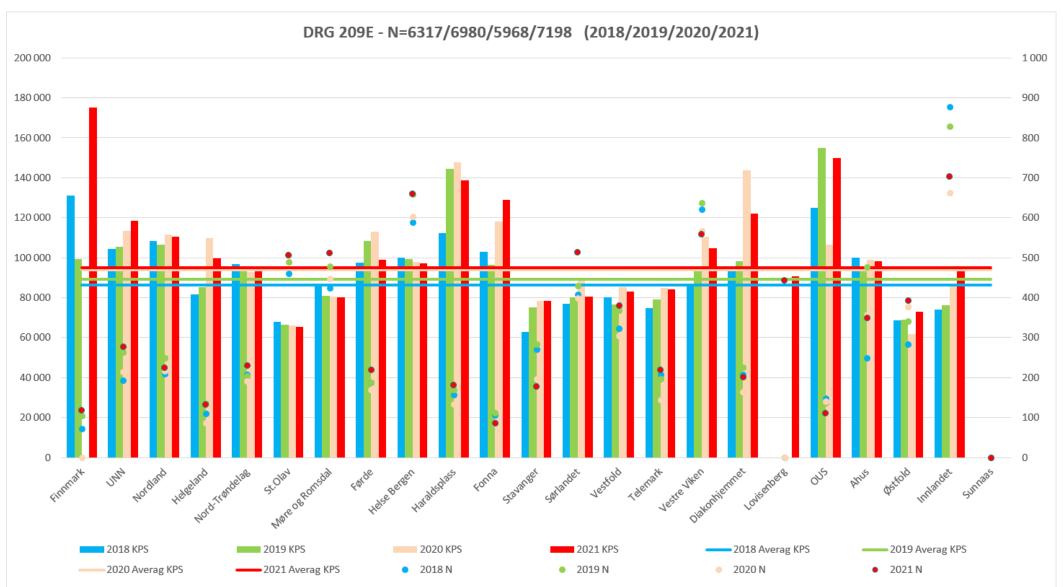
⊕ 209D

Grouping String	
1,10248,H,3,,M163,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.,,,,,,,,,,NFB20,,,,,,,,,,,,,,,,,
1,10248,H,3,,M167,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
1,10248,H,7,,M166,,Q777,,,,,,,	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1,10614,H,3,,M167,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.,,,,,,,,,,NFB20,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1,10980,H,26,,M8705,,M255,,Z090,,209E,,9 ,,,,,,OBAB00,OAAJ00,NFB20,NPK_	
1.1000011.1.1.1.55	NIEDOG ID 1 100 IG 1 10
1,10980,H,4,,M166,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	



#### **Quality in data**

DRG: 209E - Hip replacement



## Now - Shifting focus for the reimbursement-system

- Sustainbility
- Collaborative activities
- Digital services
- Treatment at home

- Why this shift in focus?
- Demographic changes
  - Increased life expectancy
  - New treatment mehods help more people
  - More elderly people
- Shortage of health personnel/health skills
- Need to reduce growt in health expenditure



### Shift in focus – challenges in cost calculation

The reimbursement system must support good professional practice



Both the DRG-system and cost calculation depends on available data for developement

- New activities New grouping system STG
- Different categories different solutions:
  - Drugs at home
  - Dialysis at home
  - Online treatment; digital treatment programs
  - Other digital treatments, i.a video, telephone, medical monitoring (PM)
  - Collaboration with the healthservices in the municipalities; i.a different kind of teams
- For cost calculation we have to change modus:
  - From historical data to normative approch



#### Experiences from the last years of developement in our reimbursementmodel

- All developement requires access to good data
- The definitions must be consistent
- Collaboration activities require a common understanding of what the service contains
- There must be agreement on which cost elements are to be included, and who are paying for them
- New services into the financing model involve a higher risk
- National guidelines must be updated



#### Thanks – Any Questions?

