The American Journal of Surgery 220 (2020) 249

Contents lists available at ScienceDirect

The American Journal of Surgery

journal homepage: www.americanjournalofsurgery.com

Letter to the Editor

Opportunity cost of mean 1.7 minutes of tardiness of late first case of the day starts

Hicks et al. estimated opportunity costs of first case delays.[1] The authors summarized our study[2] as showing "delays in first case start times" can be "an important cause for increased staffing needs and overtime labor costs." Hicks[1] appropriately estimated the "opportunity cost related to first case delays" "using the cost of idle labor and overtime for staffing rooms beyond the scheduled end times."[1] They did so with "designated eight-hour blocks."[1] They obtained a "total loss of 631 hours" by summing, over cases from 2018, times from the start of the regular workday until the patient entered each operating room (OR).[1] They estimated the opportunity cost by multiplying by the estimated cost per minute at their hospital.[1]

Our paper's Introduction explained that such estimation of opportunity cost can be highly inaccurate.[2] For individual hospitals and scientific studies, McIntosh's methodology should be applied.[2,3] Our paper gave approximate costs and only for "ORs with >8 hours of cases and turnovers."[2] The opportunity cost can be zero[2,3] for services with mean total hours of cases and turnovers per OR <8 hours, the duration of Hicks'[1] blocks. Because opportunity costs relate, by definition, to staff scheduled hours, the minimum periods would be of Hicks' blocks. If staff are scheduled to work 8 hours (e.g., 7:00 a.m. to 3:30 p.m. with unpaid lunch), there is no opportunity cost to the last case ending at 3:22 p.m. rather than 3:10 p.m., using 12-min from their Results. We recently studied a service with mean 6.87 hours of cases and turnovers (standard deviation 1.02 hours).[4] The adjusted utilization (with turnover times) of 8 hours "block" was ≅85%. By multivariable analyses, there was no association ($P = 0.27$) between the percentages of late first case starts and the minutes of cases beyond 8 hours[4] (i.e., nursing overtime used by Hicks[1]). If Hicks' services had mean < 8 hours of cases in some ORs, they should not have calculated "$78,623 for nursing overtime."

Hicks' 21 services may have many combinations of service and day of the week with mean total hours of cases and turnovers per OR >8 hours (i.e., for which their cost calculations were valid[2]). For what percentage of these combinations was this true? To the extent that their opportunity costs included service and day of the week combinations with ≤8 hours, their estimated opportunity costs were inflated. This percentage is important for the generalizability of their findings because nationally many ORs have <8 hour workloads.[5]

Funding

Departmental.

Declaration of competing interest

None.

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23 September 2019

https://doi.org/10.1016/j.amjsurg.2019.10.016