Appendix 5: Staffing the medical wards

Estimates of the staffing requirements of a medical ward with a 4-day length of stay

We found that there was little difference in the staffing needed for a medical ward with a 6-day length of stay as compared with a ward with a 4-day length of stay. The calculations for a 6-day length of stay are shown in the main report. In this appendix we have included the calculations for a ward with a 4-day length of stay for comparison.

Table 1 Tier 1 time on a day without a Tier 2 or Tier 3 led ward round – 30-bed ward, LoS 4 days

Patients	Task	Tier 1 time (minutes)
All	Daily board round	30
7.5 new patient admissions	Handover and assessment (10 minutes per patient with Tiers 2 and 3)	75
7.5 new patient admissions	Clinical tasks arising (10 minutes per patient)	75
22.5 pre-existing patients	Review (7 minutes per patient)	157.5
	Review of care plans with Tiers 2/3 (2 minutes per patient)	45
22.5 pre-existing patients	Clinical tasks arising (5 minutes per patient)	112.5
Discharge process	7.5 per day, 20 minutes per patient	150
All	Unplanned and indirect patient care	300
Total		**945**

This equates to approximately 16 hours of Tier 1 time, equivalent to two full-time Tier 1 clinicians being present on the ward daily.

Table 2 Tier 1 time on a day with a Tier 2 or Tier 3 led ward round – 30-bed ward, LoS 4 days

Patients	Task	Tier 1 time (minutes)
All	Daily board round	30
7.5 new patient admissions	Handover and assessment (10 minutes per patient with Tiers 2 and 3)	75
7.5 new patient admissions	Clinical tasks arising (10 minutes per patient)	75
22.5 pre-existing patients	Ward round (7 minutes per patient)	157.5
22.5 pre-existing patients	Clinical tasks arising (5 minutes per patient)	112.5
Discharge process	7.5 per day, 20 minutes per patient	150
All	Unplanned and indirect patient care	300
Total		**900**

This equates to approximately 15 hours of Tier 1 time, equivalent again to two full-time Tier 1 clinicians being present on the ward daily.

Table 3 Tier 2 time on day without a Tier 2 or Tier 3 led ward round – 30-bed ward, LoS 4 days

Patients	Task	Tier 2 time (minutes)
All	Daily board round	30
7.5 new patient admissions	Handover and assessment (10 minutes per patient with Tiers 1 and 3)	75
22.5 pre-existing patients	Review of care plans with Tier 1 clinician (2 minutes per patient)	45
All	General patient care and meetings with families and other health professionals	30
All	Unplanned and indirect patient care	100
Total		**280**

This equates to approximately 4.5 hours of Tier 2, medical registrar, presence on the ward daily.

Table 4 Tier 2 time on a day with a Tier 2 or Tier 3 led ward round – 30-bed ward, LoS 4 days

Patients	Task	Tier 2 time (minutes)
All	Daily board round	30
7.5 new patient admissions	Handover and assessment (10 minutes per patient with Tiers 1 and 3)	75
22.5 pre-existing patients	Ward round (7 minutes per patient)	157.5
All	General patient care and meetings with families and other health professionals	30
All	Unplanned and indirect patient care	120
Total		**412.5**

This equates to approximately 7 hours of Tier 2, medical registrar, presence on the ward on days when there are Tier 2 led ward rounds.

Table 5 Tier 3 time on a day without a consultant-led ward round – 30-bed ward, LoS 4 days

Patients	Task	Tier 3 time (minutes)
All	Daily board round	30
7.5 new patient admissions	Handover and assessment (10 minutes per patient with Tiers 1 and 3)	75
All	General patient care and meetings with families and other health professionals	30
All	Unplanned and indirect patient care	50
Total		**185**

This equates to 3 hours of Tier 3, consultant, routine daily presence on the ward.

Table 6 Tier 3 time on a day with a consultant-led ward round – 30-bed ward, LoS 4 days

Patients	Task	Tier 3 time (minutes)
All	Daily board round	30
7.5 new patient admissions	Handover and assessment (10 minutes per patient with Tiers 1 and 3)	75
22.5 pre-existing patients	Ward round (7 minutes per patient)	157.5
All	General patient care and meetings with families and other health professionals	30
All	Unplanned and indirect patient care	100
Total		**392.5**

This equates to 6.5 hours of Tier 3, consultant, presence on the ward on days when there are consultant-led ward rounds.

Weekend routine patient review

Estimates of the weekend staffing requirements of a medical ward where 20% of patients do not require weekend review

We found little difference in the staffing requirements of wards with either 20% or 40% of patients not needing routine clinical review over the weekend. We found a slightly reduced need for Tier 1 presence on wards where 40% of patients did not need weekend review.

Table 7 Recommended daily weekend staffing for a 30-bed medical ward

	Percentage of inpatients not requiring daily review	Number of inpatients not requiring daily review	Hours of work	Number of staff needed
Tier 1	20%	6	10	**1.25**
Tier 1	40%	12	8	**1**
Tier 2	20%	6	3	**0.33**
Tier 2	40%	12	2	**0.25**
Tier 3	20%	6	2	**0.25**
Tier 3	40%	12	2	**0.25**

The calculations for the weekend staffing requirements of wards with 40% of patients not needing routine clinical review over the weekend are shown in the main report. In this appendix we have included the calculations for a ward where 20% of patients do not require weekend review, for comparison.

Tier 1 clinicians

Table 8 Weekend daily Tier 1 time on a 30-bed ward with an average length of stay of 6 days

Patients	Task	Tier 1 time (minutes)
All	Daily board round	30
5 new patient admissions	Handover and assessment (10 minutes per patient with Tiers 2 and 3)	50
5 new patient admissions	Clinical jobs arising (10 minutes per patient)	50
6 pre-existing patients	Not requiring review	0
19 pre-existing patients	Review (7 minutes per patient)	133
	Review of care plans with Tiers 2/3 (2 minutes per patient)	38
19 pre-existing patients	Clinical jobs arising (5 minutes per patient)	95
Discharge process	5 per day, 20 minutes per patient	100
All	Unplanned and indirect patient care	100
Total		**596**

This equates to 10 hours of Tier 1 time, equivalent to one full-time Tier 1 clinician present on the ward daily.

Tier 2 doctors

Table 9 Weekend daily Tier 2 time on a 30-bed ward with an average length of stay of 6 days

Patients	Task	Tier 2 time (minutes)
All	Daily board round	30
5 new patient admissions	Handover and assessment (10 minutes per patient with Tiers 1 and 3)	50
6 pre-existing patients	Not requiring review	0
19 pre-existing patients	Review of care plans with Tiers 2/3 (2 minutes per patient)	38
All	Unplanned and indirect patient care	60
Total		**178**

This equates to 3 hours of Tier 2, medical registrar, routine daily presence on the ward.

Tier 3 consultants

Table 10 Weekend daily Tier 3 time on a 30-bed ward with an average length of stay of 6 days

Patients	Task	Tier 2 time - minutes
All	Daily board round	30
5 new patient admissions	Handover and assessment (10 minutes per patient with Tiers 1 and 3)	50
All	Unplanned and indirect patient care	50
Total		**130**

This equates to 2 hours of Tier 3, consultant, routine daily presence on the ward.

Care of patients who are distant from the base medical ward

Many medical teams have clinical responsibility for inpatients who are not accommodated in that team's base ward but are located elsewhere. Such patients are often termed 'outliers' or 'boarders'. The time commitment required by a medical team to look after an outlying patient on a ward that is distant to their own is obviously greater than that required for similar care in that team's own base ward. This inefficiency is a factor that needs to be considered when establishing staffing levels and we estimate that such patients require on average 50% more clinical time simply because of this inefficiency. Where outliers are spread across many distant wards, 50% is likely to be an underestimate. Inefficiencies, and potential risks to patients, increase if the nursing expertise on the outlying ward does not correspond to the needs of the patient.

Potential inefficiencies

Our estimates of the numbers of staff that are needed are not intended to be a description of the current state of affairs on medical wards, but are based on the precepts that all recommendations from the appropriate professional bodies are adopted and that all tasks are completed promptly and to a high standard. Such standards are required to assure patient safety.

Above a certain threshold, the greater the pressure of work, the greater is the risk of suboptimal care. The more that tasks are interrupted, the more time is wasted by this disruption. Inefficiencies will increase as wards and doctors become busier, and will increase also in relation to the extent to which medical staff have other additional duties that interrupt their delivery of care on their 'home' ward. In the same way that inefficiencies occur when bed occupancy approaches (or exceeds) 100%, so inefficiencies will increase as staff time becomes more pressured. Some degree of slack in the system is necessary to provide capacity for day-to-day minor surges of demand, and to promote efficient and high-quality working patterns. More formal escalation protocols are needed to respond effectively to more major surges in demand above the day-to-day capacity.

We recognise that it is both undesirable, and indeed unsafe, for inpatients to remain in medical wards when their journey through inpatient care is complete.