Evidence-based Standardization and ED Admission Rate Variation in US Children’s Hospitals

In this issue of Pediatrics, Bourgeois et al describe wide variation in emergency department (ED) admission rates for common conditions across 35 US children’s hospitals.1 The greatest variation was observed for concussion, with adjusted admission rates ranging from 5% to 72%; the least was in “bronchiolitis and RSV pneumonia” and “pneumonia not elsewhere classified,” for which rates ranged from 19% to 65% and 19% and 69%, respectively. Studies of adults have demonstrated similar across- and within-hospital admission variation, indicating this phenomenon goes beyond children’s hospitals.2,3

The authors suggest the variation indicates inefficiency, concluding that admission processes should be standardized. As the Affordable Care Act (ACA) is implemented in coming years, “inefficiency” discussions will move to center stage. The ACA promotes payment models that move away from fee-for-service—in which the doctor or facility is paid for every encounter—to bundled payments, episode-based payments, or population payments in which there is a fixed payment for a condition or population over a period of time. In these models, the incentive is to reduce inefficiency. Although these payment models are still in early stages, payments to children’s hospitals will likely be affected in the near future.

Hospital admission decisions are important when it comes to discussions of inefficiency. Admissions are costly, especially compared with “treat and release” ED visits—nearly 3 times the price.4 Hospital clinicians also know that many admission decisions fall into a “gray area” in which there may not be a clear-cut reason for admission, such as immediate surgery. Gray area admissions create great contention between providers, particularly when there are disagreements. Finally, the high percentage of children admitted through EDs make ED providers the major decision-makers for these murky decisions.

So how can we explain these huge differences in approach to such a fundamental medical decision? The authors included a crude measure of severity in their analysis, yet much of the variation was not explained by sickness alone or other observed factors. Admission decisions are multifactorial and include clinical issues, such as illness severity, and non-clinical issues, such as patient or family desires, outpatient service availability, or follow-up options. Local standards of care and innate provider fears, such as malpractice fear and risk tolerance, also play a role.2,5,6

Notably, this study did not assess patient-oriented outcomes, such as what additional care was needed after discharge, how long it took for the child to feel better, or the effect on the family. This makes it impossible to conclude that any observed admission rate is really too high or too low but indicates that decisions vary greatly and follow local standards.

This leaves the question of how to safely address this variation. The authors propose standardization—that is, protocols would guide decisions. In this study, children with complex chronic conditions were
excluded, and the diagnoses (which also included asthma, cellulitis, urinary tract infection, and seizure) resulted in hospital stays averaging slightly >1 day. These common conditions are suitable for protocols because the admission rationale is often to assess specific changes in clinical status or response to therapy (ie, peak flows). In general purpose EDs, observation units have been shown to be safe and effective in reducing admission rates. Standardization can also include outpatient protocols in which children can be reevaluated by their own pediatrician, if available, or return to the ED. However, it will be important to test these protocols, including their impact not only on admissions but also on measures of safety and patient-centeredness.

The ACA will increasingly constrain payments as new models will reward providers that can find ways to reduce inefficiency. When it comes to ED admissions, this will require the development of usable, safe, evidence-based protocols to reduce variation and ensure that safe, patient- and family-centered care is delivered in US children’s hospitals.

REFERENCES

ONE HOUR: My daughter has a single tattoo. Just after she turned 18, she and two of her best friends went to a tattoo parlor to get matching tattoos. She is now contemplating a second tattoo. For Christmas, one of her brothers gave her a gift certificate for “an hour in the chair” meaning that she can pick any design, discuss the design and site with the tattoo artist, and as long as the actual tattooing process itself does not take more than an hour, she does not have to pay anything. I wonder what she will do. Evidently, she has more options than the last time she got a tattoo.

According to The New York Times (Fashion & Style: July 1, 2014), two particular tattooing styles have recently become popular. One is a style called biomechanical tattooing in which the drawing is rendered in three dimensions. The style can be extremely realistic, so (for example) it may appear that a real butterfly is sitting on the subject’s shoulder. The downside is that the style is very detail and needlework intensive, so each tattoo takes a long time to make and the experience can be quite painful. Alternatively, she could opt for a watercolor-inspired tattoo. These tattoos really are similar to watercolor paintings in which the artist creates a design with splotches of color and colors running into each other with few details. The effect is an aesthetic rather than a crystal clear picture. However, watercolor tattoos do not last as long as other tattoos because less pigment is applied to the skin. Whatever she decides, I hope she really loves it. After all, the tattoo will be there for a very long time.

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Jesse M. Pines
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