

Supplementary Online Content

França UL, McManus ML. Outcomes of Hospital Transfers for Pediatric Abdominal Pain and Appendicitis. *JAMA Netw Open*. 2018;1(6):e183249. doi:10.1001/jamanetworkopen.2018.3249

eAppendix. Supplementary Information

eReferences

eFigure. Outcomes of Transferred Patients

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Supplementary Information

Hospital Capability and Regionalization Indices

We provide a brief overview of the pediatric Hospital Capability Indices (pHCI) used in the manuscript. A more complete discussion of the theoretical underpinnings and uses can be found at França & McManus (2017).¹ The index is based upon the *probability of care completion (P)*, defined as the ratio of the number admissions to the sum of admissions (*A*) and transfers (*T*) at a given hospital:

$$\mathcal{P}(h, \text{CCS}, \text{time}, \text{age}) = \frac{A(h, \text{CCS}, \text{time}, \text{age})}{A(h, \text{CCS}, \text{time}, \text{age}) + T(h, \text{CCS}, \text{time}, \text{age})}$$

The probability of care completion is defined by hospital (*h*), period of time, and CCS code, which give the *minimal* set of variables, but additional ones, such as age, can be used to stratify the population. Because we are interested in quantifying the hospital capability for pediatric patients (<18 years) during the years 2013-2014, the equation above can be rewritten as

$$\mathcal{P}(h, \text{CCS}, 2013 \ \& \ 2014, \text{age} < 18) = \frac{A(h, \text{CCS}, 2013 \ \& \ 2014, \text{age} < 18)}{A(h, \text{CCS}, 2013 \ \& \ 2014, \text{age} < 18) + T(h, \text{CCS}, 2013 \ \& \ 2014, \text{age} < 18)}$$

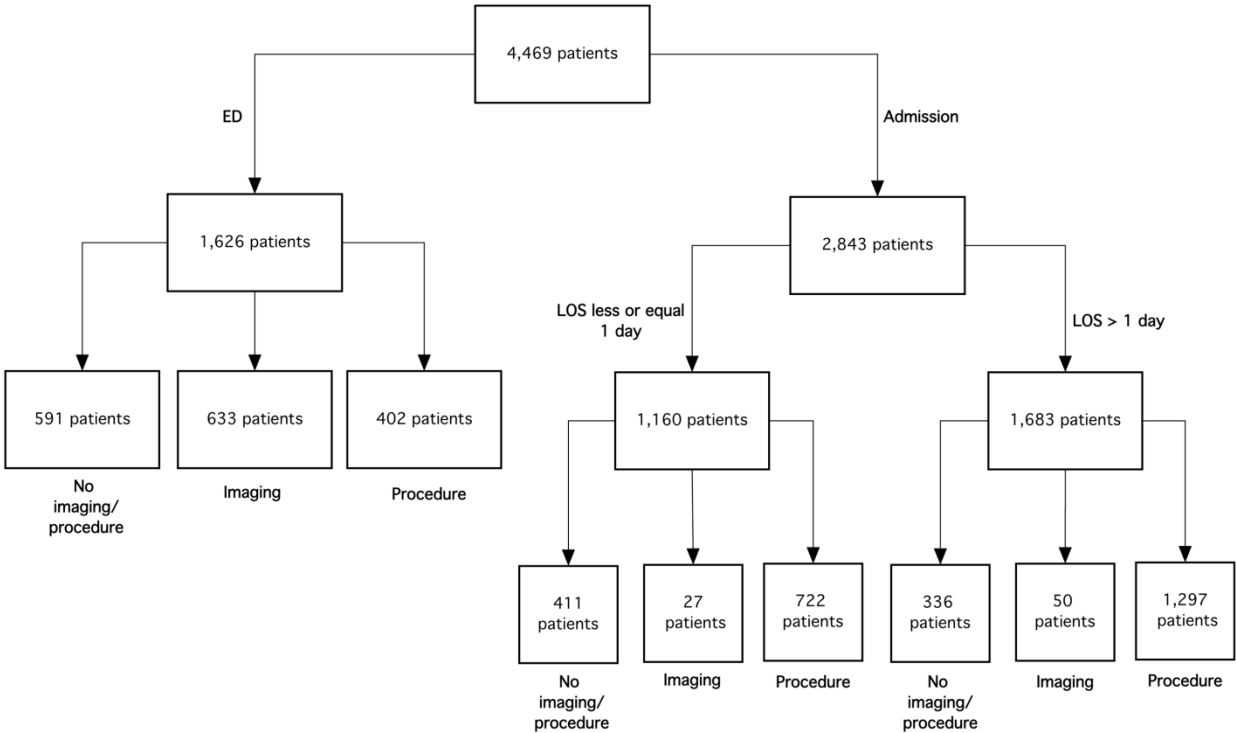
With this probability we can define the pediatric Hospital Capability Index (pHCI), which quantifies the breadth of capability of a hospital to treat *all* medical conditions requiring at least 20 admissions in an acute care hospital during the period of interest. Following the discussion in Ref. 1 (see also the eAppendix of Ref. 2), the pHCI of a hospital is defined as:

$$\text{pHCI}(h, 2013 \ \& \ 2014, \text{age} < 18) = \frac{\sum_{\text{CCS}} \mathcal{P}(h, \text{CCS}, 2013 \ \& \ 2014, \text{age} < 18)}{\text{Number of CCS codes}(2013 \ \& \ 2014, \text{age} < 18)}$$

eReferences

1. França UL, McManus ML. Transfer Frequency as a Measure of Hospital Capability and Regionalization. *Health Services Research* 2017;52(6):2237–2255. doi:10.1111/1475-6773.12583.
2. França UL, McManus ML. Availability of Definitive Hospital Care for Children. *JAMA Pediatr.* 2017;171(9):e171096. doi:10.1001/jamapediatrics.2017.1096.

Outcomes of transferred patients



eFigure: Outcomes at the receiving hospitals for the patients in the study cohort based on the discharge hospital setting and outcome of hospital encounter. ED: Emergency department; LOS: Length of Stay.