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NordDRG – Developing grouping  
logic for psychiatric care

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What's all the hassle about..?

Why was this project needed?

# Background

- Psychiatry, as a field of medicine, is complex
  - Psychiatric illnesses, their symptoms as well as diagnostic and treatment options are often multidimensional
- NordDRG grouper has not been able to produce information on the level the field of psychiatry would need
  - Grouping variables used by the grouper are mainly limited to diagnoses and some other patient characteristics, which are not sufficient to create clinically and economically meaningful groups

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How did we answer to the call?

From inch to action

# Development project

- The aim of the project was to update the NordDRG grouping rules for psychiatry the way it will produce information the field needs
  - Clinical and economic view
- Development group
  - Members from FCG, NCC, Finnish institute of national health and welfare and several Finnish hospital districts
    - Represent both clinical and economic expertise
  - First meeting 1/2021
  - Meetings on Teams
- For analysis the data of five university hospitals of Finland was used
  - Iterative process of developing and testing
  - Using test-grouper developed for the project the economical effects of the changes made as well as their effects on statistical variables were analysed
- Splitting criteria:
  - $\geq 20\%$  difference in costs
  - $N \geq 50$  per group

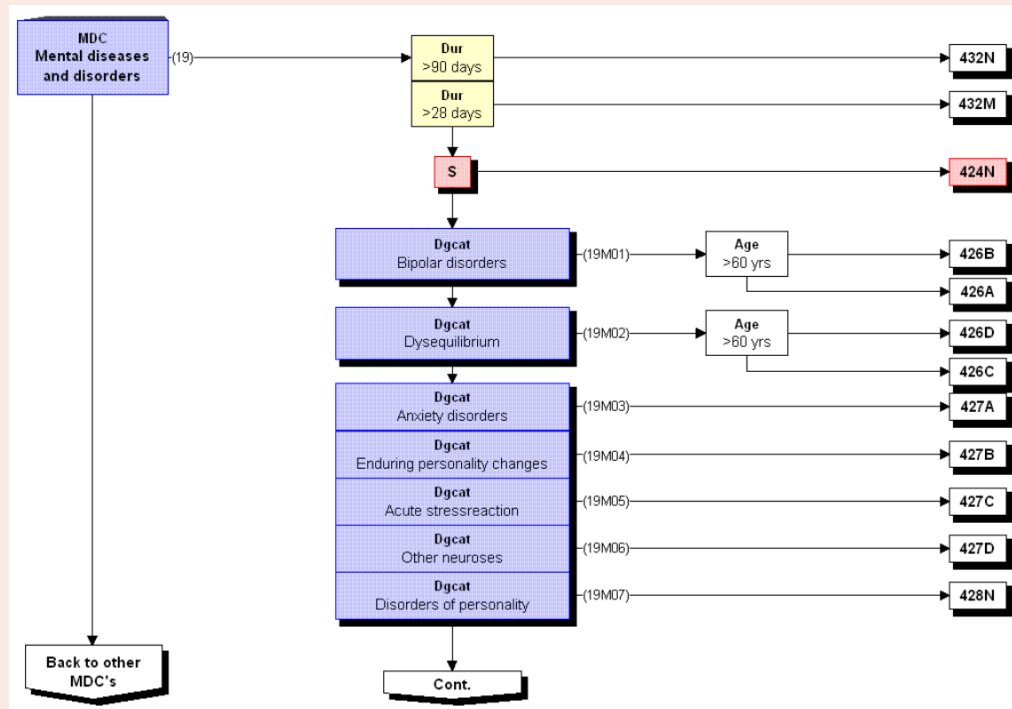
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Road to success and outcome

A brief overview of what's been done

# Diagnosis categories

Current grouping logic



- A *diagnosis category* is a group of similar diagnoses under a certain MDC (major diagnostic category)
  - MDC for psychiatry is 19 Mental diseases and disorders
- Currently there are 19 diagnosis categories in MDC 19
- Update of psychiatric diagnosis categories
  - Regrouping psychiatric diagnoses  
-> 29 new diagnosis categories

# Example (inpatients): Diagnosis categories

- Current grouping logic

19M20 Alcohol and drug abuse

DgCat*	Mc	Cv	N
Alcohol and drug abuse	4207	117%	1097

- Updated grouping logic

19M20 Alcohol and drug abuse

19M40 Alcohol addiction

19M49 Opiate addiction

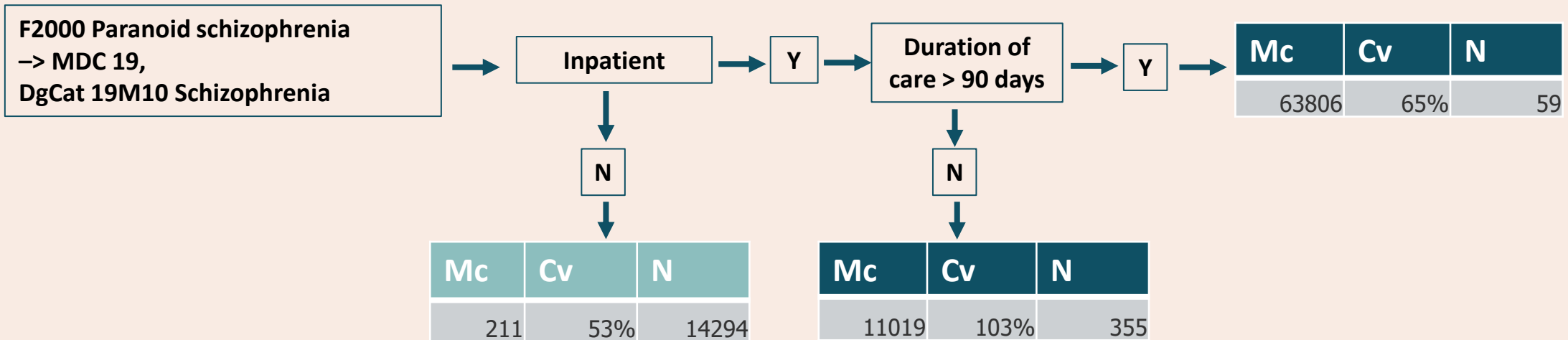
19M46 Other addiction

DgCat	Mc	Cv	N
Alcohol and drug abuse	3131	101%	424
Alcohol addiction	3776	123%	484
Opiate addiction	9495	75%	132
Other addiction	3629	112%	57

\*DgCat = Diagnosis category, Mc = Mean cost, Cv = Coefficient of variation, N = Number of cases

# Duration of care

- ✓ The updated grouping logic is based on division into inpatient / short therapy groups
  - ✓ Duration of care  $\geq 3$  days /  $< 3$  days
- ✓ For inpatients the long-term patients (duration of care  $> 90$  days) are grouped into a separate DRG



# Non-psychiatric (OR-) procedures

- ✓ Inpatients: OR1 (performed in an operating room environment)
  - ✓ OR1 procedures related to one's gender-identity (DgCat 19M53 *Gender-identity related contacts*): DRG P01 OR procedure due to gender-identity related contact
  - ✓ Other OR1 cases: DRG 424N O. r. procedure w principal diagnosis of mental illness or abuse
  
- ✓ Short therapy: OR1 or OR2 (significant outpatient procedure, e.g., endoscopy)
  - ✓ OR1 procedures related to one's gender-identity: P01O OR procedure due to gender-identity related contact, short therapy
  - ✓ Other OR1 cases: DRG 434O O. r. procedure w principal diagnosis of mental illness or abuse, short therapy
  - ✓ OR2 cases: DRG 819O Non-extensive procedure of mental illness, short therapy

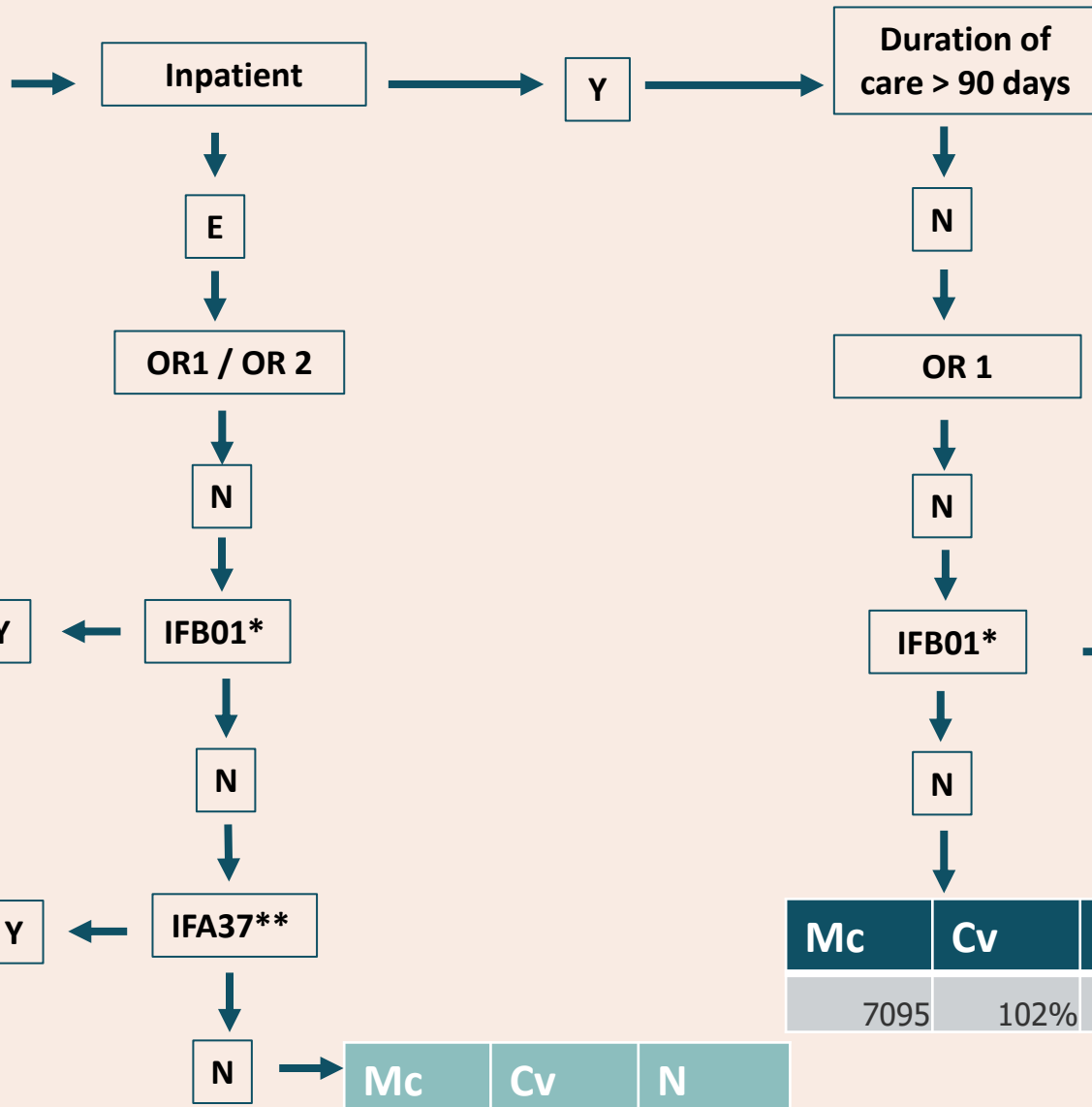


# Psychiatric procedures

- Psychiatric procedure codes were introduced in Finland in 2018
    - In current grouper the psychiatric procedures don't affect the grouping
  - By analysing the data we recognized the procedures that are either clinically or economically meaningful:
    - Neuromodulation treatments (IFB01 Electroconvulsive therapy ECT, IFB02 Transcranial magnetic stimulation TMS, IFB03 Deep brain stimulation DBS etc.)
      - for inpatients and short therapy
    - IFA37 Ketamine therapy
      - for short therapy only
- > Cases involving one of these procedures will be grouped into a separate DRG regardless of the diagnosis in question

# Example: Psychiatric procedures

F314 Bipolar affective disorder, current episode severe depression without psychotic symptoms → MDC 19, DgCat 19M01 Bipolar disorders



Mc	Cv	N
319	53%	363

Mc	Cv	N
203	22%	36

Mc	Cv	N
181	50%	1900

Mc	Cv	N
9850	53%	3

Mc	Cv	N
7095	102%	49

\* IFB01 = Electroconvulsive therapy ECT, \*\*IFA37 Ketamine therapy

# Complicated cases

- Some secondary diagnoses may complicate the case
  - So called cc-property (maintained list of over 4000 diagnoses)
  - Complicated cases need more resource, including economic resource
- Complicated cases were related to substance abuse and their main diagnoses belonged to the diagnosis categories
  - 19M40 Alcohol addiction
  - 19M20 Alcohol and drug abuse
- Complicated cases (cc) are grouped to one DRG and not complicated (w/o cc) cases to another DRG

## Example: Complicated cases

- ✓ Inpatients, duration of care < 91 vrk, not OR1, not neuromodulation treatment

DgCat	Mc	Cv	N
Alcohol addiction (all)	3776	123%	484
Alcohol addiction (complicated)	6786	122%	85
AAcohol addiction (not complicated)	3135	98%	399

- ✓ The cost difference between non-cc and cc is 116 %
- ✓ The amount of cases in both groups is sufficient enough  
-> meets the splitting criteria

# Age

- Patient's age may affect the care of a patient as well as the costs involved
  - In most of these cases the care of younger patients is more expensive
- The division into two different groups will be made for following diagnosis categories
- <18 / 18 or older
  - 19M03 Anxiety disorder
  - 19M45 Depression
  - 19M51 Psychosis
- <25 / 25 or older
  - 19M48 Neurocognitive disorder
- Different age groups are grouped to different DRGs

## Example: Age

- ✓ Inpatients, duration of care < 91 vrk, not OR1, not neuromodulation treatment

DgCat	Mc	Cv	N
Ahdistuneisuushäiriö (kaikki)	5414	132%	442
Ahdistuneisuushäiriö, 18 tai yli	4096	110%	321
Ahdistuneisuushäiriö, < 18	8911	121%	121

- ✓ The cost difference between 18 or older and < 18 is 118 %
- ✓ The amount of cases in both new groups is sufficient enough  
-> meets the splitting criteria

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What happens next?

A look into the future

## Next steps

- Updated grouping logic is complete and tested
  - 66 new DRGs: 34 short therapy groups and 32 inpatient groups
- The project and its outcomes are presented in the NordDRG Expert group meeting in spring 2023
- Implementation in Finnish 2024 grouper version
- Annual development on basis of feedback from the users

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Thank you!

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