

Should patient satisfaction scores determine healthcare staffing levels?

England's NHS managers, practitioners, researchers and academics are fortunate to have detailed primary care general practice patient satisfaction scores (NHS England, 2016) and general practice staffing data (NHS Digital, 2017a) at their fingertips; moreover, the scores that are structured in a way that allows data pairing. These data are unique in a workforce planning and development (WP&D) context because they have an intimacy not often encountered in healthcare data sets, i.e., general practice:

- (1) list sizes (registered patients) are relatively small, averaging around 7,500 and are well defined (e.g. by age group) (NHS Digital, 2017b);
- (2) staffing establishments are comparatively stable with a narrow skill mix; and
- (3) patients can be registered with the same practice all their lives, so treatment and care has continuity, i.e., patients often see the same practitioners.

These characteristics mean that primary care WP&D data have greater utility, power and meaning. If we extract the relevant data sets from NHS Digital and NHS England (NHS Digital, 2017a, b) then we can explore whether general practice list size, staffing and patient satisfaction are associated. Correlation statistical notation (r) falls between -1 and 1 , i.e., an r approaching -1 means that one variable rises and the other falls uniformly. As r approaches 1 , variables rise in unison. If $r = 0$, then there is no association among variables, i.e., they vary randomly. Analysis shows that list size and staffing correlation is positive and is statistically significant ($r_s = 0.881$, $n = 6,582$, $p < 0.0001$), i.e., as general practice list size increases, so does staffing levels, which implies that the practice managers are gearing staffing to list size, which is encouraging. With a strong, positive list size and staffing establishment correlation, exploring primary care WP&D in more detail is worthwhile. For example, the patients who attend better-staffed general practices are more satisfied with services because they are more likely to:

- (1) get early appointments;
- (2) be seen on time;
- (3) have longer consultations with practitioners;
- (4) see a preferred practitioner; and
- (5) encounter less-harassed staff.

An extended analysis shows that the relationship between general practice patient satisfaction scores and general practice staffing is statistically significant ($r_s = -0.246$, $n = 208$, $p < 0.0003$), i.e., as patient to staff ratios increase, the patients become dissatisfied. Using practice list size, practice staffing and patient satisfaction data sets, we can extract three important WP&D measures:

- (1) in all practices, there is one full-time equivalent (FTE) general practitioner to 2,275 patients;
- (2) in practices where patients are more satisfied (top quartile), the ratio is 1 FTE to 2,005 patients; and
- (3) in practices with the least satisfied patients (bottom quartile), the ratio is 1 FTE to 2,557 patients.



The difference between top and bottom satisfaction practices cannot be ignored because in the top satisfaction practices, an additional 15 patients in 100 are more satisfied with services than their counterparts in the bottom satisfaction practices. The patient to staff ratio difference between the top and bottom patient satisfaction groups is statistically significant (Wilcoxon-Mann-Whitney $W = 3,771$, $N1 = 49$, $N2 = 59$, $p = 0.0006$) and each general practitioner working in lowest satisfaction practices looks after an additional 552 patients compared to his/her colleague in top satisfaction practices, supporting our assertion that patients may be more dissatisfied because their primary care experiences are less acceptable. These associations are important for workforce planners, i.e., patient satisfaction practice patient to staff ratios in practices with the highest patient satisfaction scores can be used as a denominator when calculating recommended staffing using general practice list size as a numerator. In short, the best practice denominator has two main functions:

- (1) Practice managers can calculate their own staff to patient ratio to check if their practices are outliers.
- (2) During staffing reviews (e.g. when practices merge), general practice managers can divide the top patient satisfaction practice denominator into the new list size; e.g., if the practice list size increased from 5,000 to 10,000 patients, then five FTE general practitioners are needed ($10,000/2005 = 4.98$ FTEs), i.e., five clinicians who should have time to deliver top-quality care.

Correlations denote associations, not cause and effect, i.e., patient satisfaction may not be the main driver for determining appropriate staffing levels. There may be general practice structures and processes operating that do not influence practice patient satisfaction but do affect staffing, e.g., remote outpatient clinics held in general practice premises – a service that probably looks after patients registered with other general practices. There are other limitations that make us cautious about the way we interpret our results. For example, we excluded practices in the analysis when key information, such as general practice FTEs, was not submitted to NHS Digital. It is also possible that some practice managers submitted incorrect data, e.g., managers may not have included temporary staffing in their returns in practices that are genuinely understaffed and where managers using locum staff to fill gaps. Nevertheless, the three-data set sample size is sufficient for WP&D purposes. Roles are extending in primary care, so it may pay to include other direct care and support staff. The numerator/denominator procedure, therefore, should be repeated for other practice staff groups who influence general practice patient satisfaction.

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References

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