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Executive Summary

1. “The HSEA commissioned Healthcare Consultancy Limited to carry out a detailed two stage review of the nurse staffing levels required in 36 dedicated Emergency Departments operating 24 hours per day 365 days per year.
2. The brief included:
 - review 36 dedicated Emergency Departments operating 24 hours per day 365 days per year taking into account:
 - the recent appointment of a number of CNM team leaders from amongst the ranks of the staff nurse
 - the staff roles covered need to include:
 - clinical staff nurses
 - team leaders
 - support staff
 - un-qualified care staff
 - consider the professional role of the nurse as set out in the Report of the Commission on Nursing: “A blueprint for the Future”
 - consider the respective nurse management, clinical and support roles in Emergency Departments in Band 1 through 3 hospitals by time of day as well as taking into account the physical settings in which activity is carried out.
 - carry out a proper and detailed review of Emergency Departments linking baseline staffing to acuity based staffing is ultimately required to resolve the staffing issues arising in these departments in the Republic.
3. The findings from Stage I of this work providing data upon which to create a baseline for robust study and the creation of manpower planning tools were reported in December 2002.
4. This is the report of Stage II which comprised a proper and detailed review of a limited number of Emergency Departments in which robust models with which to assess staffing need based upon the acuity of patient activity were developed and tested.

Activity Recording

5. At each 15th minute interval for a period of seven (7) consecutive days, each qualified nurse and unqualified healthcare assistant recorded their total activity whilst on duty using a series of defined activity codes. This data was subsequently analysed on a site by site basis and the results fed back to staff in each site.

6. The results of analysis were presented in both graphical and numerical outputs for ease of interpretation and for maximum benefit in effecting further change within individual departments. The results of this recording are set out below:

Activity element →	Direct Care %	Indirect Care %	Associated and non-nursing %	Personal time %
Ennis General	61.3	16.4	15.2	7.2
Wexford Hospital	45.2	16.7	23.5	14.7
Adelaide and Meath	47.7	23.5	16.1	12.7
St James's	51.6	30.4	7.7	10.3
Our Lady of Lourdes Drogheda	46.6	18.7	22.9	11.8
Median	47.7	21.1	17.1	11.3

7. We recommend that in all Emergency Departments, managers and staff should take action to introduce a non-qualified grade of staff where these do not already exist. The role of these staff would be to undertake some of the non-nursing, clerical and associated work tasks identified in the analysis of activity as being currently undertaken by qualified nurses.
8. We consider that senior staff working in Emergency Departments within the Republic might benefit from visiting other sites in the Republic to identify alternative management strategies and practices which could, if appropriate, be applied locally. For example, in some Emergency Departments, patients awaiting admission to hospital account for a substantial element of Emergency Department workload. In other sites, the same problem appears to have been resolved. Sharing of ideas between sites may assist local managers to identify “best practice” which could then be applied in their own department.
9. The activity analysis found that two components of staffing dependency appear to be present in Emergency Departments:
- a. what we will call “effective in-patient” care – care of patients on a bed or trolley in either a real or virtual ward setting
 - b. acuity based workload, measured by the patient’s triage code.
10. The study measured workload arising from both elements of care and the final staffing model reflects both elements of staffing to calculate the final establishment.

Use of expanded roles

11. In our report of Stage I, we commented upon the scope of nursing practice in the Republic and indicated that core role of nurses in Emergency Departments in the Republic differed from that in other jurisdiction.

12. This difference arises because certain activities are considered as “expanded roles” in the Republic whilst these same activities are considered part of the core role in, for example, the United Kingdom. Examples include plastering, suture and wound closure, venipuncture, defibrillation, ordering and interpretation of X-Rays and limited prescribing protocols.
13. We consider that the content of the core role and the expanded role of the Emergency Department nurse is a key issue which requires urgent consideration in light of experience in other jurisdictions.
14. We consider that these discussions will need to take account of the recommendations of Hanly Report of The National Taskforce on Medical Staffing.

Assessment of the quality of Triage

15. The Manchester system of triage coding was used by all five pilot sites during this stage, although some site had not previously routinely carried out triage on a 24 hour a day basis.
16. To validate the quality of triage, we employed a group of experienced emergency nurses including an Advanced Nurse Practitioner to review triage data from each pilot site. A total of 420 patients were re-assessed and both sets of triage codes compared.
17. On the whole, triage recording was of a high quality. However, there was a tendency to underestimate some codes. This would, if used with the manpower tool developed, result in an underestimate of about 1.8% in staffing requirements.
18. We consider that on-going training and audit concerning the accuracy of the allocation of codes is vital if the workload model is to provide an accurate picture of staffing numbers required to care for patients in the department.
19. We recommend that periodic audits, using the tool we prepared, be carried out on each site to ensure that staff neither under or overestimate triage scores in respect of patients on their site.

The measurement of workload and staff need

20. To measure staffing requirements and create a robust manpower tool, we carried out direct care timing studies on each of the five sites. Our consultants tracked and recorded the timing of direct care for every third patient admitted to the emergency departments in five pilot sites for a period of at least one week. The study covered patient samples across the 24-hour period.
21. These studies covered 624 patients and found that, for each patient in triage category 5 (the lowest category) 13.1 minutes of direct nursing care was the median value required.

22. The number of patients timed in each triage category was sufficient to be considered a statistically significant sample of patients in each triage category 1 to 5.

Triage Code	Triage Colour	Number of cases timed	Percent of cases timed	Median minutes of direct care per case	Ratio to code 5 time
Code 1	Red	51	8 %	187	14.3
Code 2	Orange	163	26 %	94	7.1
Code 3	Yellow	115	18 %	22	1.7
Code 4	Green	127	20 %	14	1.1
Code 5	Blue	168	27%	13.1	1.0
Total		624	100 %		

The staffing tool

23. The staffing measurement tool builds upon the work of the activity analysis and the work on direct care timing. From the activity studies, we found that the median value of direct care on the five pilot sites was 47.7%. Therefore, a patient in triage category 5 who required 13.1 minutes of direct care would require total staff time of $13.1/47.7\% = 27.46$ minutes of staff time.
24. As set out earlier, a second element of workload in Emergency Departments arises from what we have called “effective in-patients”. These are patients in the department awaiting admission and receiving ongoing nursing care. The average wait in the Emergency Department for admission was found to vary from 2.3 hours on one site to 17.4 hours on another.

Validation of the workload model

25. We validated both elements of the workload model and staffing tool for a four week period covering 14,000 attendances of patients at Emergency Departments. Only one site provided all of the validation data in electronic form from their departmental system. We consider that each site should work toward electronic transfer of data to simple modelling systems such as Excel.
26. On 19th September, we met with staff from the five Pilot Sites in a validation workshop and presented our findings. This resulted in one final change to the model to reflect differences in workload from patients awaiting admission in triage groups one and two and that arising from patients awaiting admission in triage groups 3, 4 and 5.
27. The tool used for measuring workload on patients awaiting admission is based upon Criteria for Care, a published manpower model. The tool has been used on about 1 million in-patient cases in all type of ward and Intensive therapy settings in the UK and Europe.

28. Effective in-patients in triage category 1 and 2 have care needs which are similar to those found in a CCU, ITU or neurological intensive care unit. These account for about 4.1% of all 14,000 patients in the validation study. For these patients, a workload ratio of 6 will be used, based upon our experience of this system in other intensive care settings
29. Effective in-patients in triage category 3, 4 and 5 have care needs similar to those found amongst dependency III patients in an acute ward setting. We have used a workload ratio of 2.5 for these patients based upon our experience of this system in other acute in-patient settings.
30. We recommend that sites be encouraged to reduce the amount of time spent by patients in the Emergency Department. The staffing model provides for patients in the Emergency Department with triage codes 1 and 2 to wait on a trolley for an average of 3.24 hours. The model allows for patients in triage codes 3, 4 and 5 to wait and average of 4.77 hours. We consider that, over time, the allowance for waiting in Emergency Departments for admission should be targeted to reduce.

Staff calculation method

31. The final method for calculation of staffing in Emergency Departments is set out in the full report and the attached Excel model.
32. We recommend that, before staffing establishments are changed, a full year's data be collected on each site. This is to ensure that account is properly taken of the peaks and troughs of activity throughout the year. We recommend that each site should maintain a "rolling year" record of patient activity upon which to measure changes in workload.
33. To calculate staff numbers, the following data must be continuously collected and audited to establish the number of clients seen in the department:
 - in each triage code
 - admitted whose triage code is 1 or 2
 - admitted whose triage code is 3, 4 or 5.
34. In our final calculations on each of the five pilot sites, we have adjusted their staffing numbers to reflect our findings on the accuracy of triage codes.
35. We have used the model to calculate staffing for the five pilot sites, based upon last years number of attendances and the distribution of triage codes and admission found in this years validation study. For other sites, we have used the last year's data as published in our report at the end of stage I.
36. This represents an increase of 40.99 in the estimated staffing need across the Republic. However, data from the one month of the validation study indicates that overall activity may have decreased this year

Hospital site	Emergency Department Man Hours per week	Ward based staffing – ITU dependency	Ward based staffing Acute dependency	Total man hours per week	WTE staffing required	Current staffing WTE
St. James's	1,070	85	263	1,417	42.99	42.51
Adelaide and Meath	840	109	511	1,460	44.27	53.43
Wexford General	523	NA	NA	523	15.87	14.00
Our Lady of Lourdes	681	66	111	857	26.00	26.50
Ennis General	360	21	27	408	12.38	11.10
Total	3,474	281	912	4,665	141.51	147.54
Estimate of all other hospitals based on last years data	18,847	1,397	3,571	23,816	722.50	676.54

Conclusions

37. We consider that the Emergency Department workload tool developed in conjunction with the five pilot sites is an accurate and robust method with which to assess staffing numbers required in Emergency Departments in the Republic.
38. We consider that the tool should be “rolled out” to all sites in the country.
39. We consider that managers and staff in Emergency Departments should consider the expanded and core roles of the nurse and their scope of practice in light of the recommendations contained in the Hanly report and the role of Emergency Department nurses in other jurisdictions.”