Session ID #3281

SAS® GLOBAL FORUM 2015

The Journey Is Yours

SAS® Solutions to Create Episodes-of-Hospitalization for Health Services Research

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Flow of my talk

- About Saskatchewan Health Quality Council
    - Special connection with SAS ®

- Episodes-of-Hospitalization (EoH) Method Overview

- Why EoH is important?

- SAS ® code & Output summary

- Improvement Ideas & Limitations

- Conclusion

Saskatchewan Health Quality Council (HQC)

- Quality improvement

- Health system performance measurement

- Research using SK administrative health databases
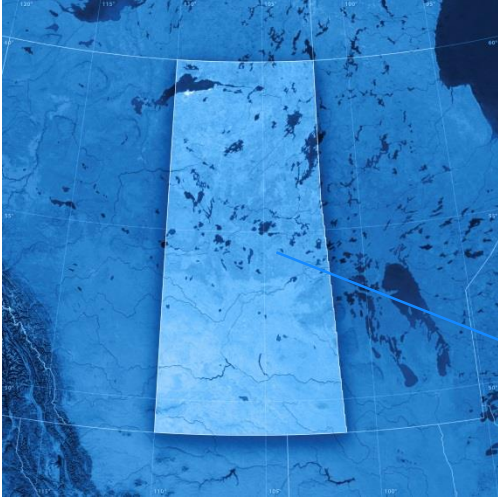
  - Hospital
  - Physician
  - Drug
  - Long-term & Home care

  - 900+ variables
  - 240,000+ visits/year

  - EoH method
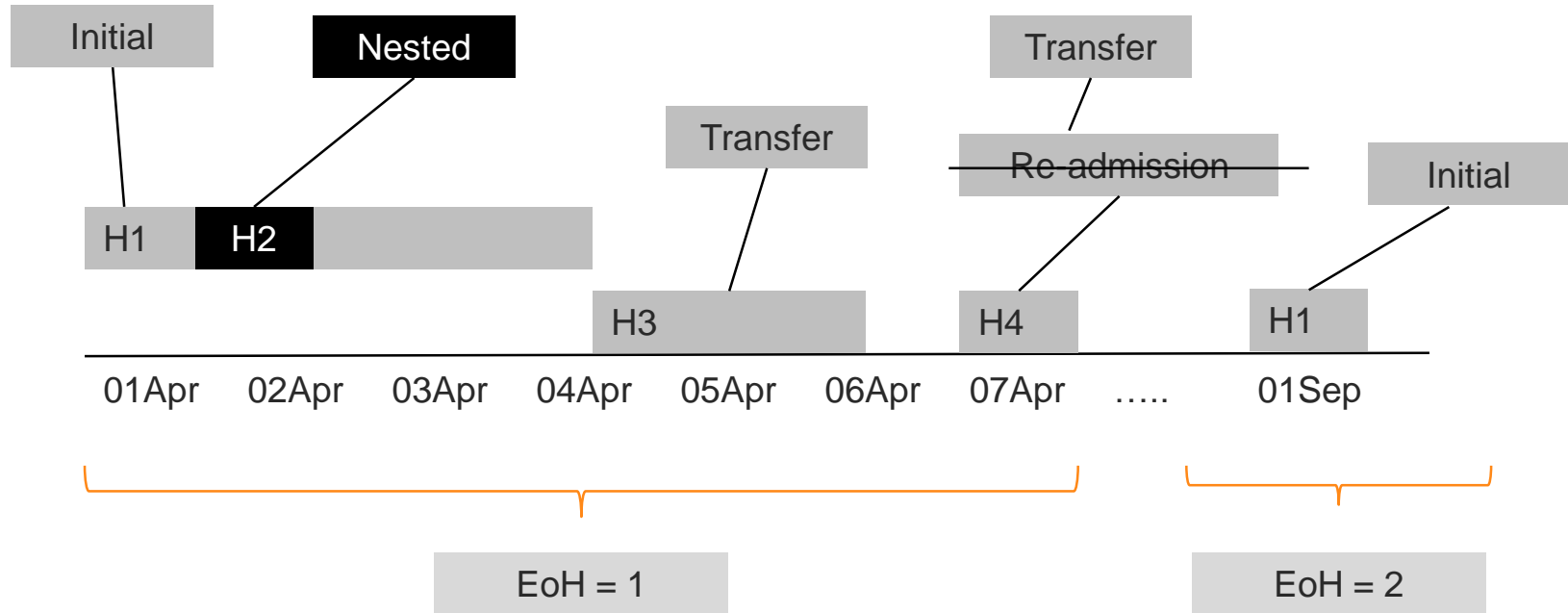
HQC connection with SAS ®
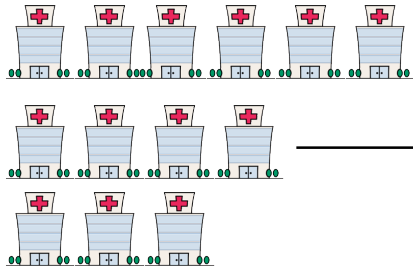

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SASkatoon

SAS ®

SAS

Overview of EoH Method

Why EoH is important?

Health Services Research

4 Hospitalizations
OR
1 EoH

Resource Planning

5 days

1 days

7 days

2 days

15 days

Patient Safety

SAS ® code for EoH

Ingredients

Hospital Data
- Patient ID
- Admission date
- Discharge date

EoH file

Output

SAS ® code for EoH

SAS Code

%EoH (dataset_in=, dataset_out=);

Step 1   – sorts the data by admission & discharge dates

Step 2 & 3   – prepares data for EoH calculation

Step 4   – calculates;

       - EoH

       - "Nested" & "Transfer" hospitalizations

       - Additional variables

       - Makes the output pretty

Output – EoH File

Pat. ID	Admit date	Disch. date
001	01 Apr 2014	04 Apr 2014
001	02 Apr 2014	02 Apr 2014
001	04 Apr 2014	06 Apr 2014
001	07 Apr 2014	09 Apr 2014
001	01 Sep 2014	05 Sep 2014
001	01 Dec 2014	03 Dec 2014
001	03 Dec 2014	03 Dec 2014
001	03 Dec 2014	06 Dec 2014

Improvement Ideas

Time Period

7,
30...etc.   1 day

Diagnosis

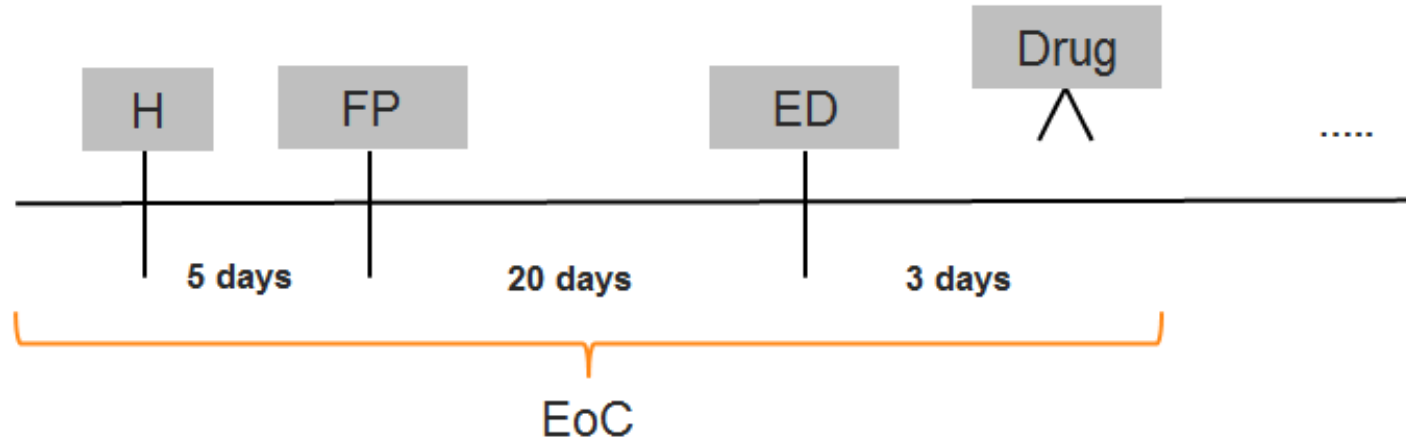COPD, mental
health…etc.

Re-admissions

Discharge disposition
Admission category

Level of Care

Day surgery vs.
Inpatient stay

More on Improvement Ideas

Kuwornu et al. (2013)

Foundational Piece

Limitations

1

Patient ID	Admit date	Discharge date	Hospitalization type
003	31OCT2012	11NOV2012	Initial
003	31OCT2012	31OCT2012	Nested
003	11NOV2012	25DEC2012	Transfer
003	25DEC2012	25DEC2012	Nested

2

Patient ID	Admit date	Discharge date	Hospitalization type
003	31OCT2012	31OCT2012	Initial
003	31OCT2012	11NOV2012	Transfer
003	11NOV2012	25DEC2012	Transfer
003	25DEC2012	25DEC2012	Transfer

SAS ® Macro Output

Patient ID	Admit date	Discharge date	Hospitalization type
003	31OCT2012	31OCT2012	Nested
003	31OCT2012	11NOV2012	Transfer
003	11NOV2012	25DEC2012	Transfer
003	25DEC2012	25DEC2012	Transfer

Correct identification of

Start and **end** of EoH
&
Length of episode

Conclusion

- EoH is an easy and effective method to identify episodes of hospitalizations,

- One level deeper than just hospitalization numbers,

- Beneficial for many areas of health research,

- Easily modifiable.

References

- Kuwornu JP, Lix LM, Quail JM, Wang E, **Osman M**, Teare GF. 2013. A comparison of statistical models for analyzing episodes-of-care costs for chronic obstructive pulmonary disease exacerbations. *Health Services and Outcomes Research Methodology*, 13:203-218.

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