Data Driven Use of Health Data:

detecting indicators on quality issues and all kinds of waste *(EHFCN waste typology Matrix)* facing the need for cyber protection

Webinar EHFCN
Audit Hospitals Unit

2024-12-12

Health
Food Chain Safety
Environment

NIHDI

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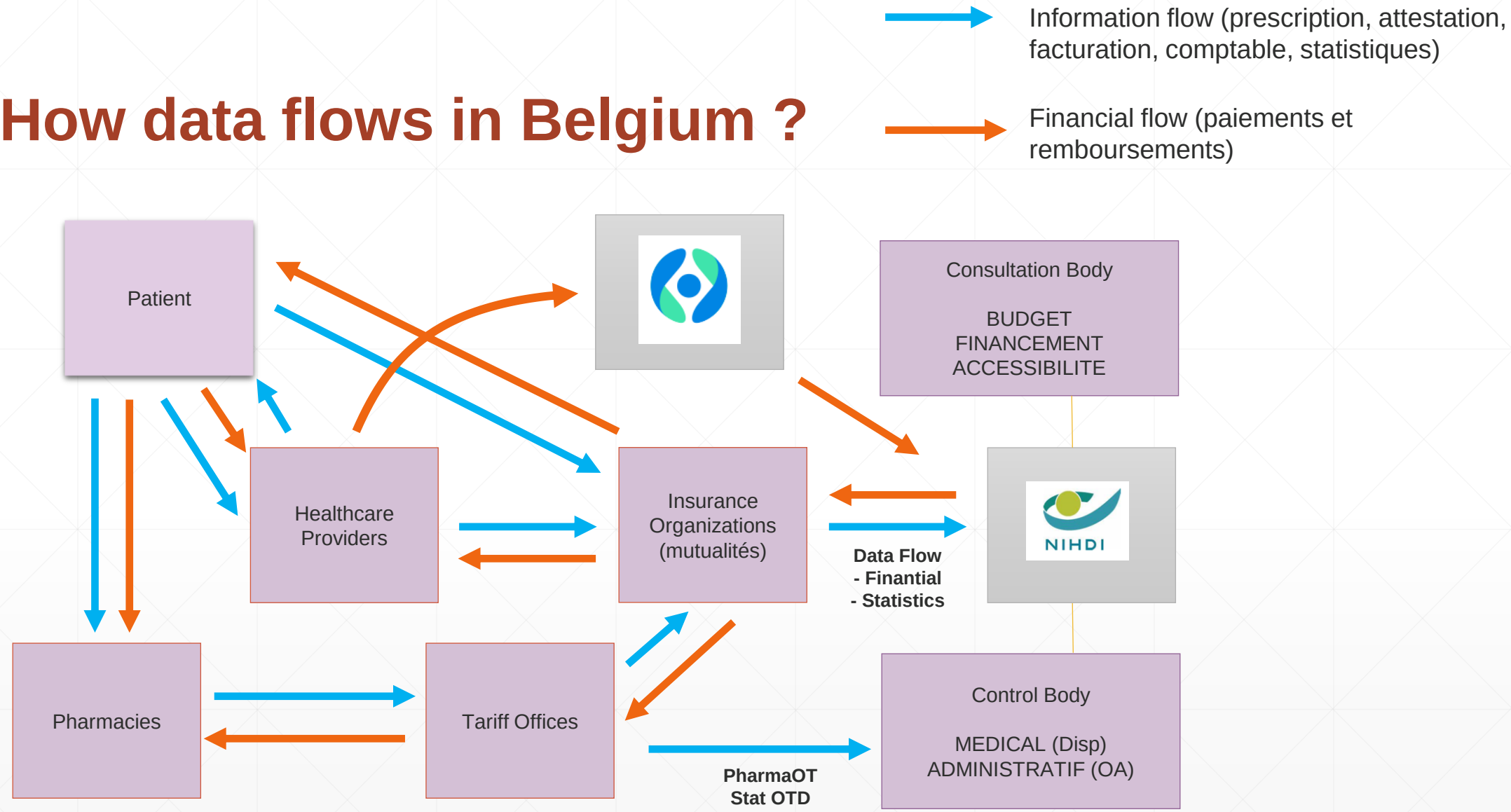
Agenda

- **Briefly**
  - How are our **data** flows in Belgium
  - **Data Security measures at NIHDI**
  - **Cloud initiatives:** Modernization
- **Detecting indicators of all kind of waste, as cases within audit hospital analyses**
  - Bariatric surgery
  - Delevery by caeserian sectio
  - Hip fracture
  - Hip replacement
  - COVID - Intensive care

How data flows in Belgium and data availability at NIHDI and Health Federal service

How data flows in Belgium ?



Data Security measures at NIHDI

Security measures at NIHDI

Multi-Layer Approach

Key Security Features

- **Role-Based Access Control** (RBAC)
- **Two-Factor Authentication** (2FA): Secure access via Itsme or identity card.
- **On-Premise Data Storage**: All data securely hosted within controlled infrastructure.

Infrastructure Highlights

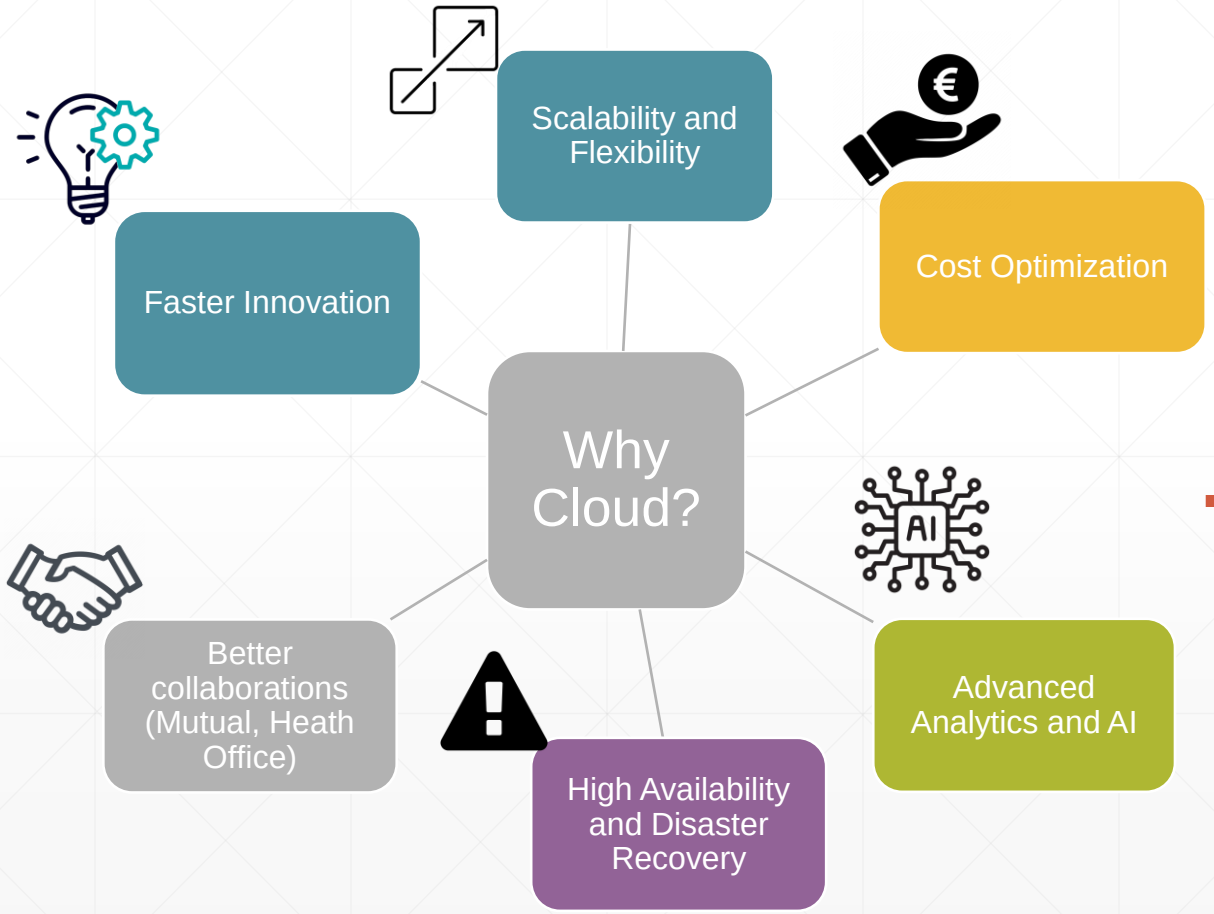
- **Robust** on-premise **architecture** for enhanced security and data control.
- **Centralized** data quality validation and secure handling (**Data Office**)

Governance & Compliance

- **Legal Framework:** business operates within a legal framework for data use.
- **Anonymized Data:** Data arrives anonymized at NIHDI from insurance companies (Mutual)
- **Adheres to GDPR** and other regulatory standards.
- **Continuous security** assessments to identify and mitigate risks

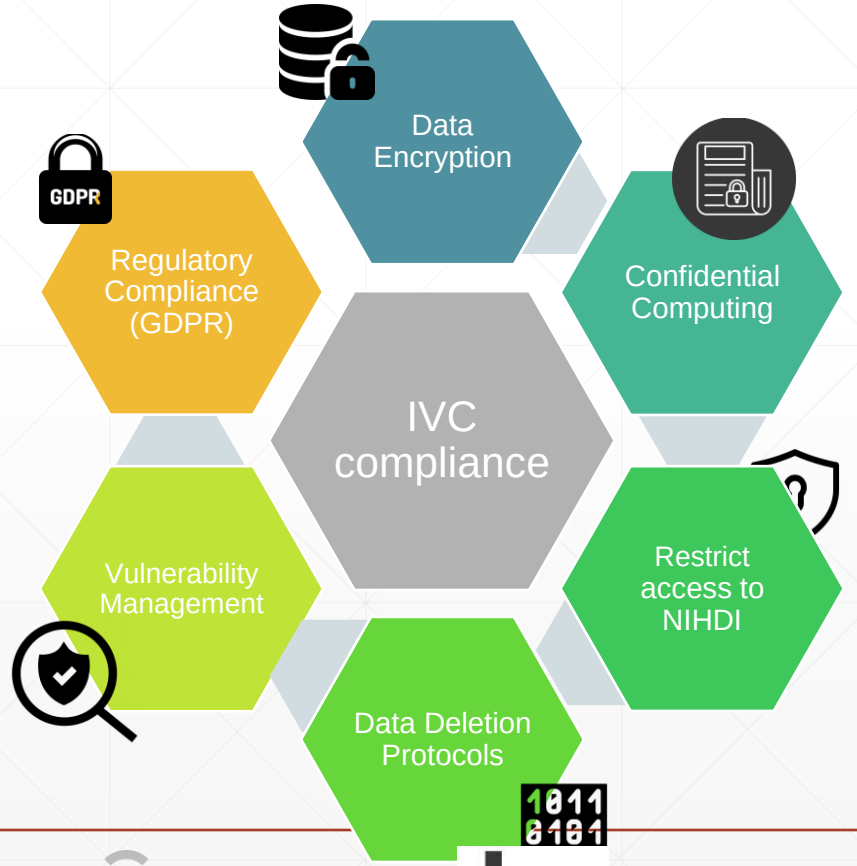
Cloud initiatives: Modernization

Cloud initiatives: Modernization



We Need

Compliance with IVC (InformatieVeiligheidsComité) – Decision 5 March 2024



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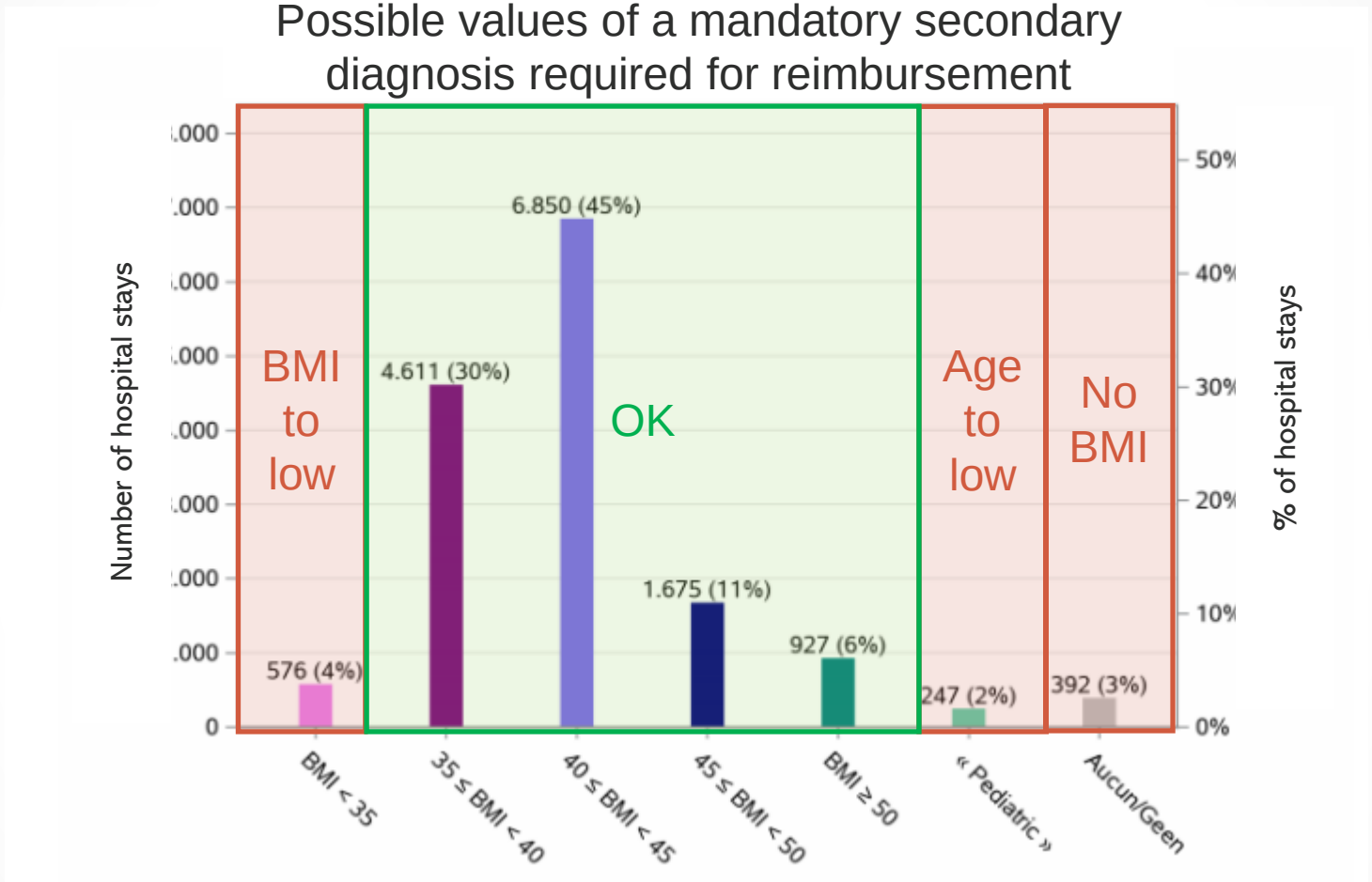
Indicators of all kind of waste within audit hospital analyses

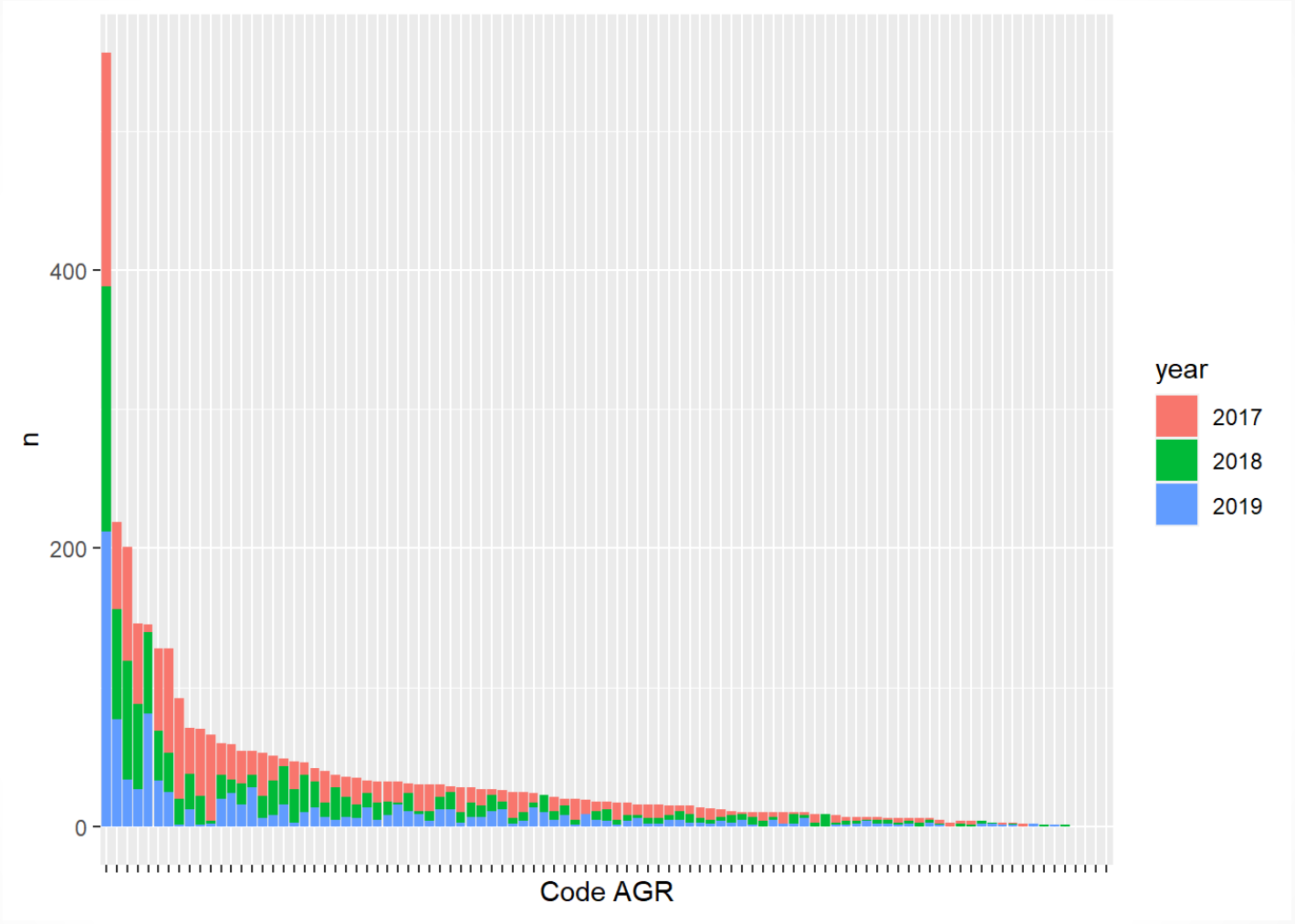


Bariatric surgery, USE OF:

Billing data and Secondary ICD10-CM codes

INDICATOR FOR FRAUD, BARIATRIC SURGERY IS NOT REIMBOURSED WHEN:

- BMI IS UNDER 35
- AGE IS UNDER 18
- NO BMI REGISTERED



Delivery by Caeserian Sectio, USE OF:

primary and secondary ICD10-CM and ICD10-PCS codes

Error analysis on Straight forward coding rules:

- All caeserian sections in Belgium
- 3 years
- 22 coding algorithms

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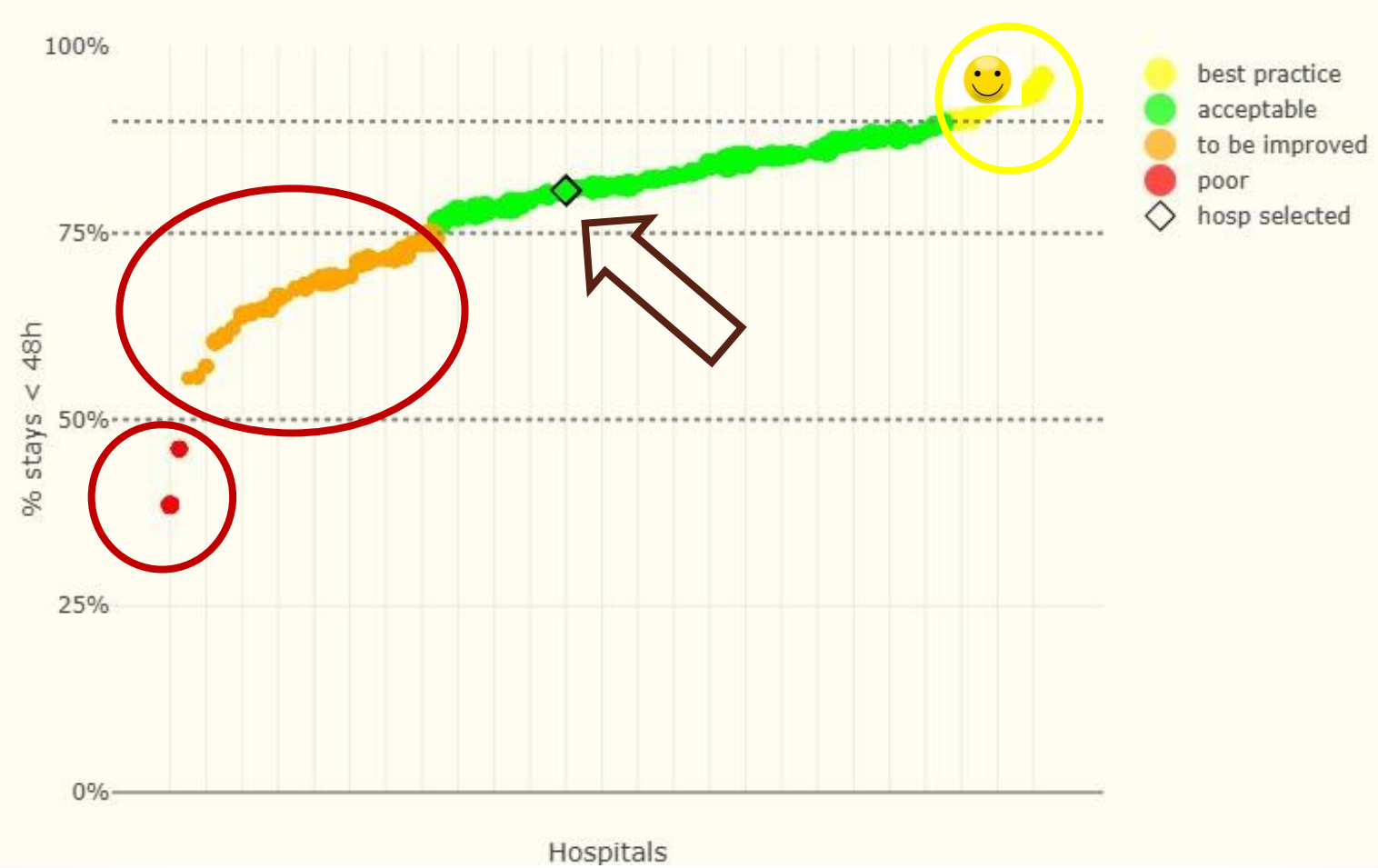

Treatment Hip fracture, USE OF:

metadata from billing and coding

NON COMPLIANCE WITH EBM GUIDELINES: HIP FRACTURES TO BE TREATED WITHIN FIRST 48 H OF HOSPITALISATION :

- ALL HIP FRACTURES IN BELGIUM
- 2 YEARS
- TIME (METADATA FROM BILLING AND CODING) BETWEEN ADMISSION AND INTERVENTION

Effect of hospital policy on blood consumption

	Probabilty / quantity					Contrast		
	answer	probability	quantity	#patients	#HCI	contrast	Sign prob?	Sign quantity?
Tranexamic acid	yes	0,0359	1,98	38.812	63	Yes / no	**	
Tranexamic acid	no	0,0569	1,94	14.880	35			

Hip replacement, USE OF:

Data from online / onsite audit, bloodproducts and medication

WASTE OF BLOOD PRODUCTS CAN BE SIGNIFICANTLY REDUCED BY:

- USING A PROTOCOL TO ADMINISTER TRANSEXAMIC ACID

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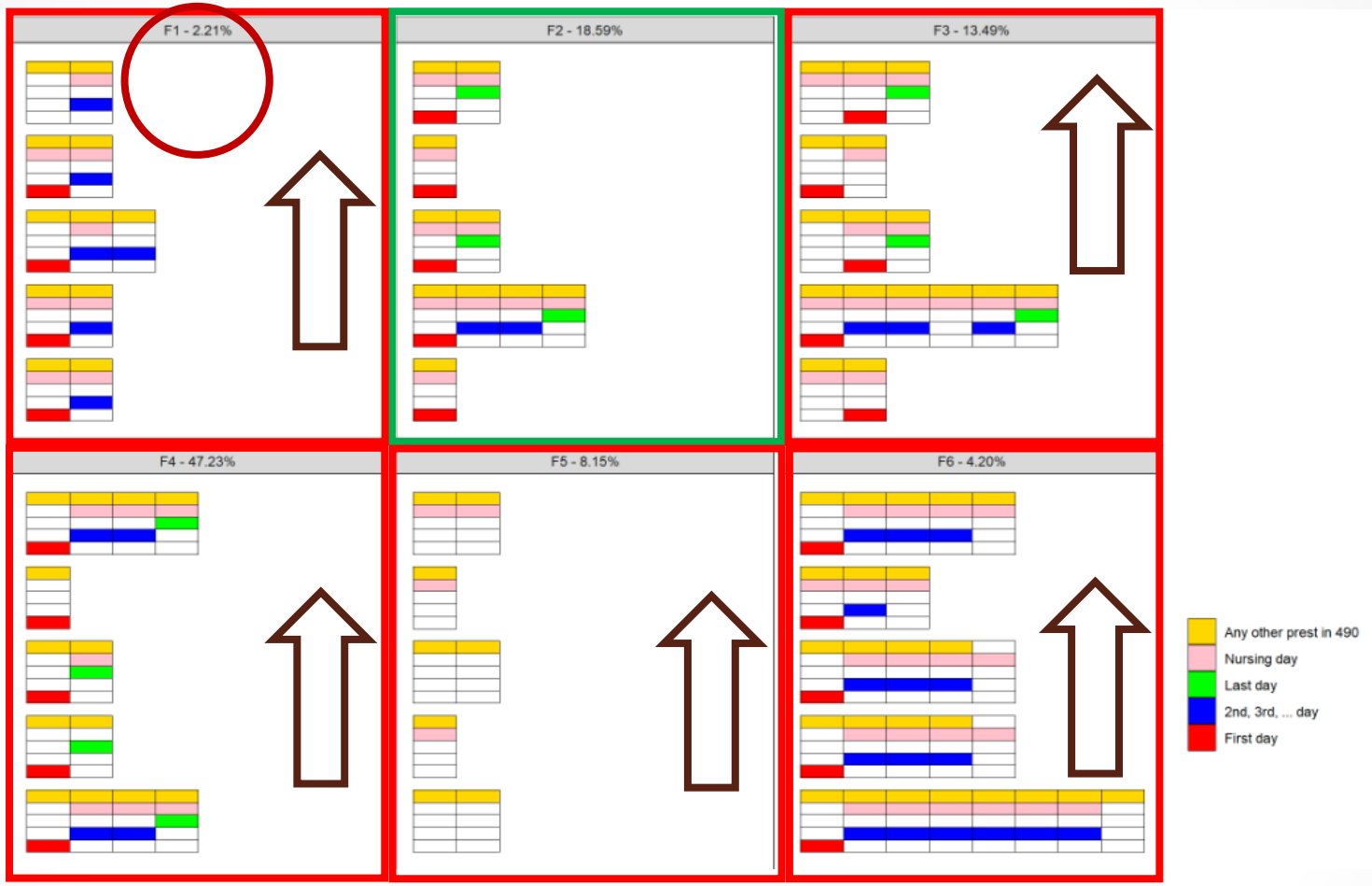
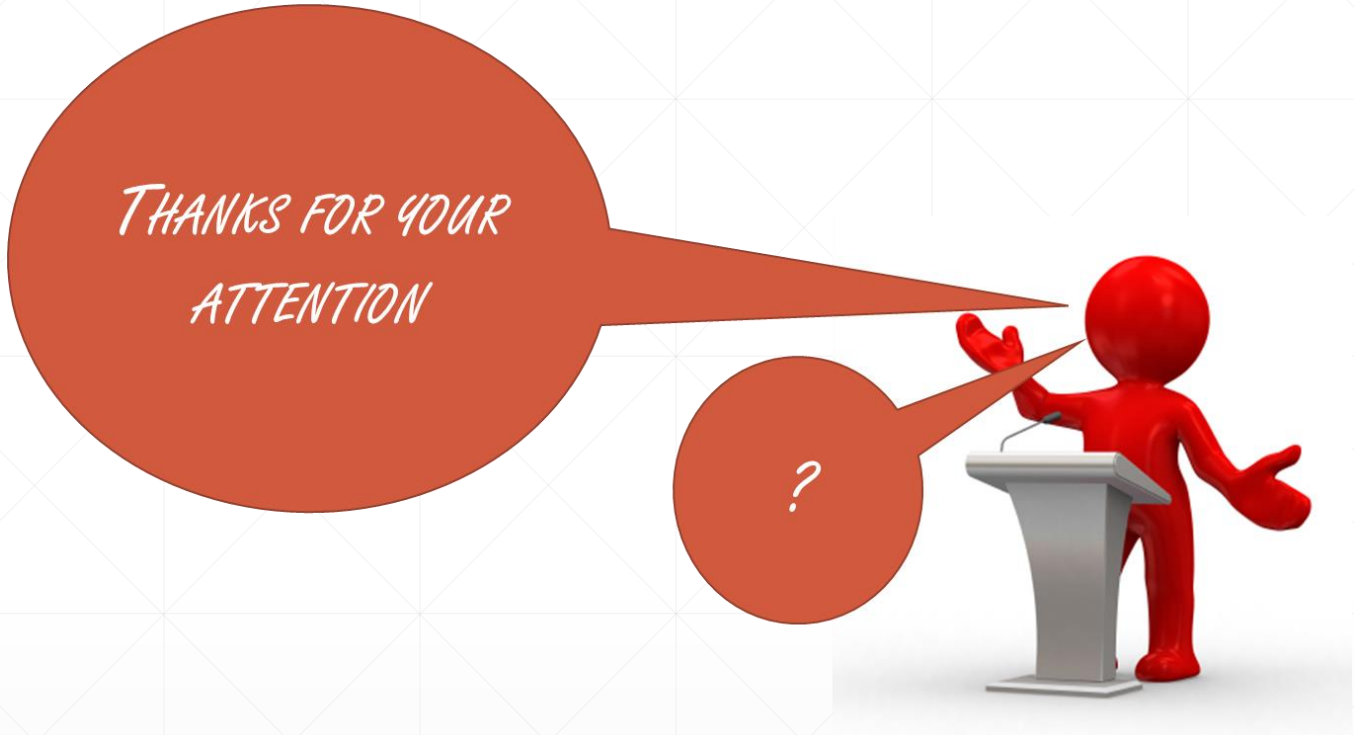


Intensive care, USE OF:

Data from billing codes, stay place and nurcing day costs

POSSIBLE ERRORS, ABUSE AND FRAUD AS CONFOUNDERS FOR UNDERSTANDING LENGTH OF STAY:

- 6 YEARS
- ALL INTENSIVE CARE STAYS
- CLUSTERING: 1 CORRECT, 5 INCORRECT CLUSTERS



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