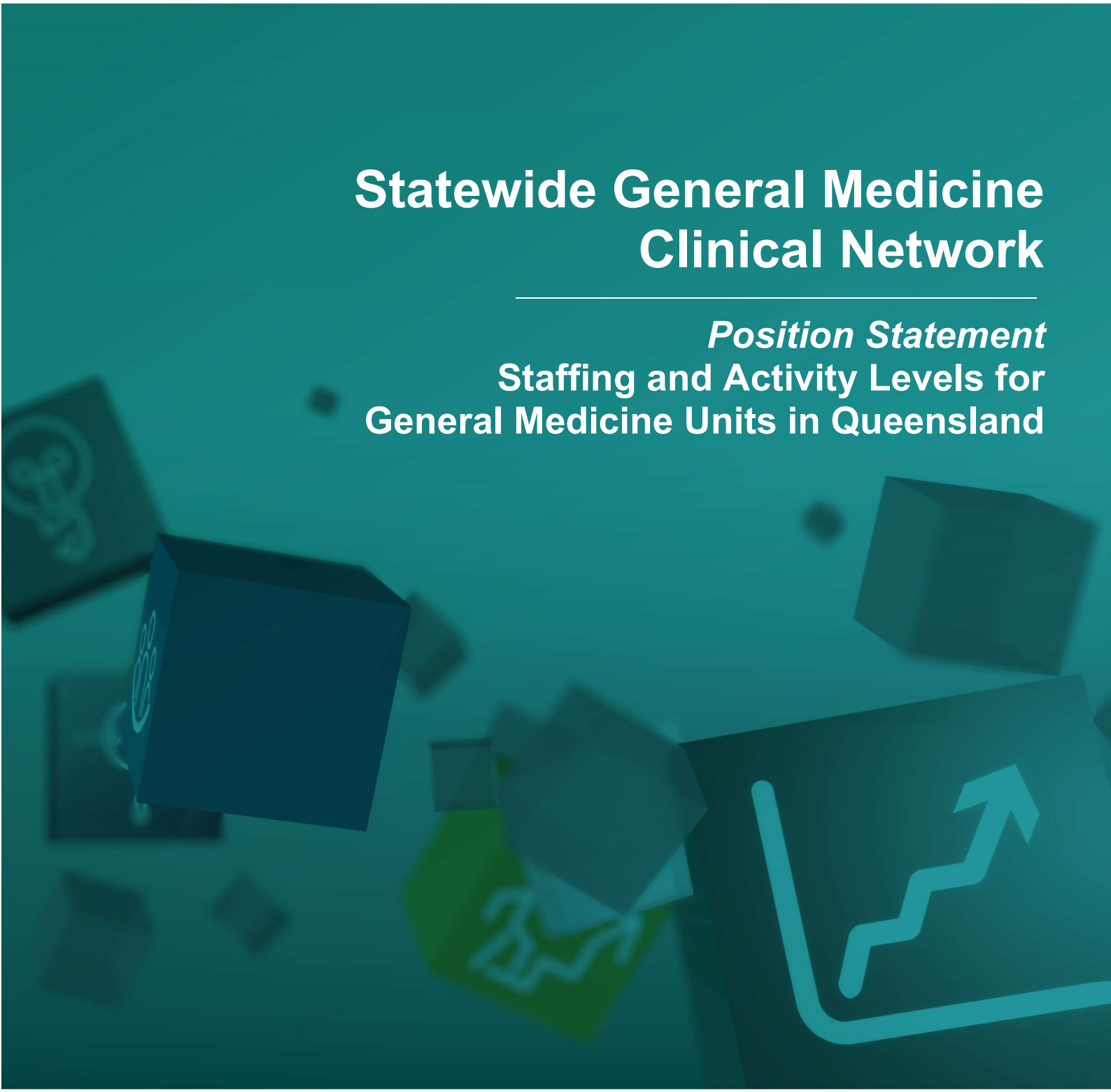
Queensland Health

Clinical **Excellence** Queensland

Statewide General Medicine Clinical Network

Position Statement
Staffing and Activity Levels for General Medicine Units in Queensland



Improvement | Transparency | Patient Safety | Clinician Leadership | Innovation

Queensland Government

Position Statement

Staffing and Activity Levels for General Medical Units in Queensland

Principal author:

Ian Scott MBBS, FRACP, MHA, MEd

Director, Department of Internal Medicine and Clinical Epidemiology

Princess Alexandra Hospital, Brisbane

Co-Chair, Statewide General Medicine Clinical Network

On behalf of the Statewide General Medicine Clinical Network Workforce Working Group

Published by the State of Queensland (Queensland Health), February 2019

For more information contact:
Statewide General Medical Clinical Network, Healthcare Improvement Unit, Department of Health, GPO Box 48, Brisbane QLD 4001, email Statewide-GeneralMedicine-Network@health.qld.gov.au, phone 33289184.

An electronic version of this document is available at:
https://qheps.health.qld.gov.au/caru/networks/general-medicine

Summary

The purpose of this position statement from the Statewide General Medicine Network (SGMCN) executive is to provide guidance to the Queensland Health Department of Health, Hospital and Health Service (HHS) managers, and clinical directors about the appropriate staffing and activity levels for general medicine units in public hospitals throughout Queensland.

Definition of a General Medical Unit

For the purposes of this position statement, the definition of a general medicine unit is separate to that of a general medicine department. A unit is the basic working component of a department assigned to an individual consultant physician. In proposing the following staffing and activity levels, we are referring to a general medicine unit that is exclusively involved in general medicine activities. These recommendations will need to be adapted as necessary to accommodate locality-specific service configurations required to meet local service demands. These recommendations do not apply to other units such as medical planning and assessment units, clinical decision units, or day investigation and treatment units in which general physicians may be involved.

Methods and Caveats

This statement is based on review of relevant professional guidelines where available,[1-6] published literature (see below), recent surveys of SGMCN members and allied health professionals,[7,8] discussions involving members of the SGMCN executive and the SGMCN Workforce Working Group, proceedings of a workshop held 9/2/18 to identify basic principles and draft recommendations, and comments from individuals from the SGMCN membership (see acknowledgements below).

Overall, there is little published data to define a methodology for determining the minimum number of physician staff and skill-mix that would assure safety in acute medicine.[9] More evidence is available as to the most appropriate levels of qualified nursing staff although the exact mix of registered and senior nurses versus junior nurses or nurse assistants remains uncertain.[10-13] There has been little research that indicates what might be the most desirable staffing levels for allied health professionals.[14,15] Systematic reviews of studies of additional physiotherapy for acute and subacute wards undertaken by Australian researchers have

suggested reduced length of stay and improved patient outcomes, but have given no indication of ideal staffing levels.[16,17] The SGMCN sponsored a survey of the Queensland general medicine allied health workforce in 2012 but this generated no recommendations as to best practice staffing levels.[18] Reference was made to proposed allied health staffing levels per patient bed produced by the Australian Allied Health Benchmarking Consortium.[19]

Because of the paucity of robust data, there is currently insufficient evidence to mandate specific levels of staffing and services in the acute hospital setting. The recommendations within this statement are therefore based on consensus opinion, informed by evidence as currently exists, and should be considered indicative rather than definitive. This is in recognition of the diverse scope of practice, patient case-mix, and activity profiles of general medicine units throughout the state. Accordingly, the recommendations are not intended to be binding on any unit or party, or to be used in any formal accreditation or audit process, and may need revision in response to future changes in general medicine practice and standards. There is no 'optimal design' for local services, and their configuration will depend on the local context and the specialty-specific balance between access, workforce, quality, finance, and use of technology.[20] There may also be considerable division of workload and staffing between in-patient units and other units such as medical assessment and planning units, most of which are led by general physicians.

The recommendations in this statement are based on 85% bed occupancy, with on average 85% acute patients and 15% non-acute patients, average length of acute stay of 4 to 7 days, and normal working day 8am to 4.30pm Monday to Friday. They also assume the standards of care for general medicine services, as detailed in the SGMCN position statement on quality and safety of general medicine services (available at: https://qheps.health.qld.gov.au/caru/networks/general-medicine), are, in general, being adhered to, especially in regards to timely access to care (Queensland Emergency Access Target [QEAT]) and consultant review. It is also assumed every hospital will have in place escalation procedures that ensure unplanned surges in activity or prolonged lengths of stay do not impose inordinate workloads on staff that may compromise patient safety. In regards to junior staff from each discipline, the recommendations do not attempt to account for different levels of experience or capacity of staff eg, basic versus advanced physician trainees as medical registrars; level 4 versus level 1 nurse, etc. The recommendations also recognise that a significant portion of time of staff time (eg. between 30% and 70% of

medical staff) is spent on indirect patient care, including documentation, patient and family communication and counselling, and co-ordination of care.[21]

Enactment of the recommendations must recognise the conditions of employment stipulated under the relevant QH industrial staff awards in regards to maximum shift hours, fatigue leave, and leave entitlements. This position statement only relates to duties undertaken within a particular general medicine unit and does not cover whole-of-hospital functions that general medical junior staff may be involved in, such as out-of-hours general ward call, leave cover, or secondment cover. The recommendations assume as much care as possible is delivered during the normal working day, thus minimising the burden on out-of-hour teams of 'legacy' work (ie predictable tasks more safely and efficiently done by day teams). The recommendations recognise there must be sufficient time available for staff to attend to all required in-service training and education programs.

Medical staffing and activity levels

Consultant staff

- Each consultant unit is supervised by a consultant general physician, or a general physician with subspecialty interest provided that at least 50% of clinical service time is spent by that person undertaking general physician activities.

- Each unit supervised by 1.0 FTE general physician providing 100% general medicine service has an inpatient caseload which ranges between a minimum of 12 patients and a maximum of 20 patients, and averages 600 to 1000 admissions per year per 1.0 FTE consultant physician (ie about 12 to 20 admissions per week).[5] There is evidence that admission rates per unit of less than 5 per week are associated with longer length of stay compared to units with higher rates.[22] The inpatient load can be reduced in proportion to the decrease in full-time equivalent hours spent by the consultant physician on general medicine services. This recognises that some consultant physicians will spend a certain proportion of their time in affiliated non-general medicine disciplines such as clinical pharmacology, hospital in the home, acute stroke medicine or perioperative medicine.

- Each unit should ideally have on-site consultant cover every day of the working week for a certain period of time, regardless of whether the consultant is full-time or part-time. This period will vary according to patient numbers for each unit and may necessitate cross-cover from another on-site consultant if the part-time consultant is not available. Evidence suggests that the absence of such cover is associated with higher case fatality rates and higher readmission rates.[23]

Registrar and resident staff

- Each unit supervised by 1.0 FTE consultant physician providing 100% general medicine service has 1.0 FTE medical registrar and 2.0 FTE residents or interns. These FTE positions can be reduced in proportion to the decrease in numbers of inpatients within each unit in accordance with the decrease in FTE hours spent by the consultant physician on general medicine services.

Work profiles

- Acute on-take roster: Each unit participates in an acute on-take roster at least once every 7 to 14 days (this includes week-end days) depending on whether the consultant is 1.0 or 0.5 FTE respectively (or fractions in between). The duration of the on-take period may vary from 12 to 24 hours depending on the rate of admissions, with preferably no more than 5 to 10 admissions (either new or readmissions) to any one unit per on-take period, depending on whether consultant is 0.5 to 1.0 FTE respectively. It is estimated that, on average, a medical registrar will require 45 to 60 minutes to adequately assess and manage an acute patient.[5] A single medical registrar cannot work more than 12 continuous hours, so any on-take period longer than this will require other registrars to participate in processing admissions who may not be the day time registrar to that unit. This necessitates appropriate handover from the evening or night admitting registrars to the day-time post-take medical registrar and consultant.

- Post-take ward rounds: The on-take unit should conduct a post-take consultant ward round at the end of the on-take shift (in most cases 8am) following handover from the night medical registrars, in which every newly admitted patient is reviewed at the

bedside. It is estimated that a consultant will take a minimum of 4 hours to satisfactorily assess 10 new patients on post-take ward rounds.[5]

- Ward rounds: Each unit conducts a minimum of 2 face to face consultant-led ward rounds per working week, which include post-take ward rounds, in addition to daily debriefing rounds (board or list or virtual rounds) on non-ward round days, with the consultant reviewing patients face to face as necessary.[1] Registrars and their interns will conduct ward rounds of all patients daily on week-days in collaboration with nursing and allied health colleagues.

- Outpatient clinics: Each unit conducts a minimum of 1 outpatient clinic per week of 3 to 4 hours duration, and up to 2 clinics per week if consultant is 1.0 FTE. The numbers of new and review patients per clinic will vary according to local circumstances, but a common working rule for a clinic attended by both consultant and registrar is between 2 and 3 new referrals and between 4 and 6 review patients for each 3-hour session.

- Week-end reviews: Each unit should have all their existing patients reviewed by an intern or resident each day of the week-end; patients newly admitted on week-end on-take periods will be reviewed by the post-take team. The number of hours that junior staff should be rostered each day to conduct week-end rounds has been estimated at around 4 hours for every 15 patients, assuming that as many as 1 in 5 patients do not require detailed review (eg stable patients waiting rehabilitation bed or residential care).[5] Junior staff should have access to an on-site medical registrar for advice and, if necessary, review of unstable patients. The number of hours a registrar may need to provide this cover has been estimated at around 1 hour for every 15 patients.[5] The medical registrar should in turn have access to an on-site consultant for advice and patient review, and this might be best provided by the post-take consultant who is on-site conducting post-take rounds.

- Consultant work profile: The duties and proportion of time spent on each for each 1.0 FTE consultant is proposed as follows:
    - 0.5 FTE direct inpatient care (includes multidisciplinary meetings, family conferences, external consultations, medical procedures, etc); 0.2 FTE direct outpatient care (includes telehealth clinics, chart reviews, phone or e-consultations);

- 0.1 FTE education and research (includes journal club, post-graduate teaching of all types, junior medical officer assessments, CME activities, research projects, etc);
- 0.1 FTE administration (clerical work, complaints, committee activities, clinical governance, mortality and morbidity meetings, quality improvement projects, etc);
- 0.1 FTE miscellaneous (internal cover for colleagues on leave or performing off-campus activities, unplanned activities or demands)

Nursing staffing levels

- The staffing profile of individual wards is determined through the application of the Business Planning Framework and Service Profile of the ward. The definition of a nurse is one who is registered or endorsed with the Australian Health Practitioner Regulation Authority. Staffing levels may need to be different with greater numbers of higher acuity patients or within specialised ward areas such as high-risk areas for patients with challenging behaviors or high falls risk.

- The minimum ratio of registered nursing staff providing direct patient care is 1 nurse per 4 patients during day and evening shifts (in most hospitals 6am-2pm and 2pm to 10pm respectively) and 1 nurse per 7 patients for night shift (in most hospitals 10pm-6am).

- In addition to direct patient care nursing staff, the indirect care requirements of the ward include 1.0 FTE nurse unit manager, 1.0 FTE nurse educator (or equivalent), 0.4 FTE clinical nurse consultant and 1.4 FTE patient flow nurse. These staff would focus on patient flow, team leadership and support, complex discharge planning, education, research and quality improvement. These staff would be rostered such that there would be morning and afternoon clinical support and team leadership 7 days a week.

- There will be a need to access specialty nursing in providing care to patients with special needs, such as those with mental health disorders, wound care, tracheostomy, or other problems requiring specialty-specific nurses.

Allied health staffing levels

- Allied health workforce in a general medical ward should include all seven core disciplines as follows:
    - Nutrition and Dietetics
    - Occupational therapy
    - Physiotherapy
    - Pharmacy
    - Speech pathology
    - Social work
    - Neuropsychology
    - Allied health assistants to source equipment and deliver one on one or two on one assistance under the supervision of the heath practitioner
    - Funded access to Podiatry and Prosthetics & Orthotics should also be provided at the level required for the unit caseload.

- Proposed FTE staffing levels (see below) recognise that:
    - Many older patients in many general medicine units have major physical and mental impairments that benefit from allied health input. This will vary, for each discipline, from prolonged daily to less intensive contact time.
    - Staffing levels must be adequate to meet the following demands: expediting flow of patients requiring rehabilitation or complex social care needs; mobilization of patients requiring two or more staff to assist; complex equipment prescriptions; assessment of patients undergoing National Disability Insurance Scheme (NDIS) processes; dealing with high patient turnover; or meeting specialised functions such as caring for acute stroke patients, bariatric patients or other high-demand patient cohorts.
    - Allied health professions do not have pools of casual staff on whom they can call to support emergent need or to cover leave, and therefore staffing levels need to account for this in order to ensure patient flow.
    - Ideally, staffing levels should relate to numbers of patients who need to be seen for an average daily contact time by allied health staff on any working day, rather than FTE per 28-bed ward.

- Factors that are relevant in estimating allied health staffing levels include:
    - 75:25 clinical to non-clinical care ratio, with 5 available clinical hours in an average working day which includes patient time, case conferences, ward meetings and family meetings. The remaining non-clinical hours are allocated to professional development, supervision, and administration.
    - Skill mix and supervisory requirements that ensure adequate clinical governance - as the group increases in size a profession-specific team leader (TL) is also required: 2 FTE at HP3 level with 1 FTE HP4 level staff member (TL); 5 FTE at HP3 and 4 level with 1 FTE HP5 level staff member (TL).
    - Therapy assistant to therapist ratios to support direct patient care.
    - Administration support.
    - Recognition that an increase on historic week-end staffing levels will ensure patient flow, which needs to be accompanied by a change in the model of care to support week-end discharge.

- Estimates of the numbers of patients who can be seen per day per 1 FTE are listed below, based on short lengths of stay and efforts required for discharging patients and preparing assessments of patients potentially eligible for rehabilitation:
    - Nutrition and Dietetics: 6 patients/day
    - Occupational therapy: 5 patients/day
    - Physiotherapy: 7 patients/day
    - Pharmacy: 20 patients/day
    - Speech pathology: 6 patients/day
    - Social work: 5 patients/day
    - Neuropsychology: up to 5 patients/day (NB. If comprehensive assessment/intervention is required, more likely that 1-2 patients would be seen per day)
- In estimating how these ratios might translate into FTE for a 28-bed general medicine ward, allied health staff at the Princess Alexandra Hospital (PAH) Department of Internal Medicine have proposed the figures contained in the table below. These are higher than current staffing levels at PAH and are estimated in the absence of explicit published ratios. The limitation of this narrow perspective is acknowledged, but has

taken account of the unpublished work of the Australian Allied Health Benchmarking Consortium regarding current staffing in general medicine units in tertiary teaching hospitals.[19] These figures reflect a genuine attempt to facilitate patient discharge in a timely manner, address low satisfaction of allied health staff in general medicine units across the state as a result of large workloads,[8] and include backfill.

Allied health profession	**Minimum FTE/28 beds**	
	Weekday service	**Weekend & public holiday service** *(Note- this does not support a true 7-day service model)*
Neuropsychology *(If a Neuropsychologist is not available, a Psychologist skilled in the special needs of general medicine units is recommended)*	0.5	0
Nutrition & Dietetics	0.5	On call or as per local arrangements
Occupational Therapy	2	1
Pharmacy	1	0.5 (6 hours/day)
Physiotherapy	2	1
Social Work	1.5	0.5 (6 hours/day)
Speech Pathology	1	0.4 (4 hours/day)
Allied Health Assistants to the following professions	**Minimum FTE/28 beds**	
	Weekday service	**Weekend service**
Neuropsychology, Nutrition & Dietetics, Speech Pathology (shared assistant)	1	0
Occupational Therapy	1	0.5 (6 hours/day)
Pharmacy	0.4	0.2 (2 hours/day)
Physiotherapy	2	1
Social Work	0.5	0

Administration staffing and activity levels

- Administration officers: 2.0 FTE to cover shifts from 7.30am to 6pm Monday to Friday.

Acknowledgements

Particular thanks to the following SGMCN members for their input into this document: A/Prof Nick Buckmaster, Dr Casey Khoo, Dr Greg Plowman, Sue Samuels, Suzanne Wright, Erin Dunn, Urszula Doleka, Margaret Whitehead, Kathy Grudzinskas, A/Prof Jeffrey Rowland

References

1. Royal Australasian College of Physicians/Internal Medicine Society of Australia and New Zealand. Restoring the Balance. Position Statement, 2005. RACP, Sydney, 2005.
2. Royal College of Physicians/Australasian Faculty of Rehabilitation Medicine. Standards for the Provision of Inpatient Adult Rehabilitation Medicine Services in Public and Private Hospitals 2011. RACP, Sydney, 2011.
3. Taylor G, Leversha A, Archer C, et al. Standards of practice for clinical pharmacy services. J Pharm Pract Res 2013;43(2) Suppl: S2-67.
4. Society of Hospital Pharmacists of Australia. Standards of Practice. SHPA, Sydney, 2012.
5. Royal College of Physicians. Guidance on safe medical staffing. Report of a working party. London: RCP, 2018.
6. Royal College of Nursing. Safe and Effective Staffing: Nursing Against the Odds. London: RCN, 2018.
7. SGMCN Workforce and Training Working Group. General medicine consultant workforce survey 2017.
8. SGMCN Workforce and Training Working Group. Allied health professional survey 2018.
9. Sabin J, Subbe CP, Vaughan L, Dowdle R. Safety in numbers: lack of evidence to indicate the number of physicians needed to provide safe acute medical care. Clin Med 2014; 14: 462–7.
10. Aiken LH, Sloane D, Griffiths P, et al. Nursing skill mix in European hospitals: cross-sectional study of the association with mortality, patient ratings, and quality of care. BMJ Qual Saf 2017; 26: 559–568.
11. Butler M, Collins R, Drennan J, et al. Hospital nurse staffing models and patient and staff-related outcomes. Cochrane Database Syst Rev 2011;(7):CD007019.
12. Kane RL, Shamliyan T, Mueller C, et al. Nurse staffing and quality of patient care. Evid Rep Technol Assess 2007;(151):1-115.
13. Twigg D, Duffield C, Bremner A, et al. Impact of skill mix variations on patient outcomes following implementation of nursing hours per patient day staffing: a retrospective study. J Adv Nurs 2012; 68(12):2710-8.
14. Cartmill L, Comans TA, Clark MJ, et al. Using staffing ratios for workforce planning: evidence on nine allied health professions. Human Resources Health 2012; 10: 2.
15. Nancarrow SA, Young G, O'Callaghan K, et al. Shape of allied health: an environmental scan of 27 allied health professions in Victoria. Aust Health Rev 2017; 41(3):327-335.

16. Brusco NK, Paratz J. The effect of additional physiotherapy to hospital inpatients outside of regular business hours: a systematic review. Physiother Theory Pract 2006; 22: 291–307.

17. Casey L. Peiris, Shields N, Brusco NK, et al. Additional physical therapy services reduce length of stay and improve health outcomes in people with acute and subacute conditions: An updated systematic review and meta-analysis. Arch Phys Med Rehab 2018; 99:2299-312.

18. Queensland Health. Discussion Paper: Allied Health Staffing in Queensland Health Inpatient General Medicine Services. October 2012.

19. Staffing levels. Australian Allied Health Benchmarking Consortium 2017. Available at: http://www.aahbc.org/projects/

20. Imison C, Sonola L, Honeyman M, Ross S. The reconfiguration of clinical services: What is the evidence. The King's Fund, London. 2014.

21. Tipping MD, Forth VE, Magill DB, et al. Systematic review of time studies evaluating physicians in the hospital setting. J Hosp Med 2010; 5: 353-359.

22. Conway R, O'Riordan D, Silke B. Consultant volume, as an outcome determinant, in emergency medical admissions. QJM 2013; 106: 831–837.

23. Bell D, Lambourne A, Percival F, et al. Consultant input in acute medical admissions and patient outcomes in hospitals in England: A multivariate analysis. PLoS One 2013; 8: e61476.