

# Frequent Emergency Department Visitors: The End of Inappropriateness

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In 1992, a 4-month-old boy with fever and irritability was taken by his parents to the local emergency department (ED) late at night. The emergency physician on duty diagnosed otitis media and prescribed antibiotics and analgesics, and the child recovered without incident. His parents, both physicians, spent the next year in a losing battle with the insurance company, which denied payment because of the “inappropriateness” of the visit. The insurance company claimed that because the baby’s fever was less than 103°, the visit was unnecessary. The boy’s father (and author of this editorial) was impressed with the insurer’s creativity in denying the claim.

Incidents such as this sparked a new focus in the 1990s on examining visit appropriateness and crowding as key policy issues in emergency medicine.<sup>1-7</sup> ED visit volume grew sharply during the decade,<sup>8</sup> along with denials of payment by managed care organizations, leading in part to the adoption of the prudent layperson standard at the federal and state levels.

The earliest reports of ED crowding cited myriad causes, including the inability to move admitted patients upstairs to inpatient wards<sup>1</sup> and, in urban areas, a growing number of mentally ill and substance-abusing patients.<sup>5</sup> These disparate causes would later be explicated nicely in the input-throughput-output conceptual model of crowding.<sup>9</sup>

In 1993, the General Accounting Office (now known as the Government Accountability Office) issued an influential report that asserted the growth in ED use was largely due to uninsured, elderly, and seriously ill patients.<sup>10</sup> The report also noted that 43% of ED patients had nonurgent conditions, many of which could have been treated elsewhere in the community. This latter statistic received considerable attention and became the basis for much of the conversation about “inappropriate” ED use. More recent data showing that most of the growth in ED visit volume came from patients insured privately or by Medicare<sup>11</sup> did not quell the discussions about “inappropriate” ED visits.

Subsequent policy debates about ED crowding have been muddied by the confusion of separate but related phenomena and lack of clear definitions. These include:

- ED crowding: A condition in which the demand for ED services, including personnel and beds, exceeds the available supply. The input-throughput-output model outlines the various factors that contribute to each of the 3 components of crowding. Studying ED crowding has been difficult because of the lack of a single metric applicable to all EDs.<sup>12,13</sup> Several recently developed omnibus indexes of crowding, if validated, may provide a reproducible way to measure the phenomenon.<sup>14,15</sup>
- Inappropriate ED use: Generally defined as an ED visit by someone with a nonurgent or less-urgent condition treated more efficiently and cheaply in an office or clinic setting. In its more malignant form, inappropriate ED use has been characterized as visits by people of lower socioeconomic status who are “gaming” the system by claiming benefits and services to which they are not entitled.
- Frequent ED use: A subset of inappropriate use, typically refers to patients who visit the ED 3 or more times annually. Every ED has a panel of patients, well known to the staff as “frequent flyers,” who visit regularly because of complications of homelessness, alcoholism, sickle cell disease, asthma, migraine, and the like.

In this issue of *Annals*, 2 articles provide compelling evidence that the “inappropriate” ED visit is nothing of the kind.<sup>16,17</sup> Hunt et al<sup>16</sup> analyzed the Community Tracking Study Household Survey, a nationally representative sample of more than 32,000 households, and found that 8% of adults accounted for 28% of all ED visits in 2000 to 2001. In this study, factors independently associated with frequent ED use (defined as 4 or more annual visits) were poor physical or mental health, 5 or more annual outpatient visits, and a family income below the poverty threshold. It is worth noting that most patients in this national dataset had insurance (84%) and a regular source of care (81%). This study did not include information about specific diagnoses.

Fuda and Immekus<sup>17</sup> examined a set of Massachusetts databases for 2003 and found that 1% of all state residents accounted for 17.6% of all ED visits. In the Fuda and Immekus<sup>17</sup> study, frequent ED users (defined as 5 or more annual visits) were more likely to be admitted and received a higher intensity of services at each visit. Of note, more than half

(54.5%) of frequent users had a primary or secondary *International Classification of Diseases, Ninth Revision* code associated with a mental health or substance use disorder compared with 12.0% of the infrequent ED users. Interestingly, only 28% of frequent users remained so in a second year of observation. Fuda and Immekus<sup>17</sup> did not perform multivariate modeling to determine which variables were independently associated with frequent ED use.

From these articles, several themes emerge about frequent ED users:

- they are sicker than infrequent or nonusers;
- they use more health care in general, including more non-ED ambulatory visits;
- they suffer disproportionately from mental illness and substance use; and
- their insurance status, race, and ethnicity are minor determinants of ED use.

What interventions are available to reduce the prevalence of frequent ED use? The most likely approaches involve expanding office hours for primary care and mental health services and providing case management for frequent users. Both approaches entail a multidisciplinary effort by ambulatory care providers, mental health providers, social services, health care systems, and payers. These are not efforts that can be confined to the ED. As far as efficacy goes, data are sparse, and the evidence is suggestive but not definitive.

Lowe et al<sup>18</sup> recently found that patients enrolled in primary care practices with more than 12 hours of evening coverage a week were 20% less likely to use the ED. The implication of this observational study, that expanding office hours reduce ED use, is less clear. A brief 6-week study from the Netherlands, using a pre-post design, found that extended evening and weekend hours in one small city's primary care settings reduced ED usage 53%.<sup>19</sup> Solberg et al<sup>20</sup> found that open-access scheduling, without expanding hours, increased the proportion of scheduled office visits to the primary care provider and reduced the number of urgent-care visits to the primary care provider but did not affect ED usage. Neither study specifically studied or targeted frequent ED users.

Two studies of case management for frequent ED users yielded conflicting results. At San Francisco General Hospital, Okin et al<sup>21</sup> reduced ED visits during 1 year from a median of 15 to 9 for patients who had made at least 5 annual visits before case management. In Rochester, case management did not reduce ED use for patients with more than 10 annual visits.<sup>22</sup> Both studies offered mental health services and counseling for drugs and alcohol.

Last, one may reasonably conclude that, although frequent ED users make a disproportionate number of ED visits, they do not contribute in a substantive way to ED crowding. In fact, the Government Accountability Office acknowledged as much in their 2003 report that reexamined ED crowding and concluded that high inpatient occupancy and an inability to move admitted patients upstairs (particularly to telemetry and critical

care beds) was the main cause of ED crowding.<sup>23</sup> To a great extent, this confirmed what most emergency physicians had already known, but its appearance in a federal report was nonetheless important.

In regard to frequent ED visitors, language matters. Describing ED recidivism as a problem or as inappropriate stigmatizes the patients who make those visits. The deeper problem is that there are substantial numbers of Americans, particularly those with mental illness and substance use disorders, with unmet health needs who use the ED because of its convenience, accessibility, and affordability. For these patients, the ED represents an "affirmative choice" for care, rather than a provider of last resort.<sup>24</sup> Viewed this way, the ED visit then becomes an epiphenomenon related to the unmet health need.

The notion of the "inappropriate" ED user is largely apocryphal. Fuda and Immekus<sup>17</sup> and Hunt et al<sup>16</sup> convincingly demonstrate that frequent ED users are sicker, with considerable mental illness and substance use, than infrequent or nonusers. Frequent ED users come to the hospital because they need care. Infrequent users may avoid the ED with expanded access to primary care, but this is not at all clear. Constructive policy change will not result from a blame-the-victim analysis.

Perhaps a wiser health policy goal would be to focus on the delivery of high-quality, convenient, accessible care to all patients in all clinical settings, ambulatory, emergency, and inpatient.<sup>25</sup> Intensive case management of frequent ED users and expanded off-hours access to facilities delivering primary care, especially mental health and substance use treatment, may decrease the frequency of ED recidivism, but additional work is needed to test the efficacy of these interventions. In health care's current political climate, which emphasizes cost containment and personal responsibility, it is difficult to see this happening. But for now, let us put to rest future conversations about "inappropriate" ED use.

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## IMAGES IN EMERGENCY MEDICINE

(continued from p. 17)

### DIAGNOSIS:

*Abnormal head computed tomography (CT) after iatrogenic postmyelogram bacterial meningitis.* Head CT was performed without contrast (Figure 1). The images show cerebral edema and abnormally increased attenuation of the cerebral gray matter (illustrated by red arrows but not limited to these 2 locations). Normally, in the absence of renal failure, a head CT 1 day after a myelogram should show no evidence of remaining contrast (Figure 2, normal comparison). Here, presumably as a result of meningeal inflammation, both blood-meningeal and blood-brain barriers have been disrupted. The cerebral gyri are edematous and efface the cerebral sulci, and the cerebral gray matter shows abnormally increased attenuation (hyperdense), reflecting the breakdown of the blood-brain barrier, with parenchymal imbibition of contrast.

Iatrogenic meningitis after lumbar myelography (ie, the administration of spinal contrast media) is an extremely rare complication of lumbar puncture. In this case, the resulting abnormal uptake and retention of contrast, with associated cerebral edema, serves to illustrate the breakdown of the blood-brain barrier by meningeal inflammation, with associated cerebral edema.

The patient had a complete neurologic recovery.