Commentary: Admission is not absolution—The burden of proof remains

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Disclosures: Author has nothing to disclose with regard to commercial support.

Received for publication Oct 4, 2019; revisions received Oct 4, 2019; accepted for publication Oct 7, 2019; available ahead of print Nov 14, 2019.

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J Thorac Cardiovasc Surg 2020;159:2570

0022-5223/\$0.00

Published by Elsevier Inc. on behalf of The American Association for Thoracic Surgery

<https://doi.org/10.1016/j.jtcvs.2019.10.020>

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Central Message

Acknowledged limitations in a data set do not diminish the burden of proof.

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In their article in this issue of the *Journal*, Levinsky and colleagues¹ attempt to examine the outcomes of delayed or salvage versus timely esophagectomy by interrogating the ubiquitous National Cancer Database (NCDB). The overarching purpose of this study was to determine whether delayed or salvage esophagectomy is safe and efficacious, and this is a reasonable question. In the end, however, is the NCDB, with its inherent limitations, capable of answering it?

First and foremost, the NCDB does not track terms such as *delayed* or *salvage* with regard to esophagectomy, and the classifications of these cohorts by Levinsky and colleagues¹ is thus based on their assumptions that certain time intervals equate with either a delayed or salvage surgery. Unfortunately, such assumptions overlook the likely true, complex narratives of why these operations were delayed in the first place, facts that we can never know. It thus takes quite a leap of faith to accept that an interval of time mathematically arrived at is a direct correlate with an esophagectomy being performed, for example, for recurrent or persistent disease.

Perhaps the greatest value of the work of Levinsky and colleagues¹ lies in the inequity they have inadvertently demonstrated in creating these patient cohorts. For instance, an analysis of the delayed or salvage group exemplifies how, even in the rather limited sphere of surgically managed esophageal cancer, the treatment of disadvantaged patients is commonly delayed. For instance, Levinsky and colleagues¹ note that many in this cohort are poor, black, and of low income. Thus, as in other aspects of life, those less fortunate must wait longer for treatment and must overcome greater obstacles to reach the operating room. These realities raise the question of how many, for any of myriad reasons, were never referred or were determined not to be surgical candidates on examination. This is a reality that

inevitably leads to potential, and in this case quite likely, selection bias.

Levinsky and colleagues¹ acknowledge these limitations in their discussion, alluding to the NCDB's deficiencies in granularity, a commonly repeated declaration to which any study that uses this database must tacitly admit. A frequently expressed rationale is that the sheer size of the data set provided by the NCDB is an appropriate counterweight to the data that cannot be known. I would argue just the opposite, particularly when the assumptions made represent the very foundation for the study itself. Merely admitting to these data gaps does not absolve the investigators, on whom the burden of proof resides. In the end, the NCDB is a large, comprehensive database that captures a vast majority of patients with cancer in this country, but it is inherently beset by certain limitations that make it a less than ideal instrument for answering questions of such specificity as the one being addressed here. So is a delayed or salvage esophagectomy just as safe and efficacious as a timely operation? I remain unconvinced. Is the timeliness of one's treatment adversely effected by race and socioeconomic status? Sadly, and undoubtedly, yes.

Reference

1. Levinsky N, Wima K, Morris MC, Ahmad SA, Shah S, Starnes S, et al. Outcome of delayed versus timely esophagectomy after chemoradiation for esophageal adenocarcinoma. *J Thorac Cardiovasc Surg*. 2020;159:2555-66.