



Measuring longitudinal adherence to screening needs international standards

Sir,

Flemish women with at least 70% breast screening uptake and an average interscreening interval of 20–28 months (regular attenders) were found to be six times less likely to be diagnosed with advanced breast cancer than never attenders [1]. We believe that this effect size, about three times larger than ever reported, is primarily conditioned by the measure of screening regularity chosen in this study. Replicating Ding's metric with Swiss mammography screening data comparable to Flanders [2], we evidenced that the definition of regular attenders is very sensitive to the chosen interscreening interval: their proportion halves from 29% to 15% when the interval reduces from 20 to 28 to 23–25 months, likely affecting the effect size of regular attendance.

This stresses the need to use standardized and adequate indicators of longitudinal adherence [3]. Using the proportion of time someone is up-to-date with screening recommendation allows reliable comparisons across settings and avoids the above-mentioned limitation [4]. This “proportion of time covered” requires no arbitrary categorization [5]. Finally, time since last mammography (TSLM) strongly drives the risk of advanced breast cancer at diagnosis. However, the metric used favours screening frequency over TSLM. For instance, in five screening opportunities, regular attenders include those with four consecutive screens but the last one, when over three years could elapse since last screen, whereas women screened on their last three invitations only are irregular attenders, despite their shorter (sometimes below one year) TSLM.

References

- [1] Ding L, Greuter MJW, Truyen I, Goossens M, De Schutter H, de Bock GH, et al. Irregular screening participation increases advanced stage breast cancer at diagnosis: a population-based study. *Breast* 2022;65:61–6.
- [2] Bulliard J-L, Ducros C, Dayer E, Arzel B, Levi F. Variation in performance in low-volume mammography screening programmes: experience from Switzerland. *Cancer Epidemiol* 2011;35(3):293–7.
- [3] Bulliard J-L. Time to use measures of longitudinal adherence in cancer screening programmes. *Int J Cancer* 2021;149(2):248–9.
- [4] Doria-Rose VP, Lansdorp-Vogelaar I, McCarthy S, Puricelli-Perin DM, Butera V, Segnan N, et al. Measures of longitudinal adherence to fecal-based colorectal cancer screening: literature review and recommended approaches. *Int J Cancer* 2021;149(2):316–26.
- [5] Chubak J, Anderson ML, Cook AJ, Murphy CC, Jackson ML, Green BB. Methodologic considerations in calculating and analyzing proportion of time covered as a measure of longitudinal cancer screening adherence. *Cancer Epidemiol Biomarkers Prev* 2020;29(8):1549–56.

Karen Brändle, PhD

Center for Primary Care and Public Health (Unisanté), University of Lausanne, Lausanne, Switzerland

Jean-Luc Bulliard, PhD*

Center for Primary Care and Public Health (Unisanté), University of Lausanne, Lausanne, Switzerland

* Corresponding author.

E-mail address: jean-luc.bulliard@unisantech.ch (J.-L. Bulliard).

<https://doi.org/10.1016/j.breast.2022.09.011>

Received 19 August 2022; Accepted 30 September 2022

Available online 3 October 2022

0960-9776/© 2022 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).