Age: A variable whose definition we should not ignore

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To the Editor—The age of included patients is described as a demographic patient characteristic in many research articles, and handled as a continuous variable, expressed as a mean with standard deviation or median with interquartile range, or as a categorical variable. However, in the methods section of articles, how the age of patients was calculated was almost never explained. The starting point is obvious: the birth date of the included patient. However, the second date is not always that obvious; especially when dealing with different follow-up and inclusion times, it can become difficult. What should one do—calculate age at time of inclusion in the study, calculate age at time of the outcome measure, or maybe calculate age at time of hospital admission? Additionally, should age be considered a discrete value or a continuous value including months? To gain insight into how authors handled the demographic variable age, I considered the original articles in the latest issue of Infection Control and Hospital Epidemiology, volume 40, issue 8 (August 2019).

Of 8 original articles in this issue, 6 (75%) described age as a demographic patient characteristic. Fridkin et al1 classified age as a categorical value. In their article, age was described as the average age of residents followed by a median, but the point in the study at which the age was calculated was not stated. Dyer et al2 were more clear: age was classified as a continuous variable and described as mean age. A footnote of their table 3 states that pediatric admission was defined as 0–17 years of age at hospital admission. Asundi et al3 conducted a cohort study including 2,059 patients with a median age of 71.7 years, but how was age determined? In the methods section, they stated that age was part of the prospectively collected data; however, for the variable age, was age considered at the moment of the procedure considered or age at admission? Elman et al4 classified age as a categorical variable, and they described 4 different age groups, but was age taken at time of detecting the outcome measure (ie, urinary tract infection) or at admission? Jiang et al5 calculated a median age; however, which dates were taken into account when calculating age, such as age at time of enrollment, was not stated. Nesher et al6 presented age as a mean in their table 2; however, its definition was not described in the methods section of the article. Was age taken as age at the time of diagnosis? In the methods section, they stated that all data were collected prospectively, but similar to Asundi et al, it is unclear how the age of patients was handled in this study.

None of the articles stated whether age was considered a discrete value from the start, or whether months were taken into account for individual patients during analyses. In only 1 of these 6 articles was it somewhat clear that age at admission was used. One might think, what is the problem with being a few months off, or when dealing with discrete values, possibly a year off? This is the reason: Our goal is to conduct research in the best way we can. Even small things matter because when data are combined, they may reveal something larger. Therefore, I feel that age of patients should be described in a more specific and consistent manner. Future studies should investigate which definition is best and should propose which measurement should be used.

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