

DEVELOPMENT AND VALIDATION OF QUALITY INDICATORS FOR BENZODIAZEPINE USE IN GENERAL AND MENTAL HEALTH HOSPITALS: SHORTCOMINGS OF AVAILABLE REIMBURSEMENT DATA (abstract 5PSQ-083 – ATC: N05)

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BACKGROUND AND OBJECTIVE

Background

Quality of care monitoring is an important aspect in healthcare and depends on the availability of valid quality indicators (QI), easily obtainable from available data sources. In particular for benzodiazepines and Z-drugs (BZD), given their important side-effects, good QIs are needed.

Objective

To develop QIs for BZD use in general and mental health hospitals, preferentially based on readily available reimbursement data (RD).

METHODS

QI selection

- 1) Literature review
- 2) Field observation

Face validity

Approval by multidisciplinary expert meetings within regional network for healthcare institutions (Zorgnet-ICURO).

- Psychiatrist - Data analysts
- Pharmacists - Policy makers

Data integrity & content validity

QIs assessed through comparison between two separate datasets.

- 1) National RD (year 2016; collected from all Belgian health care insurers).
- 2) Local invoicing data (ID) from one general hospital psychiatry ward (GHP) and one mental health hospital (MHH).

Critical appraisal

- 1) Current data sources accurate/detailed enough?
- 2) Other approach needed?

RESULTS

1. Selected quality indicators

- A set of 4 QIs was approved by the expert panel. Full description is available in Table 1.

Selected quality indicator	Numerator	Denominator
Q1: admissions with BZD (%)	Count of admissions with ≥ 1 BZD given on day of admission	Count of unique admissions
Q2: discharged with BZD (%)	Count of admissions with ≥ 1 BZD given on day of discharge	Count of unique admissions
Q3: continuous BZD use (%)	Count of admissions with ≥ 1 BZD given on each day of hospital stay	Count of unique admissions
Q4: use of BZD (DDD)/ patient day	Sum of DDD of all BZD	Sum of all patient days in given year

Table 1: Description of selected QIs

2. Assessment data integrity

- Integrity of RD and ID were assessed according predefined inclusion criteria. For the MHH, data sets corresponded well (719 vs. 710 patients with ≥ 1 BZD use) with a maximum relative difference between data sets $\leq 5\%$. (Table 2)
- For the GHP however, local and reimbursement data showed major differences, especially after applying 'BZD use' (161 vs. 206 patients), resulting in a high relative difference (22%).

Criteria for inclusion in final dataset	Local invoicing data (patient counts)		Reimbursement data (patient counts)		Relative difference (%)	
	GHP	MHH	GHP	MHH	GHP	MHH
1. Patients admitted in 2016	486	2546	496	2555	2	0
2. Discharged in 2016	462	1814	450	1903	3	5
3. Length of stay ≥ 14 days	280	1390	271	1445	3	4
4. Age ≥ 18 y	280	1376	271	1433	3	4
5. Use of benzodiazepines/z-drugs during hospitalisation	206	710	161	719	22	1

Table 2: Comparison data sets according different inclusion criteria

3. Assessment content validity

- Upon comparison between RD and ID, 3 out of 4 QIs could not be calculated as RD does not provide for a valid denominator at different moments during hospitalisation.

Quality indicators	Local invoicing data		Reimbursement data	
	GHP	MHH	GHP	MHH
Q1: admissions with BZD (%)	93/280 (33.2)	256/891 (28.7)	N/A*	N/A*
Q2: discharged with BZD (%)	48/280 (17.1)	179/891 (20.1)	N/A*	N/A*
Q3: continuous BZD use (%)	34/280 (12.1)	144/891 (16.2)	N/A*	N/A*
Q4: median use BZD (DDD)/patient day (IQR)	1.2 (1.5)	0.4 (0.9)	1.1 (1.7)	0.4 (0.9)

Table 3: Comparison data sets according different quality indicators

*: no valid denominator could be extracted from RD data; numerator GHP: 271; numerator MHH: 1433

4. Reasons for data loss

- A subsequent short survey amongst mental health hospitals showed high variability how drug invoices (and thus RD) are generated, aggregated and sent to insurers. (Figure 1)

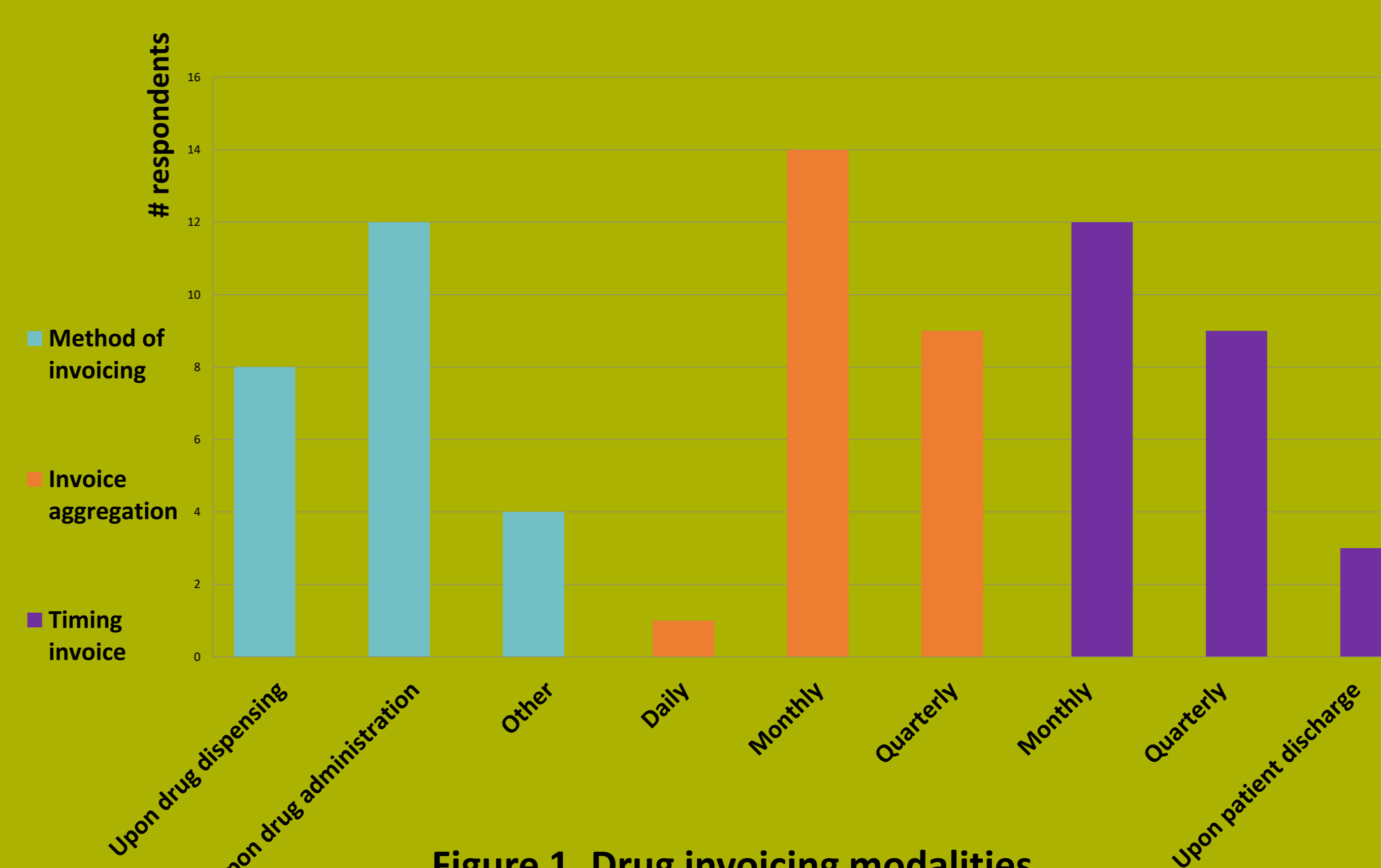


Figure 1. Drug invoicing modalities

CONCLUSION

Current reimbursement data are not sufficiently detailed to evaluate BZD use within/between hospitals, at least partially due to differences between hospitals how invoice data are aggregated and sent to insurers. However, the high implementation of electronic prescribing (CPOE) in Belgian hospitals potentially allows to use actual prescription and administration data for this purpose. This approach will require additional efforts from hospitals to extract and provide the data in a suitable format.

FUTURE PROSPECTS

Based on these findings, a uniformized data structure has been developed, allowing standardized data extraction from different electronic medical record systems and subsequent comparison. Recently (March 2019), a call has been launched to all regional mental health hospitals and general hospitals with a psychiatry ward to participate in a pilot trial using this new approach.

