See Article page 2195.

Commentary: In defense of the Hawthorne effect

Christopher A. Caldarone, MD

Studies that demonstrate improvements in performance during a period of observation must overcome a challenge that the observed improvement might be due to the Hawthorne effect.¹ This effect was originally described when studying worker productivity during the late 1920s. Anecdotally, worker productivity improved during a period of observation, but this improvement disappeared after cessation of the observation interval. The Hawthorne effect carries a somewhat negative connotation as being indicative of a short-term improvement that will fade away as soon as the observation period ends. What happens if the observation period never ends?

The congenital heart disease community has been under continuously increasing observation over the past decade. Publicly reported databases, collaborative databases, and various administrative datasets have steadily increased the ability of health care providers to see their performance within the context of others. Gaies and colleagues² demonstrate improvements in surgical outcomes for programs that participate in the Pediatric Cardiac Critical Care Consortium collaborative. The article by Gaies and colleagues² was subsequently reviewed by Peter Laussen³ who eloquently frames the achievements of the Pediatric Cardiac Critical Care Consortium collaborative within the context of steady evolution in the relationship between observation, data, and performance.

Laussen³ outlines a common observation that participation in a collaborative creates Hawthorne-like improvement

Christopher A. Caldarone, MD

CENTRAL MESSAGE

Increasing availability of comparative data improves performance.

in performance. It is difficult to pinpoint exactly how participation in a collaborative improves performance. At the very least, participation makes it impossible to hide from comparative data.

Comparisons of performance require accurate risk adjustment models. Unfortunately, many models include variables that are not modifiable by the caregiving team (eg, genetic syndromes). Laussen³ outlines the challenging frontier in evaluating programmatic performance, which includes characterization of (currently) unquantifiable clinical factors, including the quality/process of surgical decision making, the processes included in multidisciplinary care delivery, the ability to predict/prevent/rescue in real time, and the ability of a program to utilize comparative data to improve. These latter (currently) unquantifiable factors are likely to be important characteristics of a program that outperforms others.

Laussen³ extends a vision of the future that includes the use of continuous real-time physiologic data to provide instantaneous clinical predictions and recommendations. It is likely that continuing integration of databases across collaborative organizations will eventually coalesce into a linked federated system so that data across platforms will be accessible from a single source to guide clinical care, performance review, and improved risk adjustment capabilities. As Laussen notes,³ the ideal clinical program will be “self-critical and importantly possess a questioning attitude and culture that can drive change and adapt quickly.” The availability of comparative data will provide fuel for our questioning attitudes and further drive our cultural hunger to improve our performance.

From the Division of Congenital Heart Surgery, Departments of Surgery and Pediatrics, Baylor College of Medicine and Texas Children's Hospital, Houston, Tex.

Disclosures: The author reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication June 26, 2020; revisions received June 26, 2020; accepted for publication June 26, 2020; available ahead of print July 14, 2020.

Address for reprints: Christopher A. Caldarone, MD, Division of Congenital Heart Surgery, Departments of Surgery and Pediatrics, Baylor College of Medicine and Texas Children's Hospital, 6651 Main St, Mail Code 19345H, Houston, TX 77030 (E-mail: cacaldar@texaschildrens.org).

J Thorac Cardiovasc Surg 2021;161:2200-1
0022-5223/\$36.00

Copyright © 2020 Published by Elsevier Inc. on behalf of The American Association for Thoracic Surgery

<https://doi.org/10.1016/j.jtcvs.2020.06.116>

I cannot comment on the level of personal motivation amongst the workers in the Hawthorne Works in the 1920s where the drive for improvement dissipated with the termination of the observation period. In our profession, it is in our nature to drive ourselves—and with an observation period that will never end, we will continue to enjoy the upside of the Hawthorne effect.

References

1. Mayo E. *The Social Problems of an Industrial Civilisation*. Milton Park: Routledge; 1949.
2. Gaies M, Anderson J, Kipps A, Lorts A, Madsen N, Marino B, et al. Cardiac Networks United: an integrated paediatric and congenital cardiovascular research and improvement network. *Cardiol Young*. 2019;29:111-8.
3. Laussen PC. Sharing and learning through the Pediatric Cardiac Critical Care Consortium: moving towards precision care. *J Thorac Cardiovasc Surg*. 2021;161:2195-9.