

# Choosing Wrong

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The number is staggering. Conservatively, up to one-third of US health care could be considered waste.<sup>1</sup> In a country in which health care spending to gross domestic product is the highest by a large margin of any other nation (18% of gross domestic product, projected to be 20% by 2020), this could represent as much as \$1.2 trillion annually in wasted health care dollars.<sup>1</sup> Overuse of medical services is a major contributor to this excess.<sup>1,2</sup> In medicine, overuse has been previously defined as care in which “the risk of harm exceeds its potential for benefit” and one in which patients informed of this reality would likely forego this care.<sup>3–5</sup> Whether it is because the financial outlay for children’s medical care is comparatively less or because children are perceived as our most vulnerable patients, research addressing the possibility that too much medical care might be affecting children is in short supply.

In this issue of *Pediatrics*, Chua et al<sup>6</sup> take up the charge. The investigators developed claim-based measures that are described as “low-value pediatric services” for commercially insured children in the United States. The measures were derived from a variety of sources, including Choosing Wisely (a multispecialty effort that highlights overuse), the US Preventative Services Taskforce, and various national specialty society practice guidelines, among others. From an initial list of several hundred, the authors present 20 that they surmised to be the most impactful and discernable from commercial claims data. Notably, all of them can be described as overuse measures. By using these measures, the authors queried a widely available comprehensive database

of commercial claims to calculate frequency and costs of these services experienced by commercially insured children. Their findings are striking; 10% of children received at least 1 of the low-value services at a total cost of \$27 million, one-third (\$9.2 million) coming from out-of-pocket costs.

The fact that 1 in 10 children in this study were exposed to unnecessary care is concerning, but this estimate is likely just the tip of the iceberg. In the interest of feasibility, the authors measured only 20 low-value pediatric services. Although still a large undertaking, these services represent a minute fraction of all medical care from which many more low-value interventions could be quantified. The Choosing Wisely initiative, for example, offers >30 different recommendations for avoiding overuse that are intended for children in particular ([www.choosingwisely.org](http://www.choosingwisely.org)). Furthermore, even among the 20 services selected by the authors, there remains unquantified low-value care.

For instance, children with medical complexity were understandably excluded from the current study, given that this population is nearly always excluded from medical society guidelines. However, children with medical complexity account for a significant amount of resource utilization and health care spending, particularly in the hospital setting.<sup>7</sup> In many cases, what is low-value care for an otherwise healthy child is also low-value care for a child with medical complexity.

Finally, many of the services targeted in the current study came from medical society recommendations. Although medical societies are well-intentioned,

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their own assessment of value in their field may be biased by financial incentives, intellectual interests, or persuasive advocacy groups.<sup>8</sup> Thus, a respected medical society's support of an intervention does not alone make it high value. For example, the existing American Academy of Pediatrics' recommendation for lipid testing in children has been questioned for its low evidence base and potential for harm.<sup>9-11</sup> As independent, evidence-based assessments begin to examine common pediatric practices and find insufficient support to conclude that they are benefiting children,<sup>12-14</sup> we should reexamine even well-established and accepted practices when looking for low-value care.

Chua et al allude to a critical point: Although reducing waste is an obvious motivation to addressing low-value care, protecting children from medical harm may be the most important reason. Each low-value pediatric service highlighted in this study results in wasted health care dollars, but each service may also result in net harm to the children receiving the interventions. For example, it has been estimated that in the first 10 years after a head computed tomography scan in children <10 years of age, 1 excess brain tumor and 1 excess case of leukemia are contributed to the population for every 10 000 scans.<sup>15</sup> How many pediatric cancers are contributed to the population as a result of unnecessary radiation exposure to evaluate headaches, seizures, and sinus symptoms? Five of the measures address overprescription of antibiotics, to which early exposure has been associated with the development of obesity, asthma, juvenile idiopathic arthritis, and celiac disease.<sup>16-19</sup> Acid blocker therapy for infants with reflux carries the potential harms of increased risk of lower respiratory tract infections and necrotizing enterocolitis.<sup>20,21</sup> Among all of Chua

et al's points, the statement that our decision to prescribe low-value interventions to children may harm them is one that should resonate the loudest for pediatricians.

With the growing calls for payment reform, including pay-for-performance payment models, the study by Chua et al has many policy implications. However, given the inherent limitations of information obtained from databases, the investigators warn us against using their newly developed measures for payment denials. Nonetheless, once better developed, if we see these measures as services that offer no tangible benefit and are rather a source of significant patient harm, payment denials may not only be justified but arguably a moral imperative.

## REFERENCES

- Berwick DM, Hackbarth AD. Eliminating waste in US health care. *JAMA*. 2012;307(14):1513-1516
- Morgan DJ, Brownlee S, Leppin AL, et al. Setting a research agenda for medical overuse. *BMJ*. 2015;351:h4534
- Committee on Quality of Health Care in America; Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: The National Academies Press; 2001
- Morgan DJ, Dhruva SS, Wright SM, Korenstein D. Update on medical practices that should be questioned in 2015. *JAMA Intern Med*. 2015;175(12):1960-1964
- Mulley AG, Trimble C, Elwyn G. Stop the silent misdiagnosis: patients' preferences matter. *BMJ*. 2012;345:e6572
- Chua K-P, Schwartz AL, Volerman A, Conti RM, Huang ES. Use of low-value pediatric services among the commercially insured. *Pediatrics*. 2016;138(6):e20161809
- Berry JG, Hall M, Neff J, et al. Children with medical complexity and Medicaid: spending and cost savings. *Health Aff (Millwood)*. 2014;33(12):2199-2206
- Morden NE, Colla CH, Sequist TD, Rosenthal MB. Choosing wisely—the politics and economics of labeling low-value services. *N Engl J Med*. 2014;370(7):589-592
- Mitka M. Experts question recommendations for universal lipid screenings in children. *JAMA*. 2012;308(8):750-751
- Schroeder AR, Redberg RF. Cholesterol screening and management in children and young adults should start early—NO! *Clin Cardiol*. 2012;35(11):665-668
- Newman TB, Schroeder AR, Pletcher MJ. Lipid screening in children: low-value care. *JAMA Intern Med*. 2016;176(1):1437-1438
- Bibbins-Domingo K, Grossman DC, Curry SJ; US Preventive Services Task Force, et al. Screening for lipid disorders in children and adolescents: US Preventive Services Task Force recommendation statement. *JAMA*. 2016;316(6):625-633
- Siu AL, Bibbins-Domingo K, Grossman DC; US Preventive Services Task Force, et al. Screening for autism spectrum disorder in young children: US Preventive Services Task Force recommendation statement. *JAMA*. 2016;315(7):691-696
- Siu AL. US Preventive Services Task Force. Screening for iron deficiency anemia in young children: USPSTF recommendation statement. *Pediatrics*. 2015;136(4):746-752
- Pearce MS, Salotti JA, Little MP, et al. Radiation exposure from CT scans in childhood and subsequent risk of leukaemia and brain tumours: a retrospective cohort study. *Lancet*. 2012;380(9840):499-505
- Horton DB, Scott FI, Haynes K, et al. Antibiotic exposure and juvenile idiopathic arthritis: a case-control study. *Pediatrics*. 2015;136(2). Available at: [www.pediatrics.org/cgi/content/full/136/2/e333](http://www.pediatrics.org/cgi/content/full/136/2/e333)
- Mårild K, Ye W, Lebwohl B, et al. Antibiotic exposure and the development of coeliac disease: a nationwide case-control study. *BMC Gastroenterol*. 2013;13:109-117
- Saari A, Virta LJ, Sankilampi U, Dunkel L, Saxen H. Antibiotic exposure in infancy and risk of being overweight in

- the first 24 months of life. *Pediatrics*. 2015;135(4):617–626
19. Winterroth LC, Willams PV. Consequences of antibiotics and infections in infancy: bugs, drugs, and wheezing. *Pediatrics*. 2014;134(suppl 3):S166
20. Chung EY, Yardley J. Are there risks associated with empiric acid suppression treatment of infants and children suspected of having gastroesophageal reflux disease? *Hosp Pediatr*. 2013;3(1):16–23
21. Cohen S, Bueno de Mesquita M, Mimouni FB. Adverse effects reported in the use of gastroesophageal reflux disease treatments in children: a 10 years literature review. *Br J Clin Pharmacol*. 2015;80(2):200–208

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