MONITORING AND CONTROL OF THE DRG CODING QUALITY

NATIONAL HEALTH INSURANCE FUND UNDER THE MINISTRY OF HEALTH

VILNIUS

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In Lithuania the Case mix grouping for acute care episodes was started in 2012. We started with Australian Refined Diagnosis Related Groups (AR-DRG) version 6.0 released in 2008.

The main components of AR-DRG are:

1. Australian coding Classifications → diseases and interventions coding (primary classifications):
   - Diseases and Related Health Problems (ICD-10-AM)
   - Health Interventions (ACHI)
   - Australian Coding Standards

2. DRGs Classification → grouping of episodes (secondary classification)

We are currently preparing for migration to AR-DRG 8.0 version (2015). We are planning to launch the new version on the 1st of January 2017.
Why is Coding Quality Important?

• Good documentation supports better care of patient
  – Present or future episodes of hospitalisation have access to the records they need
  – The records are accurate, complete and understandable

• Quality clinical documentation also ensures the information reliable for many other purposes
  – Research
  – Planning
  – Activities improvement

• Quality documentation quantifies hospital activity
  – Activity based funding is focusing attention on the reliability and validity of coded health data
Who are responsible for data quality in Lithuania?

1. HEALTHCARE PROVIDERS
   In Lithuania clinical coding is mostly performed by doctors. Only some hospitals have appointed the clinical coders.

2. TERRITORIAL HEALTH INSURANCE FUNDS (5)
   Means to control data quality: surveillance and control of healthcare providers, harm recovery and penalties

3. NATIONAL HEALTH INSURANCE FUND UNDER THE MINISTRY OF HEALTH
Steps to Data Quality

• Training:
  – Courses
  – Materials (courses, newsletters and other recommendations)
  – Direct communication with coders
• Routine checks on data in IT System
• Checks on all data for certain episodes (documentation, IS)
Evolution of clinical coding quality control in NHIF

• When we started using DRG in 2012, in a short time we started noticing possibly incorrectly coded episodes in our IT system. We found such incorrect cases:
  – Conflicting with medical logic
  – Conflicting with Australian coding standards
  – Conflicting with rules defined in classifications
  – Opposing legislation
• During 2013-2015 incorrect episodes were identified by NHIF specialists who manually checked the data from statistical forms. Possibly incorrectly coded episodes were reported to the THIFs and healthcare providers for additional recheck.
• Since 2015 we started to create automated filters which help us identify possibly incorrectly coded episodes by some patterns;
• In 2016 we have upgraded IT system to better support monitoring and control of the coding process. Now we have special user interfaces to review, mark and comment episodes directly in the IT system, and users of THIFs and healthcare providers can instantly see our remarks.
Prevention of clinical coding mistakes

• We started providing trainings to prevent the most common clinical coding mistakes and to improve coding quality;
• We prepare methodological materials about the issues of clinical coding;
• We manage Diseases and Related Health Problems (ICD-10-AM), Health Interventions (ACHI) classifications and Coding Standards (AU & LT)
• We consult healthcare providers on clinical coding issues by phone and email;
• We prepare and publish clinical coding quality reports, Q&As, training materials, newsletters and etc. on our website:
  – On average 8 trainings per year;
  – One newsletter per quarter;
  – Publishing 10+ new Q&As every month.
Legal regulation

We have the legal act which regulates acute care episode monitoring and coding quality control. Regulation defines:

• Duties and responsibilities of healthcare providers, THIFs and NHIF;
• Documents to follow when checking quality:
  — Diseases and Related Health Problems (ICD-10-AM) classification
  — Health Interventions (ACHI) classification
  — Australian and Lithuanian Coding Standards
  — Other legal acts (e.g. day surgery legal regulation)
• Monitoring indicators used to form the Clinical Coding Report which is published on the our website once a year.
Entries which are most important to check in episode

- Diagnoses (principal & additional) (ICD-10-AM)
- Health Interventions (ACHI)
- DRG
- Sex, age, admission weight (less than 1 year old)
- Mode of separation, length of stay
- Other entries for national requirement
Methods of checking episodes

Inpatient of acute care (419,157 episodes)

Include: day surgery
Exclude: transplantation and long term care

Manual way
checked 15% episodes, 30% of them selected as the potential false episodes

Automatic filters
4% selected as the potential false episodes

Note: data of the first 7 months of 2016
Comparison of checking methods

**Manual way**

**Benefits**
- All episode data is checked, not fragments;
- Matching between diagnoses and interventions is assessed;
- New fault patterns are found;

**Limitations**
- Requires many working hours of the qualified experts (time consuming);
- Subjective, depends on qualification of an expert;
- Difficult to compare health providers objectively;

**Automatic filters**

**Benefits**
- Clarity, objectivity;
- All data can be rechecked when new fault patterns are found;
- Saving expert working hours;
- Enables the comparative analysis;

**Limitations**
- A versatile set of indicators is needed to assess overall checking quality;
- It is difficult to check medical logic of the episode;
- Unable to find new fault patterns;
We monitor general and specific inpatient acute care clinical coding indicators annually. We currently have a total number of 71 indicators:

- **4 GENERAL**
- **67 SPECIFIC**

65 specific indicators are based on the results of automatic filtering.
Indicator degree

Indicators have one of three fault degrees:

**Fatal Indicator** – any record identified by such an indicator has been coded incorrectly by definition

**Warning Indicator** – records identified by a warning indicator indicate that individual codes or combinations of codes or data items are likely to be incorrect

**Relative Indicator** – indicates a share of cases with certain characteristics from all cases. These indicators do not identify errors of the individual cases, but they are used for evaluation of the overall coding quality.
## General Indicators

<table>
<thead>
<tr>
<th>No</th>
<th>Indicator Degree</th>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Relative</td>
<td>Case Mix Index</td>
<td>An average of Acute care Case Mix Index for Hospital or nationally</td>
</tr>
<tr>
<td>2</td>
<td>Relative</td>
<td>Rate of the highest resources consuming episodes</td>
<td>The part of in-patient cases with the highest resources consumption from the total of in-patient acute cases for Hospital or nationally</td>
</tr>
<tr>
<td>3</td>
<td>Relative</td>
<td>Rate of the highest resources consuming episodes (without non-splitable ADRG)</td>
<td>The part of in-patient cases with the highest resources consumption from the total of in-patient acute cases excluding episodes of non-splitable Adjacent Diagnosis Related Groups (ADRG) for a Hospital or nationally</td>
</tr>
<tr>
<td>4</td>
<td>Relative</td>
<td>Rate of episodes with OR procedures unrelated to PDx</td>
<td>The part of episodes of 801 ADRG (Operating room procedures unrelated to the principal diagnosis) from the total amount of in-patient cases</td>
</tr>
</tbody>
</table>
Rate of the highest resources consuming episodes

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>21%</td>
</tr>
<tr>
<td>2013</td>
<td>20%</td>
</tr>
<tr>
<td>2014</td>
<td>17%</td>
</tr>
<tr>
<td>2015</td>
<td>16%</td>
</tr>
</tbody>
</table>

From money perspective:

- 5% rate decrease allowed us to save 24.4 M EUR in 2015 which is 5% from total budget
## Some examples of specific Indicators

<table>
<thead>
<tr>
<th>No</th>
<th>Indicator Degree</th>
<th>Indicator description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fatal</td>
<td>Malignant neoplasms, started or presumed to be primary without malignant (primary site) morphology</td>
</tr>
<tr>
<td>2</td>
<td>Warning</td>
<td>Code <em>Hypertensive kidney disease with kidney failure</em> with code <em>Chronic kidney disease, stage 1-4</em></td>
</tr>
<tr>
<td>3</td>
<td>Fatal</td>
<td><em>Sequelae of cerebrovascular disease</em> as a principal diagnose</td>
</tr>
<tr>
<td>4</td>
<td>Fatal</td>
<td>Missing code <em>Outcome of delivery</em>;</td>
</tr>
<tr>
<td>5</td>
<td>Relative</td>
<td>Part of cases when the principal diagnose is Symptom from the total in-patient cases</td>
</tr>
<tr>
<td>6</td>
<td>Warning</td>
<td>Acute appendicitis without appendectomy</td>
</tr>
<tr>
<td>7</td>
<td>Fatal</td>
<td>Administration of blood or blood product code assigned more than once</td>
</tr>
<tr>
<td>8</td>
<td>Fatal</td>
<td>Secondary neoplasm site code without primary site code</td>
</tr>
<tr>
<td>9</td>
<td>Fatal</td>
<td>Type 1 or 2 diabetes code with impaired glucose regulation code or another form of diabetes code</td>
</tr>
</tbody>
</table>
Coding Quality Ratio

It is derived Indicator, calculated using specific indicators. Coding quality ratio is used to compare hospitals.

- **Numerator** records are the cases the indicator is seeking to identify (problem records); these records are selected from the denominator records.
- **Denominator** records are the cases in the data set under analysis in which the numerator records (problem records) could occur.
- The **result** is expressed as a ratio of numerator and denominator.
Coding Quality Ratio for Hospitals in 2015

![Graph showing coding quality ratio for hospitals in 2015, with categories Republican, Regional, and Municipal.]
Future of coding quality control

We are planning to acquire new IT system which would help us:

- To create more automatic filters in an easier way;
- To prevent incorrect data being submitted to the system;
- To identify episodes having the highest risk ratio of being faulty. That would be an indication for us to check them manually;
- To rank hospitals and coders by the risk ratio.
Thanks for your attention!