Gesundheit Österreich
GmbH

Comparison between drug-related deaths data from special and general mortality registers in Austria. Implications for monitoring and policy making

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Disclosure

I don't have any conflict of interest regarding this presentation.

Background DRD

» **'Drug-Related Deaths (DRD) and mortality among drug users'** is one of five key epidemiological indicators developed by EMCDDA to monitor the situation of 'problem drug use'

» Sources for (direct) DRD in Austria:
  » General Mortality Register (GMR) "Selection B" and
  » Special Register (SR)

» SR exists since the 90ies

Guidline for data collection and reporting

European Monitoring Centre
for Drugs and Drug Addiction

Drug-Related Deaths (DRD)
Standard Protocol, version 3.2
2009

(from version 3.1 of 9 September 2005)

EMCDDA standard protocol for the EU Member States

to collect data and report figures for the Key indicator DRD

by the Standard Reitox templates

EMCDDA project CT.02.P1.05

Definition of direct DRD

» National/EMCDDA **case definition**:

> » **deaths happening shortly after consumption** of one or more illicit psychoactive drugs, and
> » **directly related to the pharmacological action** of the drugs

> » **Excluded** ("indirect DRD"): deaths **indirectly related** to the use of drugs like
> > » accidents while under influence of drugs
> > » concurrent factors of drug use (e.g. HIV where the infection was acquired through injection)
> > » suicide not due drugs (e.g. jumping out a window while under influence drugs)

General Mortality Register (GMR)

» Data from death certificates (national coverage)

» Based on WHO ICD-10 codes

» Coding of the underlying cause of death => single-cause analysis (multiple-cause analysis possible for about half the cases since 2015)

» Date collection and reporting (EU, WHO, …) by the national statistical office „Statistik Austria"

» Procedure :

  » National Statistical Institute: Sub-Selection from the GMR covering all „DRD-numbers" listed in the Standard Protocol

  » National Reitox Focal Point: Extracts data based on "Selection B" and submitts to EMCDDA in addition to SR

Selection B (GMR)

- » **Mental and behavioural disorders due to psychoactive substance use** („F-codes": F11.x, F12.x, F14.x–F16.x, F19.x)
  - » [.0 acute Intoxication]**
  - » .1 harmful use
  - » .2 dependence syndrome
  - » .3 to .9 others disorders
- » **External causes** („poisoning-codes")
  - » accidental poisoning (X-codes + T-codes)
  - » intentional poisoning (X-codes + T-codes)
  - » poisoning undetermined intend (Y-codes + T-codes)
- » **Selection B** (=DRD) based on the <u>underlying cause of death</u>

* dissolved and converted into external causes

Special Register (SR)

» National defintion, identical to „**Selection D**" (EMCDDA)

» Data collection by the Federal Ministry for Labour, Social Affairs, Health and Consumer Protection („Health Ministry")

» Collection of „suspicious cases" (300–400 cases by year) from

  » police

  » federal health authorities

  » forensic institutes/private autopsy experts

  » cases from GMR

» Basis of the **SR are autopsy reports**, in cases where no autopsy was performed the death certificate is used (only cases with explicit records like „drug overdose")

» Categorization and data entry by physician

Example 1: Underlying cause of death

ICD-10: F11.2 dependence with opioids

	Cause of death	**Approximate interval between onset and death**
I		
Disease or condition directly leading to death*	(a) central vegetative regulation failure	. . . .
	due to (or as a consequence of)	
Antecedent causes Morbid conditions, if any, giving rise to the above cause, stating the underlying condition last	(b) suspicion of opiatintoxication	. . . .
	due to (or as a consequence of)	
	(c) Long-term drug and alcohol abuse	
SR: direct DRD	or as a consequence of)	
	(d)	. . . .
II Other significant conditions contributing to the death, but not related to the disease or condition causing it	. . . .	. . . .
	. . . .	. . . .

*This does not mean the mode of dying, e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death.

9

Example 2: Underlying cause of death

ICD–10: F19.2 dependence w. multiple other

SR: indirect DRD

Cause of death

Antecedent causes
Morbid conditions, if any, giving rise to the above cause, stating the underlying condition last

leading to death

(a) Cardiac decompensation

due to (or as a consequence of)

(b) pneumonia

due to (or as a consequence of)

(c) multiple substance use (alcohol, methadone)

due to (or as a consequence of)

(d) ....

II
Other significant conditions contributing to the death, but not related to the disease or condition causing it

Approximate interval between onset and death

....

....

...

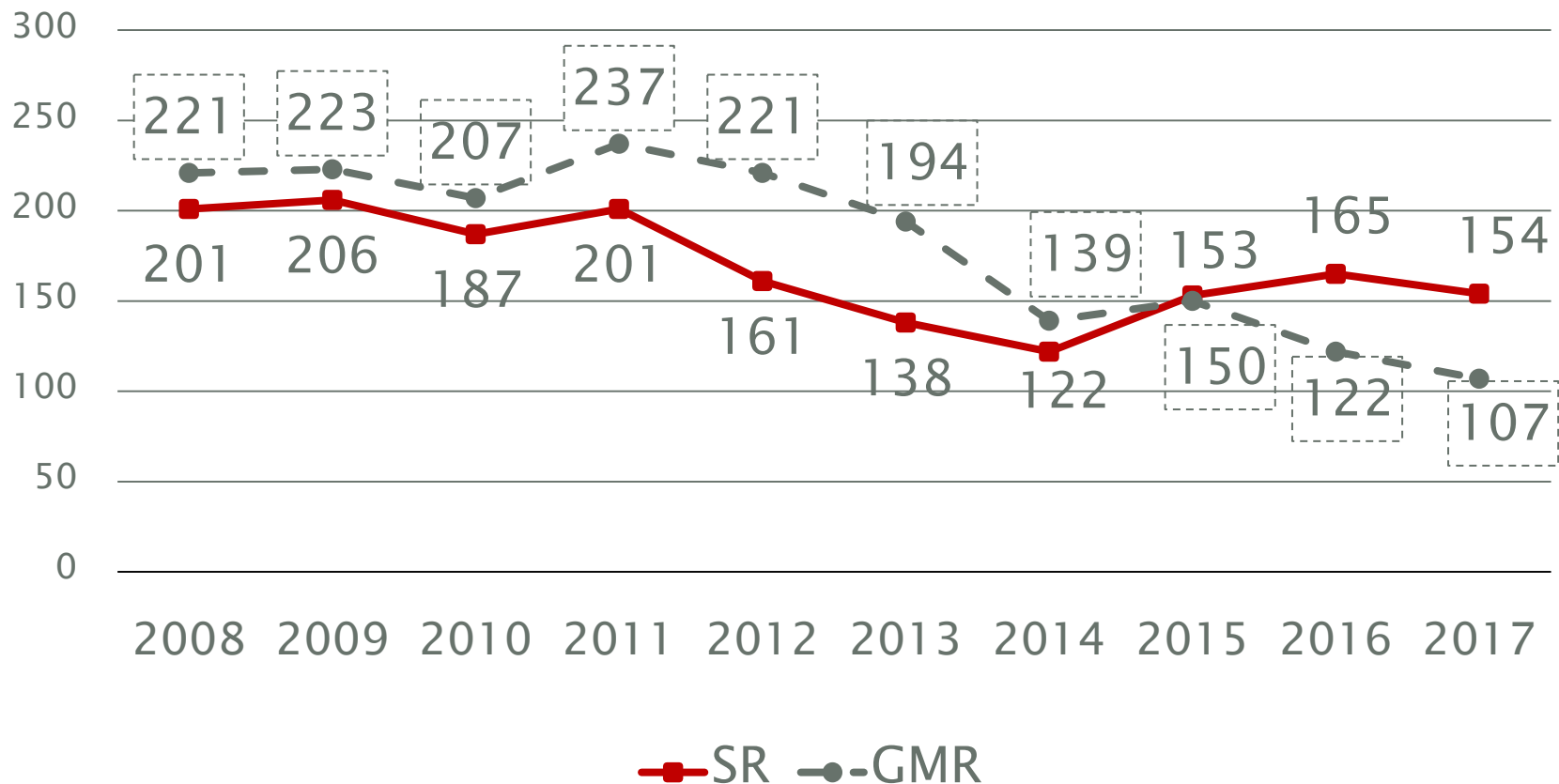......................

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This does not mean the mode of dying, e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death.

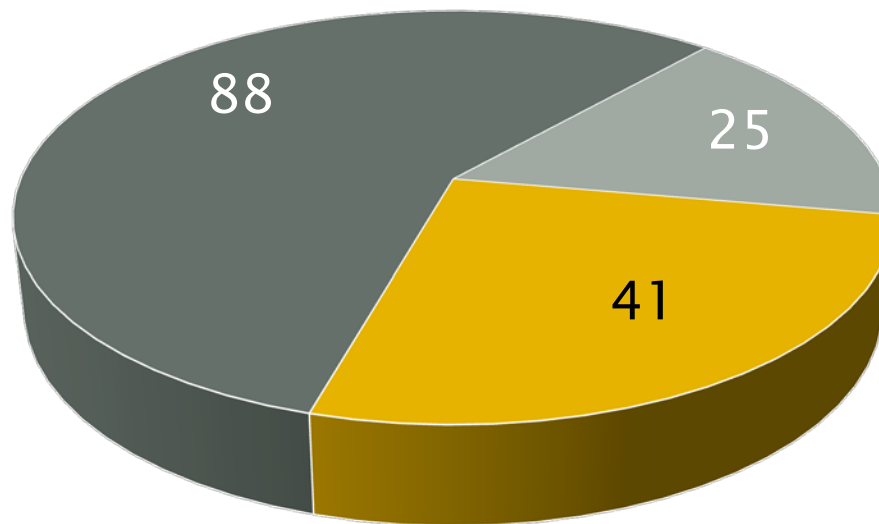# Case study 2017: Matching cases from SR & GMR
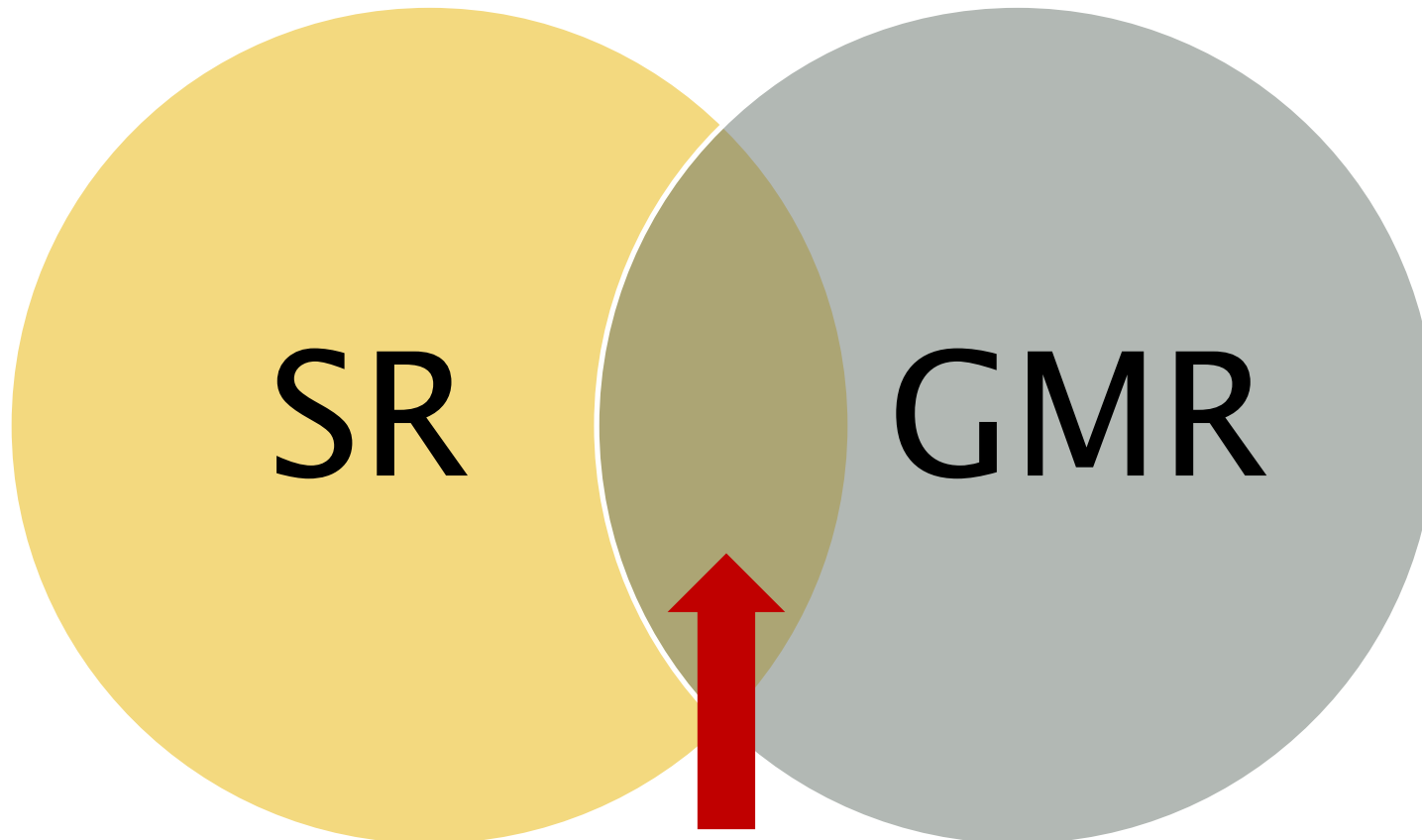
Absolute numbers of direct DRD in Austria:
SR („Selection D") vs. GMR („Selction B")

SR — GMR

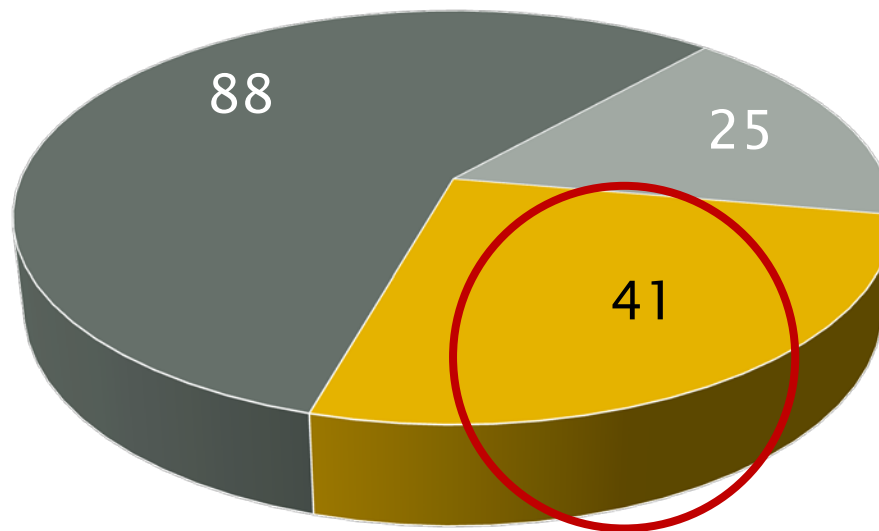# Case study 2017: Try to find Selection D (SR) in GMR

Selection D: 154 Cases

■ Selection B

■ Not in Selection B (DRD–number not included)

■ Not found in GMR (no DRD–number)

Case study 2017: Try to find Selection D (SR) in GMR

Selection D: 154 Cases

- ■ Selection B
- ■ Not in Selection B (DRD–number not included)
- ■ Not found in GMR (no DRD–number)

Case study 2017: Try to find Selection D (SR) in GMR

Selection D: 154 Cases

88

25

41

**less than 1/3
(27 %) overlap**

■ Selection B

■ Not in Selection B (DRD–number not included)

■ Not found in GMR (no DRD–number)
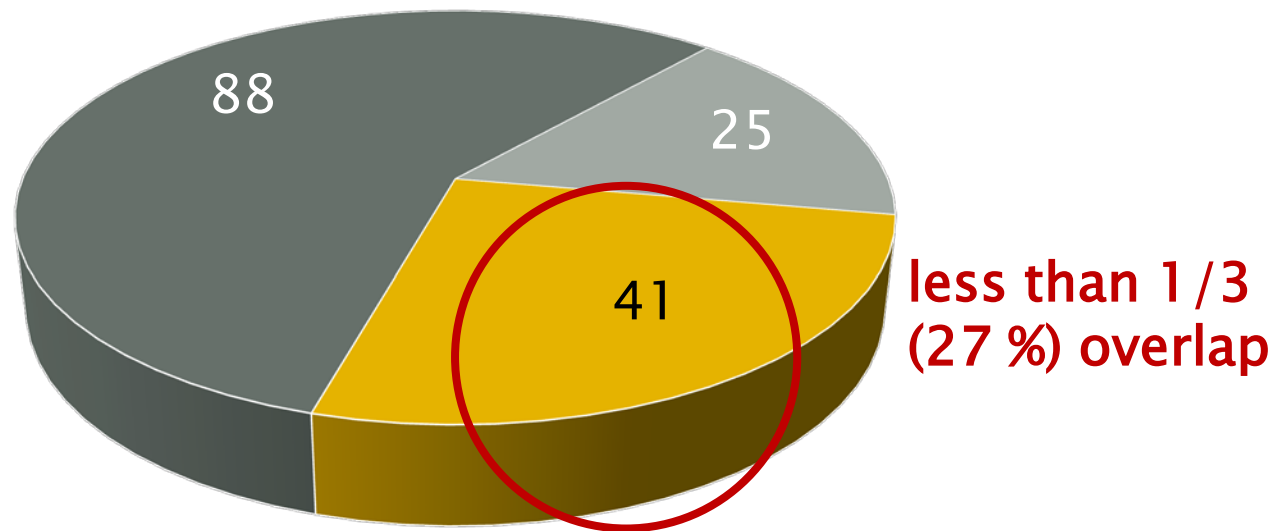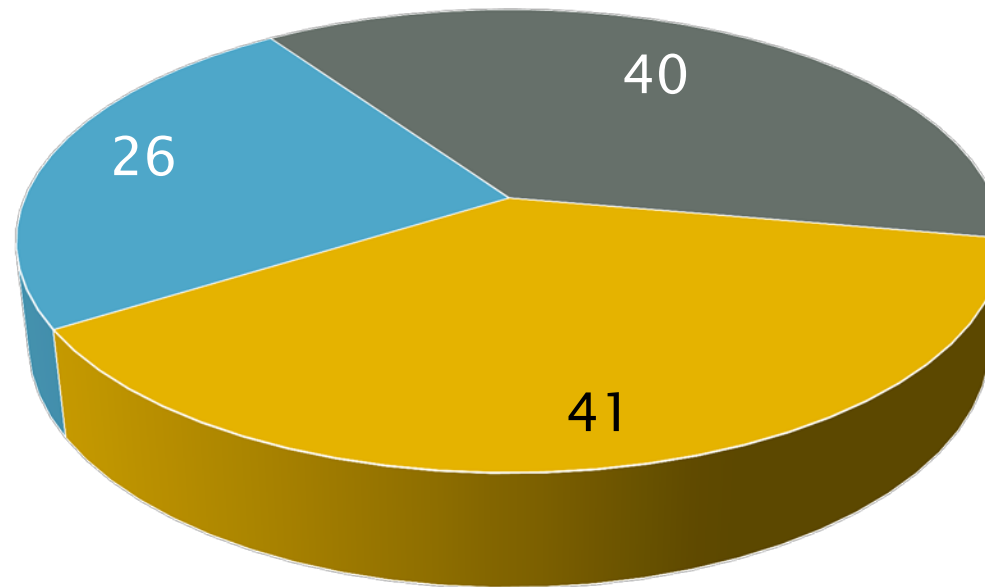
Case study 2017: Try to find Selection B (GMR) in SR

Selection B: 107 Cases

■ Direct DRD (=Selection D in SR)

■ Indirect DRD (SR)

■ No DRD (SR)

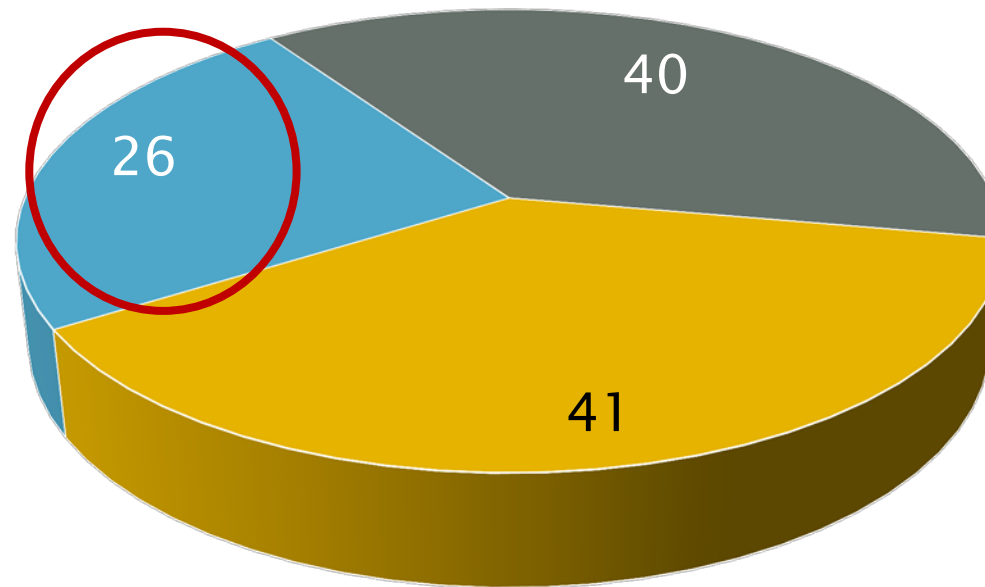# Case study 2017: Try to find Selection B (GMR) in SR

Selection B: 107 Cases

- Direct DRD (=Selection D in SR)
- Indirect DRD (SR)
- No DRD (SR)

Case study 2017: Try to find Selection B (GMR) in SR

Selection B: 107 Cases

■ Direct DRD (=Selection D in SR)

■ Indirect DRD (SR)

■ No DRD (SR)

Matching SR and GMR by ICD-10 codes
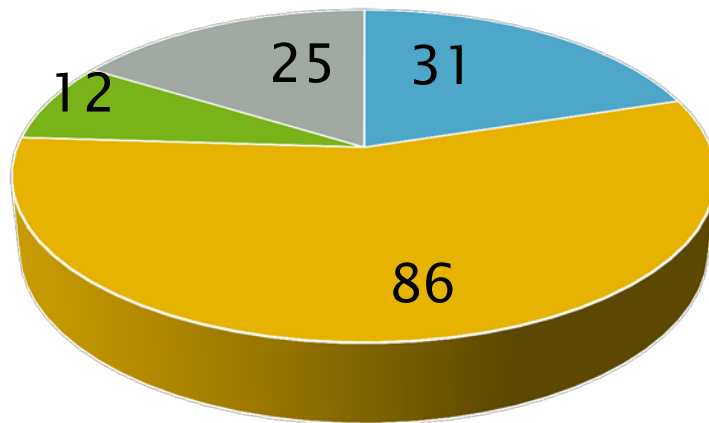
Selection D
(n=154)

F-Codes Poisoning-Codes ILL defined not found in GMR
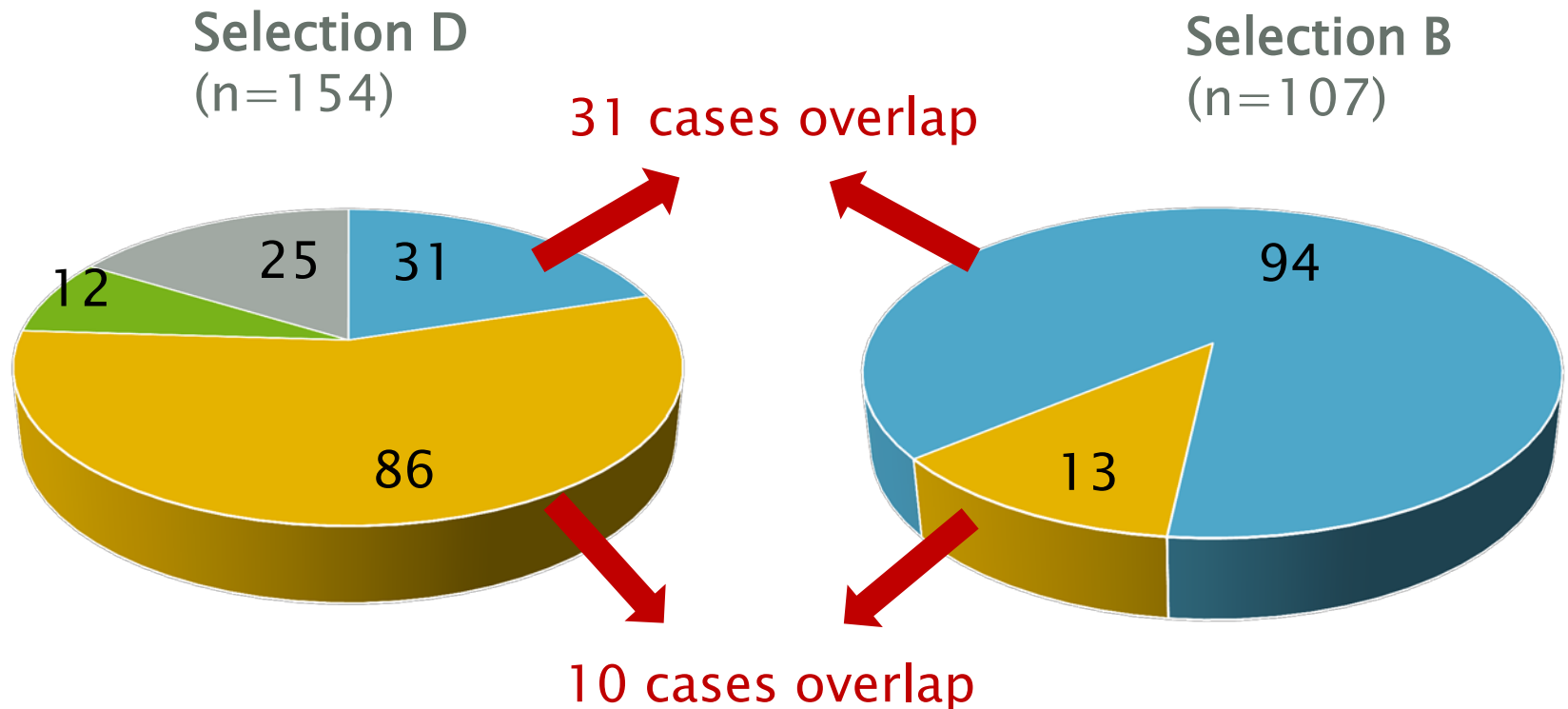
Matching SR and GMR by ICD-10 codes

Selection D
(n=154)

Selection B
(n=107)

31 cases overlap

10 cases overlap

25   31

12

86

94

13

■ F-Codes   ■ Poisoning-Codes   ■ ILL defined   ■ not found in GMR

Matching SR and GMR by ICD-10 codes

Selection D
(n=154)

Selection B
(n=107)
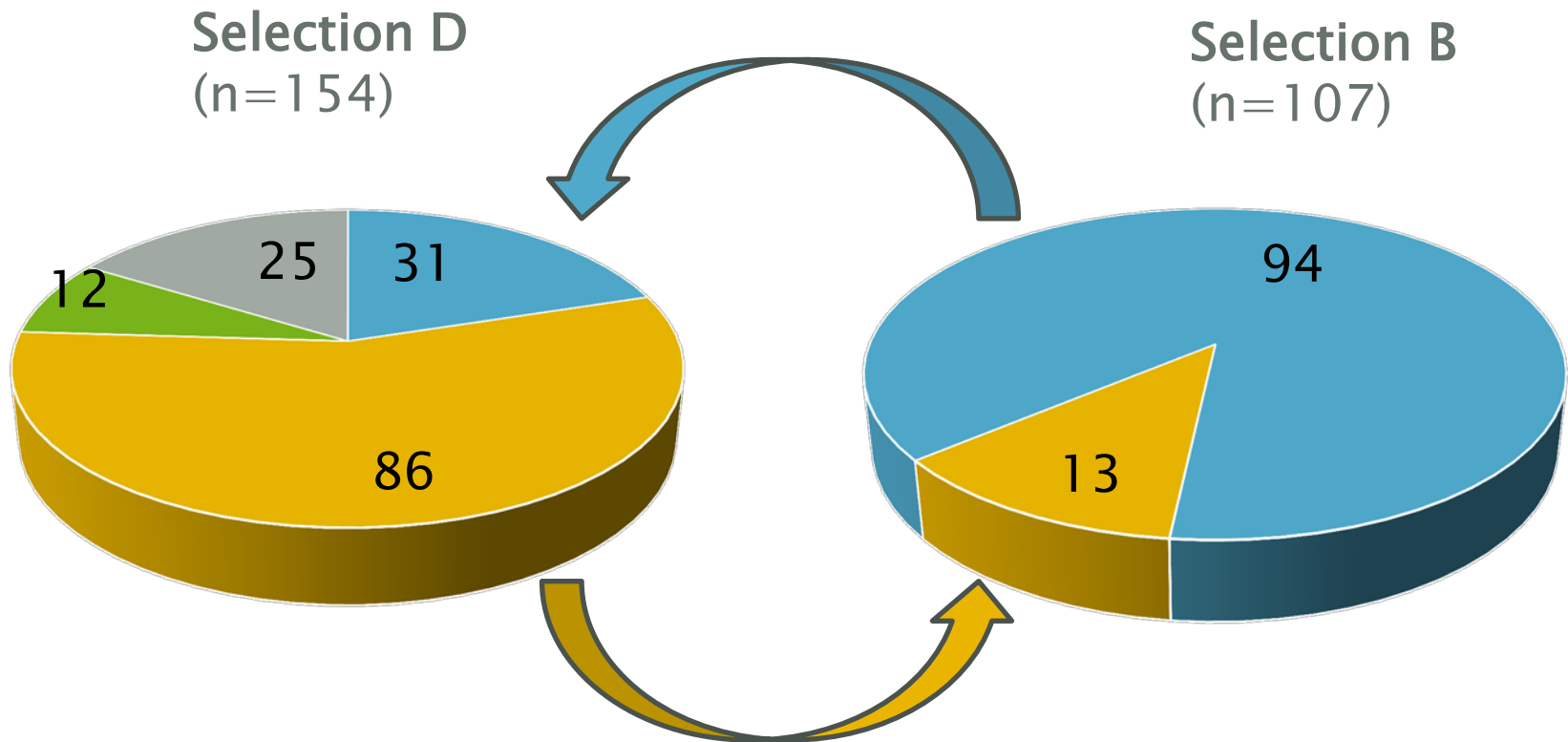
Overreporting in GMR mostly due F-codes
Underreporting in GMR mostly due poisoning-codes not included in Section B

Conclusions on the case study

Cases in the registries don't match:

- » GMR misses several direct DRD (under-reporting) and
- » includes non(-direct) DRD (over-reporting)

- » **Over-Coverage in GMR**: discrepancy of underlying and acute cause of death (e.g. underlying cause of death is F-code, acute cause due COPD but no acute intoxication)
- » **Under-Coverage in GMR**: Overdoses according to autopsy not always covered by GMR due to coding practice, practice of death cerificate or not included poisoning-codes in Selection B

Implications for monitoring and policy making

- » SR in Austria has high data quality
- » Main Source for Austria should remain the SR: based on autopsy, constant timer series
- » GMR important additional source
- » Declining autopsyrates are jeopardizing the quality of both registers
- » Future update of WHO-ICD-codes for Selection B based on case studies from other countries
- » Update for the DRD-Standardprotocol preferable (due to ICD-updates)
- » Future Outlook: Multiple-cause analysis (GMR)?

Thank You

Gesundheit Österreich

GmbH

ÖBIG
Austrian
National Institute
for Health Services
Research

BIQG
Austrian
National Institute
for Quality
in Health Care

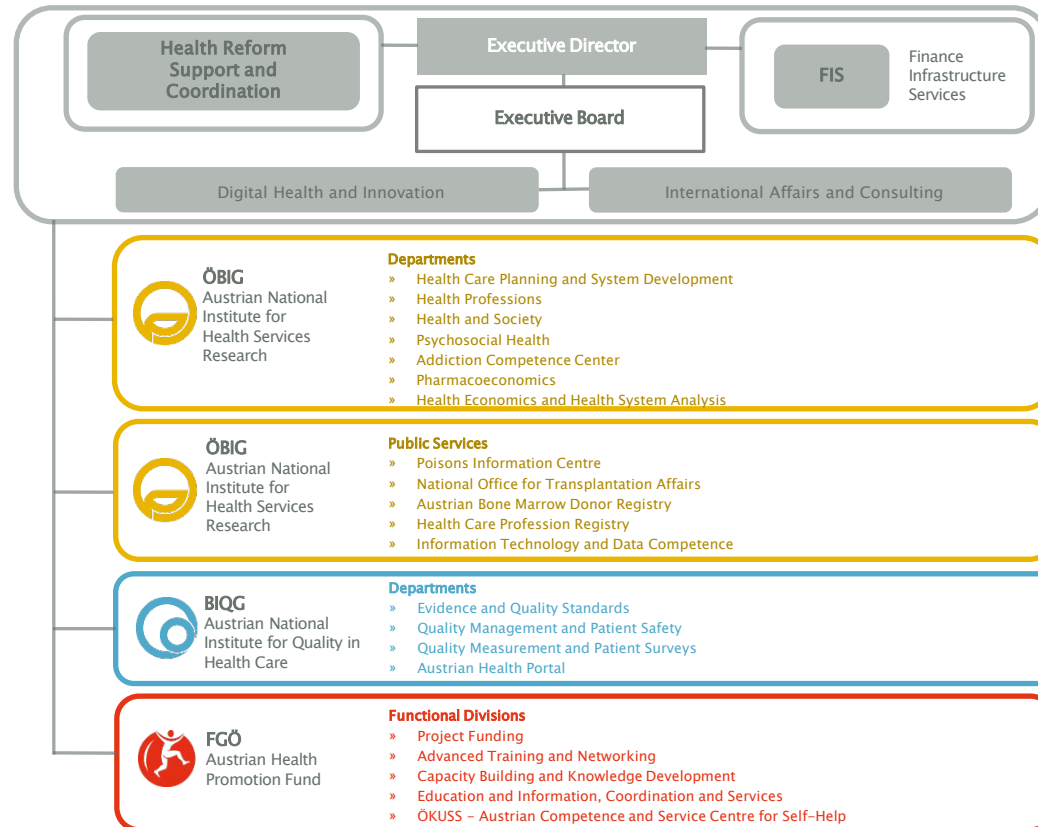**FGÖ**
Austrian
Health
Promotion Fund

Gesundheit Österreich Forschungs- und Planungs GmbH

Gesundheit Österreich Beratungs GmbH

Gesundheit Österreich
GmbH ● ● ●

Organizational Chart of GÖG
Austrian National Public Health Institute

Health Reform Support and Coordination

Executive Director

FIS — Finance Infrastructure Services

Executive Board

Digital Health and Innovation

International Affairs and Consulting

ÖBIG
Austrian National Institute for Health Services Research

Departments
» Health Care Planning and System Development
» Health Professions
» Health and Society
» Psychosocial Health
» Addiction Competence Center
» Pharmacoeconomics
» Health Economics and Health System Analysis

ÖBIG
Austrian National Institute for Health Services Research

Public Services
» Poisons Information Centre
» National Office for Transplantation Affairs
» Austrian Bone Marrow Donor Registry
» Health Care Profession Registry
» Information Technology and Data Competence

BIQG
Austrian National Institute for Quality in Health Care

Departments
» Evidence and Quality Standards
» Quality Management and Patient Safety
» Quality Measurement and Patient Surveys
» Austrian Health Portal

FGÖ
Austrian Health Promotion Fund

Functional Divisions
» Project Funding
» Advanced Training and Networking
» Capacity Building and Knowledge Development
» Education and Information, Coordination and Services
» ÖKUSS – Austrian Competence and Service Centre for Self–Help

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Subsidiaries
Gesundheit Österreich Forschungs– und Planungs GmbH (non profit)
Gesundheit Österreich Beratungs GmbH (for profit)

Gesundheit Österreich
GmbH

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