

## Data Impact Challenge Template

### Question 6f:

- For what portion of adults were screening blood tests conducted in any given year? (Relates to CWC Family Medicine recommendation #5)
  - Team and list of all team member names:
    - Health Quality Innovation Collaborative:
      - Dr. Sanjeev Goel – Team Leader
      - Bogdan Pinzaru – eHealth Intern
      - Diana Malinovskaya – Analyst/Programmer
- (all team members must have agreed to challenge rules through registration)

### **Describing the Data and Analysis**

- Data Custodian Organization(s) and data sources: Health Quality Innovation Collaborative (HQIC).
- List of Datasets Used (e.g. names of database and/or data origins): HQIC database, from specific medical clinics with complete data and Rostered and Active Patients.
- Nature and Size of Cohort (e.g. geographic area covered, number of patients included): Medical Clinics within the HQIC database, n = 34929 patients for 2013, n = 45095 patients for 2014, and n = 39351 for 2015 to May 29<sup>th</sup>, 2015.
- Data timeframe: January 1<sup>st</sup>, 2013 to January 1<sup>st</sup>, 2014; January 1<sup>st</sup>, 2014 to January 1<sup>st</sup>, 2015; January 1<sup>st</sup>, 2015 to May 29<sup>th</sup>, 2015.

### **Methodology**

1. The data is stored on the custodian organizations server in MySQL databases.
2. Queries were developed to group and extract the respective numbers.
3. The first data extracted was the total number of patients over 18.
4. Then the team developed a query to relay the total number of patients that have been tested for LDL, TSH and Hb for each time period and over 18.
5. Query used followed described parameters such as timeframe, age, and clinic within each database.
6. The total counts were added to an excel spreadsheet.

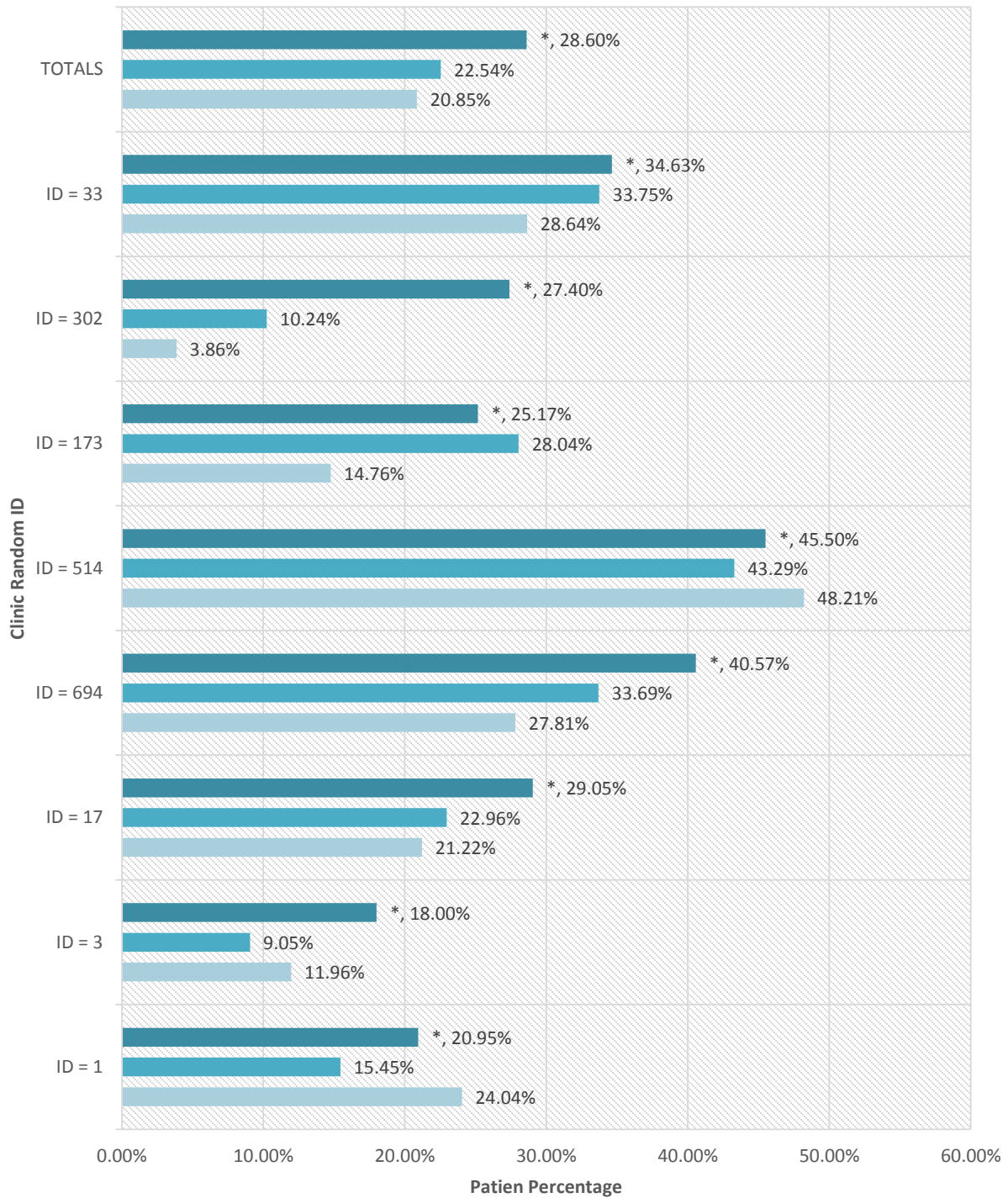
### **Describing the Findings**

	2013	2014	2015
• Numerator:			
Total LDL tests	n = 7284	n = 10166	n = 5627
Total TSH tests	n = 6066	n = 8516	n = 5299
Total Hb tests	n = 5321	n = 7337	n = 4568

• Denominator:	n = 34929	n = 45095	n = 39351
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- Findings: The overall ratio of patients over 18 who have had their low density lipoprotein (LDL) tested is slightly increasing from 20.85% in 2013 to 22.54% in 2014 with a predicted 28.60% (based on 14.30% for half a year) in 2015. Additionally, the overall ratio of patients over 18 who had their thyroid stimulating hormone (TSH) tested is slightly increasing from 17.37% in 2013 to 18.88% in 2014 with a predicted 26.58% (based on 13.29% for half a year) in 2015. Furthermore, the overall ratio of patients over 18 who have had their hemoglobin (Hb) tested is slightly increasing from 15.23% in 2013 to 16.27% in 2014 with a predicted 23.22% (based on 11.61% for half a year) in 2015. The data also indicates that only 3 clinics have decreased the number of LDL tests, only 2 clinics decreased the number of TSH tests, and only 2 clinics decreased the number of hemoglobin tests.
- Recommendation: More education around evidence for ordering lab tests is required to reduce the number tests involving both clinicians and patients. More clinical practice guidelines are required to indicate the frequency of laboratory tests. More dissemination of this recommendation into primary care would be beneficial with the aid of the Canadian Task Force on Preventive Health Care.
- Key Limitations: Certain limitations are associated with such a broad analysis. When counting all of the patients, certain clinics may have higher rates than others should be taken into account. Furthermore, input errors cannot be accounted when conducting queries with such a massive database.
- Figure: Available on the next page.

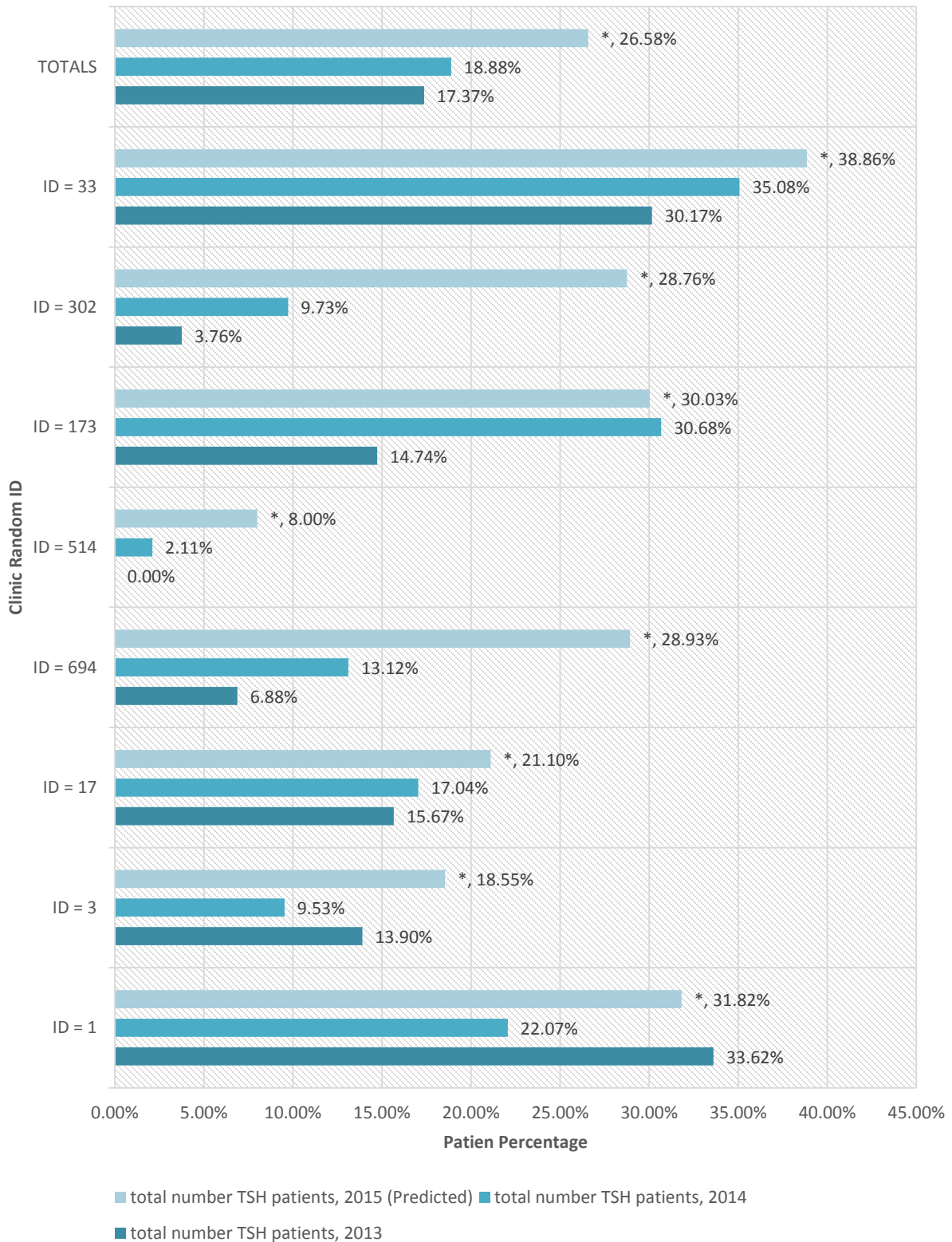
## Percentage of Patients over 18 that have taken an LDL test for 2013, 2014, and 2015\*



■ total number LDL patients, 2015 (Predicted) 
 ■ total number LDL patients, 2014  
■ total number LDL patients, 2013

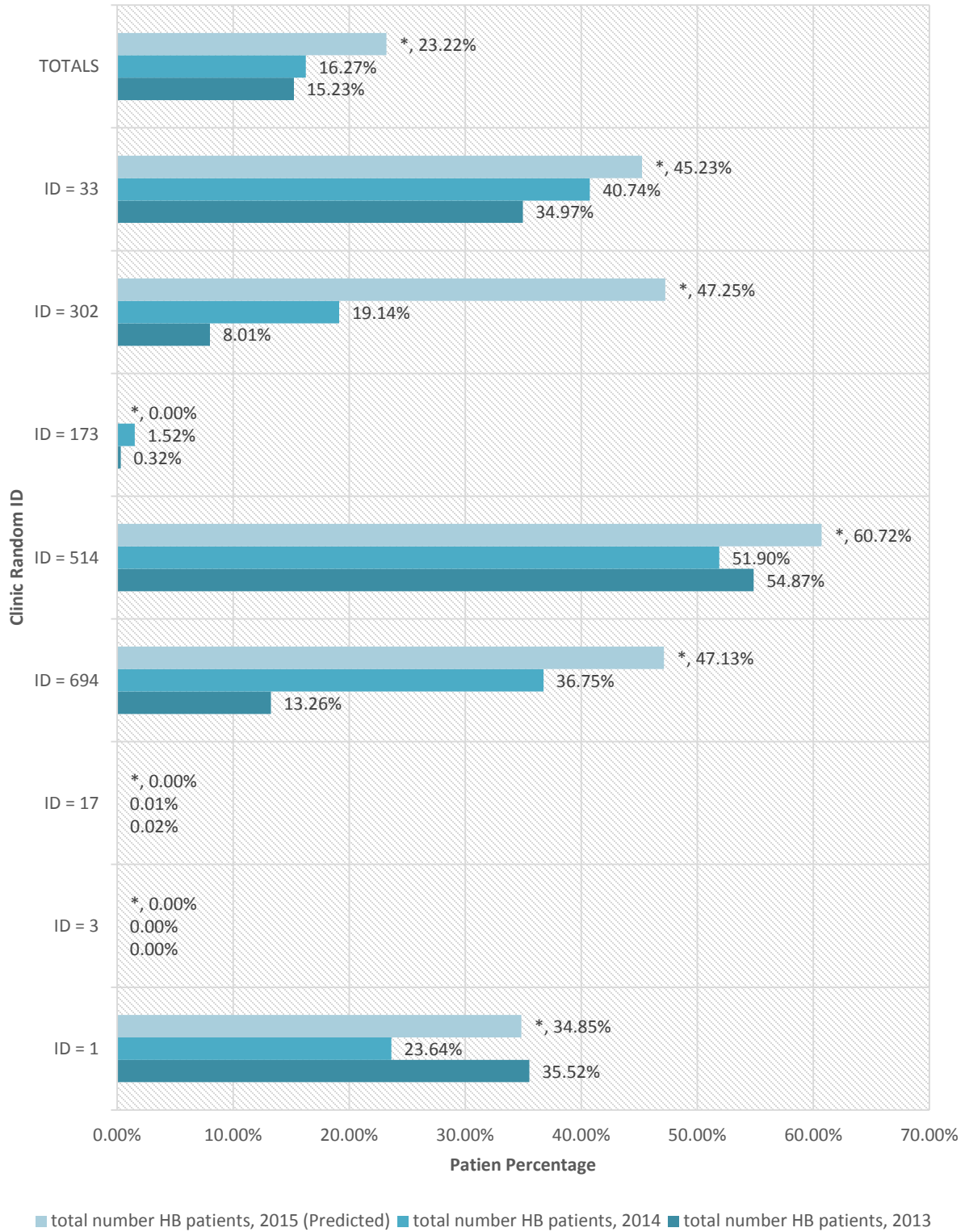
\* The values indicated by the asterisk are predicted values based on data for half a year.

## Percentage of Patients over 18 that have taken an TSH test for 2013, 2014, and 2015\*



\* The values indicated by the asterisk are predicted values based on data for half a year.

## Percentage of Patients over 18 that have taken an Hb test for 2013, 2014, and 2015\*



\* The values indicated by the asterisk are predicted values based on data for half a year.