

Data Impact Challenge Answer Submission Template

(DEXA Scans)

Template:

- Question:

“For what proportion of adults is a dual-energy X-ray absorptiometry (DEXA) scans repeated more often than 2 years?”

- Team and list of all team member names:
(all team members must have agreed to challenge rules through registration)

Fareeza Khurshed, Afiba Aku, Dan Metes, Henrietta Akuamoah-Boateng, Yiye Zeng

Describing the Data and Analysis

- Data Custodian Organization(s) and data sources:

Alberta Health

- List of Datasets Used (e.g. names of database and/or data origins):

Ambulatory Care Data, Alberta Health

Alberta Hospital Discharge Abstract Databases (DAD), Alberta Health

- Exclusions:

The information provided was not restricted to Alberta registrants. Instead, all individuals who received inpatient or ambulatory care services within Alberta were included in the data. However, individuals with a Personal Health Number (PHN) of zero (i.e. insured resident of Alberta but PHN missing) or missing were excluded from the data. In addition, only individuals 18 years old and older at the time of the service event were included.

- Nature and Size of Cohort (e.g. geographic area covered, number of patients included):

All adults (Alberta residents or otherwise) with a recorded non-zero PHN number, who presented to Alberta hospitals or ambulatory care facilities for a DEXA scan were included in the information provided below.

- Data timeframe:

The information was provided for a number of 3-fiscal-year time periods in order to allow for a full year of data (with at least 2 additional years within which a repeated DEXA scan can occur) to be captured in each period. Three such periods were selected for data provision (Apr 1, 2009 – Mar 31, 2012; Apr 1, 2010 – Mar 31, 2013 and Apr 1, 2011 – Mar 31, 2014).

- Please provide a brief summary of the analysis methodology:

Ambulatory care and inpatient DEXA scan records were extracted for each of the three periods of interest. DEXA scans were tracked through the Canadian Classification Index (CCI) codes in ambulatory care and inpatient data, namely, CCI code '3WZ70CG'.

All intervention codes and associated intervention dates were captured as distinct records in the ambulatory and inpatient data. The data was subset on DEXA scans and the ambulatory care and inpatient data was grouped together into one dataset.

Individual records with missing or zero PHNs were omitted and the data was restricted to adults (18 years and above).

The information within the 3-fiscal-year periods was created as follows. All DEXA scans from the first year were retained. For these individuals, further DEXA scans were tracked in the following two years of the 3-year-fiscal time period and only these additional records were added to the first year of DEXA records.

DEXA scans which occurred within 2 years from the previous exam for a particular individual were flagged. This flag was then used to compute the number of individuals with repeated DEXA scans within 2 years and this number was then divided by the number of individuals with DEXA scans to obtain the desired proportion. These steps were repeated for each of the three periods of interest.

Describing the Findings

- Numerator and Denominator (as specified in the question definition)

Numerator: Number of adults with a repeated DEXA scan within 2 years or less, who presented at Alberta ambulatory care facilities or hospitals.

Denominator: Number of adults with DEXA scans, who presented at Alberta ambulatory care facilities or hospitals.

Proportion: Proportion of adults with a repeated dual-energy X-ray absorptiometry (DEXA) scan within 2 years or less, who presented at Alberta ambulatory care facilities or hospitals.

- Please also provide a brief summary of the findings including any key limitations or interpretation issues (may also include one figure/table)

For the most recent time period (Apr 1, 2011 – Mar 30, 2014), the proportion of individuals with repeated DEXA scans within 2 years that were reported through Alberta ambulatory care and hospital facilities was 17.47% . When looking at the trend over time, this proportion decreased from 33.41% in period 1 to 17.47% in period 3. In addition, the number of individuals with DEXA scans also decreased by 42% during this timeframe (from 817 in period 1 to 475 in period 3).

Note: When restricting the data to individuals residing in Alberta the proportions remained virtually unchanged.

Ambulatory & Inpatient Data	Period 1: Apr 1, 2009 – Mar 31, 2012	Period 2: Apr 1, 2010 – Mar 31, 2013	Period 3: Apr 1, 2011 – Mar 31, 2014
Number Adults with Repeated DEXA Scans Within 2 Years	273	133	87
Number Adults with DEXA Scans Within 2 Years	817	706	475
Proportion of Adults with Repeated DEXA Scans within 2 Years	.3341 (33.41%)	.1884 (18.84%)	.1774 (17.47%)

- Limitations:

Ambulatory care data diagnostic imaging exams (incl. DEXA scans) are reported using CCI intervention codes and the reporting of these codes is required (if DI is performed) because it impacts the way in which the record is grouped in CACS methodology. On the other hand, in the inpatient data, reporting of DI interventions is not mandatory because there is little to no impact on CMG+ grouping. As such, the DI interventions (and thus DEXA scans) in the inpatient data may be underreported. In addition, private setting data is not reported in inpatient and ambulatory care data.

Physician claims information for DEXA scans was not provided since the equivalent DEXA code could not be identified through the CIHI CCP extended classification system.