

# Editorial Comments—Surge Capacity Implications and Geographic Maldistribution of Pediatric Medical Resources in Seattle-King County

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Dr. King and co-authors' research showing the maldistribution of Seattle-King County pediatric acute care resources is an important addition to the disaster medical literature. The authors report that in the event of a regional disaster, there is a lack of access to medical services for children because of the location of acute care pediatric resources relative to the predominate areas of the local pediatric population. Most likely, many urban and rural areas also reflect the problems of Seattle-King County in that specialty hospitals are located so that access during disasters is not possible for vulnerable populations.

The findings of King and co-authors are important when considering concepts of disaster medical surge capacity. Current surge capacity development is based on four key components as described by the US Government Accounting Office. These components include: (1) increasing hospital capacity; (2) identifying alternate care sites; (3) registering medical volunteers; and (4) altering established standards of care.<sup>1</sup> In review of extensive work done in the US on development of surge capacity, there is little recognition of the limitations of physical access to medical care resources during disasters and the impact of this lack of access to providing medical surge capacity for affected populations.<sup>2</sup> A lack of recognition of the relationship of physical access to health care and effective provision of surge capacity is well-illustrated with the multi-million dollar (US) Pricewaterhouse Coopers, LLP project in California to define and develop standards for surge capacity development.<sup>3</sup> This extensive project, which included emergency management and academic consultants from throughout the US, fails to address within the >1,000 pages that resulted from the project, the issue of geographic isolation of populations from surge resource locations.

As described by King and co-authors, much of the pediatric inpatient hospital care in the US now is delivered at regional pediatric centers. In fact, pediatric regional centers encourage the referral of pediatric patients to regional locations rather than outlying community hospitals. The centralization of pediatric care is driven by economic conditions and sub-specialization of pediatric services. In addition to pediatric acute care, centralization of trauma, cardiac, and stroke care also is common.

In disaster medicine, pediatric populations usually are considered vulnerable. In disaster settings, children are vulnerable because they are less likely to understand how to keep themselves safe, have less access to and understanding of emergency information, and are prone to illness (gastrointestinal) and injury (lacerations from broken glass). While many disaster medical problems can be managed by those who have general medical knowledge, children who suffer symptomatic dehydration, serious infection, and significant trauma often require the resources available at a pediatric center. As noted by Dr. King and co-authors, during a disaster, pediatric acute care resources in Seattle-King County may not be accessible by ground transportation to 73% of the pediatric population. Failure to appreciate the challenge of access to surge resources for affected populations can result in a mismatch of surge resources and the target populations.

While not a part of the Seattle-King County study, another issue is the ability of healthcare providers to be physically present for disaster response

duties at hospitals. It is probable that many physicians, nurses, and medical support staff live in residential areas that are removed from healthcare sites. During disasters, lack of transportation access routes may result in challenges for healthcare providers to be at hand to provide health care. Considering this potential, it is not inappropriate to assume that due to site access, many healthcare providers may not be able to staff acute care centers in support of surge efforts.

The authors of the Seattle-King County paper are to be congratulated for their contribution to the disaster medical science knowledge base. They have shown that regionalization of specialty care for pediatric patients may result in lack of access of care during disaster events because there is "cut off" of ground transportation routes. This important concept has not been addressed in large projects designed to develop medical surge capacity. Access for populations to medical surge resources is an important component of providing medical surge capacity.

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#### References

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