A survey of physiotherapy on-call and emergency duty services in New Zealand

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ABSTRACT

Physiotherapists working in hospitals are commonly required to undertake emergency on-call duties. Concerns from within the profession about the quality of on-call services have been expressed. The aims of this study were to audit on-call practice in New Zealand, identify variations in service provision and ascertain physiotherapists' concerns in providing these services. A postal questionnaire was distributed to senior physiotherapists in all New Zealand hospitals expected to provide physiotherapy emergency on-call duties (n = 38). A response rate of 97.4% (n=37) was obtained of which 33 respondents provided on-call physiotherapy. Assessment of competency to undertake on-call duties, agreed standards of practice, the use of protocols, training and support provided were ascertained. Respondents were asked to highlight their most important concerns in the provision of their on-call service. These were found to be maintenance of competency, service provision, training and resource issues. This study demonstrates wide variations in the practice and provision of on-call duties by physiotherapists and highlights common concerns in the provision of these services. Strategies to diminish these concerns require further consideration at both national and local levels.
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INTRODUCTION

Physiotherapists working in the hospital environment are commonly required to undertake emergency on-call duties. These duties usually include the assessment of patients with acutely compromised respiratory function, where problem recognition needs to be accurate and interventions timely and effective to prevent further deterioration. Physiotherapists are often dealing with these problems in isolation in challenging circumstances where decision-making needs to be rapid. The problem of on-call and emergency duties is becoming increasing acknowledged by physiotherapy professional bodies and amongst the most frequent requests for advice received by these bodies is that of on-call working (http//:www.acprc.com).

Competence concerns

Concerns from within the profession about the ability of some physiotherapists to undertake on-call duties, maintain competency, provide adequate training programmes and ensure the quality of the on-call service have been expressed (Byrne, 2002). In some countries changes in curriculum content, reducing clinical hours and increases in student numbers have lead to increasing difficulty in ensuring all students have completed respiratory placements prior to qualification. Some students may qualify without intensive care/ high dependency or acute cardiorespiratory experience (Burr, 2002).

Whilst there has been no documentation to date of concerns New Zealand physiotherapists may have in the implementation and fulfilment of on-call duties, anecdotal evidence of similar concerns have been expressed. Formal assessment of competence to practice in respiratory care in New Zealand is currently undertaken at undergraduate level only. However, this assessment is not specific to the undertaking of on-call duties which have been highlighted as a key stress factor in newly qualified physiotherapists and may result in altered job performance (Mottram & Flin 1988). There is a necessity to ascertain whether New Zealand physiotherapists have the same concerns as other countries and whether national strategies are necessary to rectify these. Given current proposed legislation to demonstrate maintenance of competence in health practitioners (Health Practitioners Competency Assurance Bill) it would be appropriate to ascertain any concerns physiotherapists may have in this area in an attempt to highlight the problems and address strategies to rectify these. The United Kingdoms' Chartered Society of Physiotherapy (CSP) has faced similar issues in addressing the recently established Health Professions Councils' strategic intent "to link continued registration to the demonstration of continued competence". Their response to this has been a project to define national competencies in cardiorespiratory physiotherapy with a view to providing guidelines for assessment (Thomas, Cross, Harden & Ten Hove 2003).

Guidelines and audit

The recognition of on-call and emergency duties as a problem area has also lead to the development of emergency duty guidelines by the United Kingdom physiotherapy professional body (CSP 2002). These guidelines, developed in conjunction with respiratory and management special interest groups (SIG's), seek to ensure good standards of practice and support physiotherapists and managers in developing and maintaining a competent workforce. Other professional guidelines/standards in the emergency on-call duty area have been limited but previously included the 'Standards for Respiratory Care' (1996) published by the Association of Chartered Physiotherapists in Respiratory Care (ACPRC). An audit of the emergency duty standard within the ACPRC standards has been undertaken (Brown et al 1997, Dixon & Reeve 2003) and demonstrated that despite variability between hospitals; support, education and training provided to physiotherapists were in widespread agreement with recommended standards of practice, indicating an awareness of and willingness to adhere to these standards. However, a United Kingdom CSP conference survey showed that 64% of 100 senior respiratory staff felt they did not have adequate resources to undertake the training of other staff about on-call duties and the development of a national teaching resource was necessary (Byrne 2002). This work is currently being undertaken in the UK.

In New Zealand no national guidelines or national teaching resources exist to assist clinicians in ensuring continuing standards or competence in the delivery of emergency respiratory physiotherapy. Nor has it been ascertained whether physiotherapists would find these to be useful aids to service delivery and clinical practice. On-call audits (Brown, Hinton & McMullin 1997, Dixon & Reeve 2003) have sought only information on adherence to standards and not attempted to identify physiotherapists' concerns in the delivery of these services nor the efficacy of physiotherapy interventions.

Efficacy of on-call physiotherapy

Ntoumenopoulos and Greenwood (1996) investigated the effect of additional evening physiotherapy on the incidence of postoperative pulmonary complications (PPC) and intrapulmonary shunt (Qs/Qt) following abdominal surgery. Thirty-one elderly patients received daylight only or daylight plus evening physiotherapy for up to 48 hours. Physiotherapy included combinations of positioning, gravity assisted drainage, breathing exercises, manual techniques, coughing and airway suctioning. The findings suggested whilst the effects of the individual physiotherapy techniques utilised were unclear, additional evening physiotherapy may reduce post-operative deterioration in gas exchange after major abdominal surgery. The study made no attempt to address longer-term outcomes such as effect on length of ICU or hospital stay but is the first study to address the effectiveness of on-call interventions.

Ball (1999) audited the provision of weekend physiotherapy to surgical patients in one UK hospital and used this as a means of affecting change in their referral system. An initial audit identified that high-risk surgical patients and patients likely to deteriorate over the weekend could be accurately predicted by physiotherapists. Changes in practice were instituted and re-audited with a 13% reduction in post operative pulmonary complications and a reduction from 63% to 16% in the number of patients whose respiratory status deteriorated over the weekend. The use of a weekend referral system by hospital specific criteria improved the quality of the service and reduced costs. The use of the criteria proved an effective method of standardising referrals whilst reducing the incidence of PPC's. The author acknowledged that predominantly non-respiratory specialists had provided the service and acknowledged their efficiency in its implementation indicating that non-respiratory specialists may still provide on-call interventions capable of significantly reducing pulmonary complications.

Physiotherapy on-call provision

Whilst on-call physiotherapy practice and provision has not been studied within New Zealand it has been investigated in other countries. Ntoumenopoulos and Greenwood (1991) considered provision and organisation of cardiothoracic physiotherapy services across Australia. Using an incidental sample of hospitals with an Intensive Care Unit (ICU), the authors investigated the variance of 24-hour respiratory physiotherapy provision. Findings indicated a wide variability in service with 43% (n = 18) providing normal working hours cover only, 12% during the day and evening and 45% providing 24 hour cover. There was no consideration of specific practice nor did the authors investigate any explanatory reasons for the service provision offered.

Jones, Hutchinson and Oh (1992) investigated chest physiotherapy practice in ICU's in hospitals throughout Australia, the UK and Hong Kong. This included investigation of the provision of 24-hour on- call physiotherapy services which were found to vary between countries with 97% (UK), 49% (Australia) and 0% (Hong Kong) responders providing these services. A regular "after hours" service was also provided in 16% (UK), 41% (Australian) and 6% (Hong Kong) hospitals. This study utilised small sample numbers in each country and the structure of the questionnaire differed between countries thus affecting comparability of data. Again this study made no attempt to investigate detailed on-call provision and on-call investigation formed only part of the overall questionnaire purpose. Nor were on-call practice or procedures considered.

AIMS OF THE SURVEY

Given that there have been no surveys of on-call services provided by physiotherapists and no documentation of the main concerns of physiotherapists in providing this service in New Zealand (NZ), the aims of this survey were to:

i. Describe on-call practice and provision in NZ
ii. Identify national trends and variations in service provision throughout NZ
iii. Identify physiotherapist's concerns or problems in on-call and emergency duty provision

STUDY DESIGN AND IMPLEMENTATION

Hospitals throughout NZ expected to provide on-call and weekend respiratory duties were identified from:

- consultation with senior clinicians in the respiratory care speciality
- consultation with student clinical placement organisers
- the Health sector New Zealand directory 2001 – 2002
- phoning hospitals directly

As no nationally developed or validated tool currently exists to survey emergency duty practice a questionnaire was designed by the author. This elicited information regarding service provision for on-call and weekend duties, guidelines / protocols in place, staff induction and training (initial and ongoing) and support mechanisms for staff undertaking duties. The sections of the questionnaire and topics covered can be seen in Table 1. For ease of completion and analysis a majority of closed questions were used but in addition, respondents were asked to identify their 3 most important concerns or problems with the on-call/ weekend service provision.

A pilot study was conducted at two sites using three junior physiotherapists (a grade below the targeted respondents) at each. These physiotherapists were all involved in emergency duties and at least 18 months post qualification. Comments on questionnaire design, structure and content were sought. Ambiguities were highlighted and changes to layout and grammar made.

Following this the questionnaire was posted to the senior respiratory physiotherapist of each of the hospitals identified. A covering letter was included explaining the purpose of the questionnaire, identifying the researcher and assuring confidentiality. A stamped addressed

Table 1. Structure and content of the questionnaire.

Section and subject	Question number	Topics covered
1. General data	1 – 16	Type of hospital. No. of FTE's. Provision of emergency service - type, hours, location.No. of respiratory PT's. No. of PT's on-call. Type of on-call service. Referral system. Criteria. Timing of commencement of on-call duties. Existence of protocol and content.
2. Staff training and induction	17 - 23	Existence of training programme. Type of training programme (formal/informal). Grade of staff undertaking training programme. Length, frequency & type of induction/training. Staff responsibility for training.
3. Level of staff training	24 – 26	Agreed standard of training prior to on-call? Assessment of standard. Responsibility for assessment.
4. Ongoing training	27 – 28	Existence of ongoing training programme. Optional or compulsory?
5. Staff support	29 – 31	Type of support available. Provision of support.
6. Further questions	32 – 35	Other on-call/weekend service provision. No. of callouts over last month. Concerns or problems with on-call service provision.

Key: FTE's – Full time equivalents, PT's – Physiotherapists, No. – number,

envelope and a period of 4 weeks for completion were given in an attempt to ensure good response rates. Questionnaires were coded to assist with follow up of late replies. Responses were only available to the author and all data received was kept in a locked cabinet. Ethical permission for the study was obtained from the Auckland University of Technology Ethical Committee (AUTEC) on 27th August 2001.

DATA ANALYSIS

All closed data was of the nominal / ordinal form and was analysed using SPSS 10.0 for Windows using a variety of descriptive statistical methods. Open data was analysed by content analysis and development of themes.

RESULTS

Response rate

Thirty eight hospitals were identified and 37 questionnaires were returned. Two hospitals provided no on-call or weekend cover and two hospitals provided no formal funded cover but were available to attend the hospital under exceptional circumstances. This gave 33 responses for analysis.

General data

Twenty-eight (84.8%) respondents were public hospitals and the remaining five (15.2%) respondents were private hospitals. Full Time Equivalent (FTE) staffing levels for physiotherapy respiratory services can be found in Table 2. Three (9.1%) hospitals had .5 FTE and two (6.1%) employed one FTE physiotherapy assistant working in respiratory care.

Thirty-two (97%) hospitals offered both weekend and 24-hour on-call services. One hospital offered weekend services only. Two private hospitals offered a seven-day service with on-call cover after 'normal' (i.e. 8am – 5pm) working hours.

The number and grade of physiotherapy staff per hospital undertaking on-call & weekend duty provision can be seen at Table 3 giving an indication of staffing provision. Figure 1 depicts the profile of staff in each hospital undertake on-call and weekend duties. Eight hospitals used *all* FTE physiotherapists to undertake on-call or weekend duties regardless of grade or speciality. Some hospitals (n=11) used only those staff who had recently or were currently working in respiratory care. In "Other" responses only some staff undertook on-call duties with others claiming exemptions, commonly senior physiotherapists working in areas other than respiratory care. Senior staff only were used by three hospitals, two of these selecting to use only those senior staff specialising in respiratory care.

Nineteen (57.6%) respondents employed additional physiotherapists *solely* to undertake on-call or weekend duties. The level of utilisation of these additional staff varied, some hospitals employing permanent weekend staff, others utilising occasional additional support and one hospital employing a permanent staff member from Wednesday to Sunday.

The majority of hospitals (n = 29) offered 24-hour cover. One hospital offered a twilight service (5pm – 8pm) in addition to 24-hour cover, one offered a twilight service only and two had no *guaranteed* cover because of no funding for on-call services.

Table 2. FTE's involved in respiratory care duties.

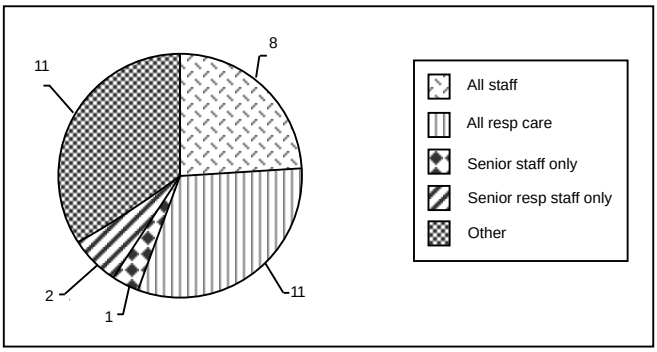
	No of FTE's working in Respiratory Care						
Grade of Physiotherapist	**0** (per hospital)	**.5 – 1** (per hospital)	**>1 – 2** (per hospital)	**>2 – 5** (per hospital)	**>5 – 8** (per hospital)	**>8** (per hospital)	**Missing data** (per hospital)
Assistant	25	5	0	0	0	0	3
Junior	8	7	6	6	2	1	3
Senior	4	10	7	6	3	0	3
Head	22	6	2	0	0	0	3

Table 3. Number of physiotherapy staff currently undertaking on-call duties.

	Number on-call						
Grade of Physiotherapist	**0** (per hospital)	**1-2** (per hospital)	**3-5** (per hospital)	**6-8** (per hospital)	**9-15** (per hospital)	**>15** (per hospital)	**Missing data** (per hospital)
Junior	6	8	9	5	3	1	2
Senior	3	6	13	5	3	1	3
Head	20	10	0	0	0	0	3

On-call services were offered mainly to hospital inpatients (n = 32, 97%) with four (12.1%) offering services in the community, one through GP services and nine (27.3%) in accident and emergency. Main methods of referral were via consultant and senior doctors (n = 20, 60.6%), physiotherapists (n = 21, 63.6%) or via nursing staff (n = 11, 33.3%) – most commonly intensive care nurses.

Figure 1. Type of staff involved in on-call/weekend duties.



Weekend workload varied dramatically both between and within hospitals. Four (12.1%) hospitals worked a set number of weekend hours, however, the majority worked until all work was completed. Table 4 shows the number of physiotherapists per hospital providing weekend cover, the majority of these having physiotherapists working in isolation at the weekend. Staff covering daytime weekend services also provided the evening weekend on-call service in the majority of cases (n = 29).

Table 4. Number of physiotherapists providing weekend cover.

No. of physiotherapy staff providing weekend cover (per hospital)	Frequency (n =)
1	25
1.5	1
2	3
2.5	1
3	2

Twenty nine (87.9%) hospitals had a *written* protocol for on-call/emergency duties. Figure 2 highlights areas covered in these protocols. Other areas covered in the protocols included general operational details such as timesheet management, transport allowances and work/rest conditions.

The majority of hospitals had written criteria for patient referral for on-call (n=24) and weekend physiotherapy (n=29). Six hospitals reported having no written criteria for emergency duty call outs. The criteria were found to be diverse and non-specific in the majority of cases based broadly on a patient 'deteriorating without intervention'. Some criteria were merely based on referral from a doctor (n=8).

The average number of callouts during the last month for each respondent is highlighted in Figure 3.

Commencement and support of on-call duties

One hospital expected staff to commence on-call duties upon commencement of employment. Others commenced duties following formal (n=15, 45.5%) or informal induction (n = 14, 42.4%) or following a respiratory rotation (n = 2, 6.1%).

First on-call/emergency duties were undertaken using a 'buddy' system in two hospitals. Support for staff whilst on-call was available in 30 hospitals (90.9%). Only one offered no support. Type of support varied from telephone support only (n = 3, 9.1%) to availability of staff to attend hospital if necessary (n= 25, 75.8%). Support was provided by senior respiratory staff (n = 12), any senior staff (n = 11) or any staff available (n = 7). This support remained available at the weekend in all except three cases.

Induction and ongoing training programmes

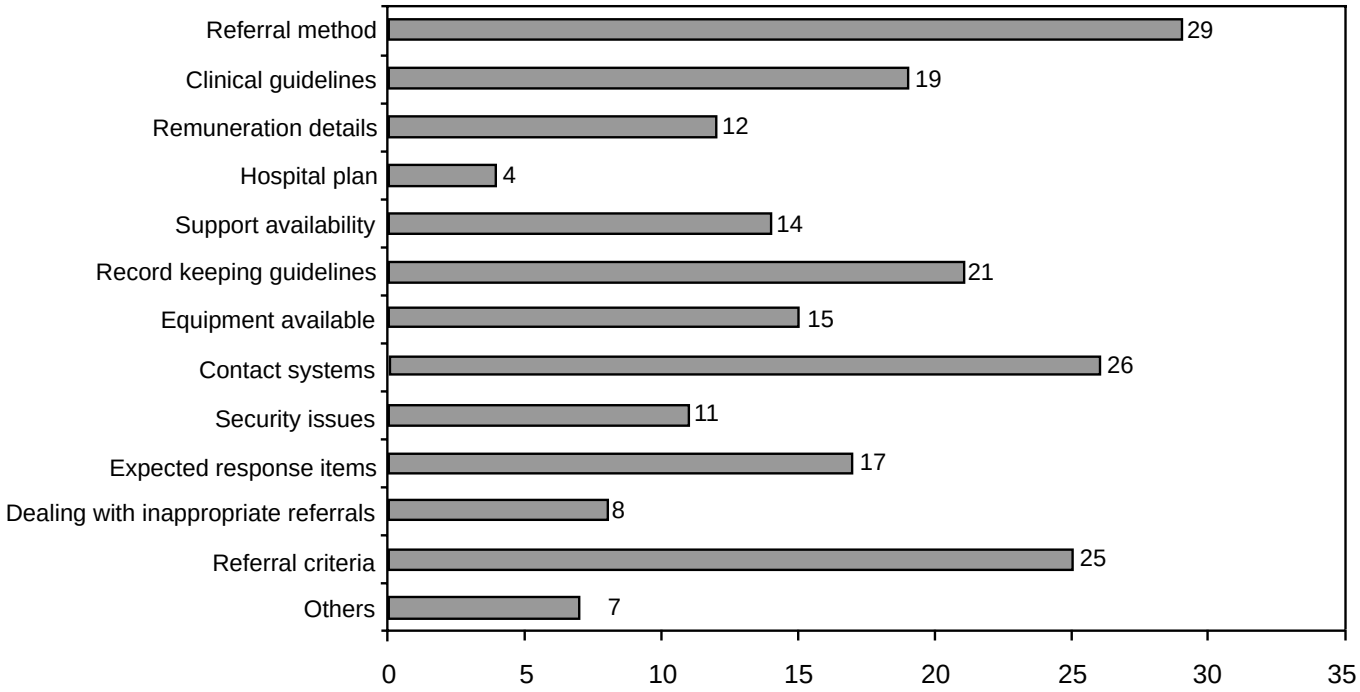
Only one hospital offered no initial or ongoing training for staff undertaking on-call duties. Twenty- six hospitals offered some form of initial training to support on-call staff and in the majority of cases (n = 15) this was said to be adapted to the individual physiotherapists needs. Structured teaching sessions were used in eleven (33.3%) hospitals with two (6.1%) hospitals offering only an informal explanation of weekend procedures with no training component. Other forms of training for on-call duties included 'skills labs', supervised treatment sessions on the intensive care unit (ICU) and in one case senior respiratory physiotherapists supervised the first weekend duty.

The length and structure of these training programme varied from 'a couple of hours orientation' to 'up to 16 weeks'. Some hospitals required a minimum number of hours experience on ICU, some offered full days training for up to two weeks, and some offered staggered training as convenient over a two to three month period.

The majority of hospitals (n = 20) adapted training to the needs of the individual commenting that this was highly variable from locums with extensive experience to new graduates with minimal respiratory experience. Three hospitals offered a 'set' training programme, three used self directed learning and three utilised a combination of differing methods. Respondents expressed less flexibility of training programmes for newly qualified staff.

Twenty-five (75.8%) hospitals provided ongoing training for staff undertaking on-call duties. In most cases this was compulsory (n = 12) with others making this optional (n = 4) or by request (n = 5). One hospital offered an annual respiratory update and another a respiratory refresher every six months. One hospital ran a respiratory journal club.

Figure 2. Emergency duty protocol content.



Assessment of readiness for on-call duties

An agreed standard of practice for physiotherapists before participation in emergency duties was present in 29 (87.9%) hospitals. Three hospitals had no agreed standards in place.

The majority of hospitals assessed this standard informally (n = 19) with only six hospitals assessing this formally and three using both formal and informal means. Main methods of assessment of these standards can be seen at Figure 4. Other means of assessment included written reflection, self-assessment, quizzes, sign off checklists and skills labs. One hospital used a comprehensive credentialing system which was task based and tiered staff into different levels to equip them for different weekend duties.

Figure 3. Average number of call outs over a one month period.

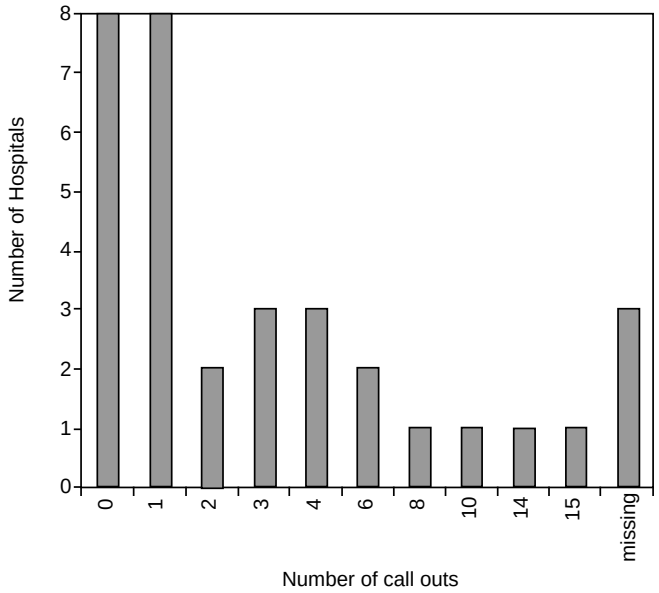
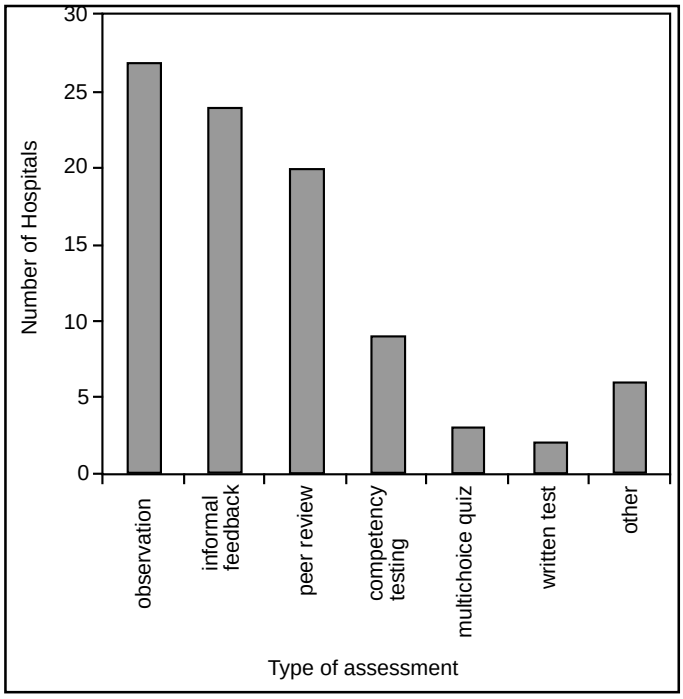


Figure 4. Methods of assessment of standard for on call duties.



Senior physiotherapists or section heads were mostly responsible for assessment of achievement of these standards. Six hospitals had no senior respiratory staff and this was therefore conducted by other non - respiratory seniors, team leaders or junior physiotherapists.

On-call and weekend service problems

Respondents were asked to identify the three most important concerns or problems regarding on-

call/ weekend service provision. Thematic analysis was undertaken and results can be found in Table 5. Concerns expressed broadly encompassed staffing problems, resource issues, maintenance of competency, training and service provision issues. Seven respondents indicated no problems with their on-call and weekend duty service.

DISCUSSION

The response rate to this survey was excellent and can be considered representative of the population targeted. The high response rate may reflect the concerns and importance of this topic to the subject group and numerous replies indicated to this effect. The survey highlighted trends and concerns in on-call/emergency duties and demonstrated widely varying practices and service provision. These commonly reflected differing demands and issues at local levels. It also highlighted the provision of support and training in place in the majority of hospitals. Most hospitals had some form of assessment of readiness for duties although this was largely informal. This conflicts with a recent interim report from the UK which stated around one third of participants do not assess the ability of junior physiotherapists and new starters to work in the on-call setting (Thomas et al 2003).

Whilst this survey has examined local implementation of on-call/emergency duty practices it has made no attempt to ascertain the

Table 5. Thematic analysis of respondents concerns regarding on-call/weekend duties.

THEMES	PROBLEM (no. of responses in this category)	EXAMPLES (of responses)
Staffing	Lack of numbers to undertake on-call duties (n = 7)	*Limited no of staff available for rota* *Small number of staff to provide cover* *High staff turnover*
	Attitude to on-call (n = 4)	*Difficulty encouraging staff to work weekends and public holidays* *Persuading staff to continue with weekend duties* *Weak staff have no incentive or desire to up skill once removed from the rota*
	Level of experience (n = 7)	*Staff skill mix – only 2 senior staff* *Inexperienced staff over treating patients* *Selecting skill level of staff providing the service – all staff or selected staff only?* *Staff are working outside their clinically designated areas*
Resources	Financial remuneration (n = 3)	*Poor remuneration.* *Not paid but expected to be available*
	Support (n = 2)	*Inadequate support for inexperienced staff* *No support available*
	Workload (n = 9)	*Time off in lieu/sickness from overload – constant cover from others during the week* *Tiredness of staff/workload* *Senior cardiorespiratory therapist has responsibility for training in addition to all other duties - large load and pressure*
Competency	Maintenance of competence (n = 11)	*Staff feeling inadequately skilled* *Ensuring competence with infrequent respiratory work* *Staff often too busy or lacking interest to maintain updating of respiratory skills* *Maintenance of skill level subsequent to initial competency testing* *Should assessment of competence be formal, informal or both?* *Competence vs complexity of patient*
Training	Provision of training programmes (n = 9)	*Inadequate training prior to on-call* *Lack of structured induction programme* *No prior or ongoing training* *Continual training because of high staff turnover* *Unrealistic length of time to train staff & demonstrate competence* *Lack of ' sick' cases for training and at undergraduate level*
Service provision	Local problems (n =18)	*Inappropriate referrals* *Lack of knowledge re referral criteria from nursing and medical staff* *Requests for mobility problems* *Ensuring call out initiated at consultant level*
	National problems (n = 3)	*Lack of nationally recognised guidelines* *Developments/strategies to prevent admission* *No universal assessment of competence*

quality of specific treatment programmes that may be implemented with critically ill patients during call out duties. Clearly, consideration of the safety and effectiveness of interventions is vital to the maintenance of a high standard of service provision. A*ctual* practice may vary between provider units and the variance of this should form the basis of future work.

Developing and maintaining competence for on-call duties

The HPCA bill will shortly become an important piece of NZ legislation attempting to ensure physiotherapists will only practice to the extent that they have established and maintained their ability to work safely and competently. It should assist in determining scope of practice for each health practitioner and establish systems to ensure no-one practices outside his/her scope of practice. Under the proposed bill the responsibility for maintaining a competency level for on-call duties is likely to lie primarily with the individual physiotherapist. As such, this should encourage physiotherapists to ask for further assistance and support where necessary. This study shows that in many centres competency assessment is currently being performed on an informal basis only, and further onus could be put on provider units to monitor competency to practise more formally to ensure service needs are met.

Staffing of respiratory on-call services varied throughout provider units but few hospitals used respiratory staff only and some hospitals encountered difficulties providing a service because of high staff turnover or only small staffing numbers. This inevitably poses education and training issues. Whilst the majority of hospitals provided a training programme in some form, training throughout respondents was found to be highly variable in structure, amount and length of delivery. The level of formal training offered was disappointing. Whilst this study did not seek information with the satisfaction of the training programmes offered (from either the deliverers' or recipients' perspective) it has shown that respondents believe assessment and maintenance of competence to be a problem area in on-call duties. This is particularly the case where there are newly qualified staff, or where staff are not working in the respiratory or on-call situation on a regular basis. Further training of these staff was acknowledged to be necessary by the majority of hospitals surveyed.

Consideration should be given to whether the skills required in the on-call environment are beyond the scope of competencies achieved at undergraduate level for registration purposes. Undergraduate students are rarely exposed to the complexities and difficulties encountered in an emergency respiratory situation and thus the expectation that newly qualified staff should be able to cope with these situations is unrealistic and underestimates the skills necessary in dealing effectively with the critically ill patient. No study to date has isolated the impact of undertaking of on-call duties on the stress levels of physiotherapists, but Mottram and Flin (1988) demonstrated the treatment of the critically ill patient to be a key stress factor for the newly qualified physiotherapist. This survey has clearly demonstrated that junior physiotherapists are frequently involved in on-call duties and that respondents believe further education and training, specific to the needs of their individual hospitals, to be necessary in preparing new staff for these duties.

Currently competence to practice is *formally* assessed only during undergraduate training or where specific needs arise. Assessment and monitoring of competency thereafter is problematical and measures to deal with problems arising are unclear. Within this survey, whilst current methods of determining competency were ascertained (such as by peer assessment) there was no attempt made to determine how or whether differing *levels* of competence were assessed and what measures were taken in the event of inadequate performances. The lack of national guidelines and standardised assessment of competency for on-call purposes was highlighted as being a national problem by some respondents calling for remedies other than at a local level. Whilst the HPCA should make this process much more transparent and give the relevant authority discretionary action to take any necessary remedial action, the level of training and the assessment of competency of the individual for on-call/emergency duties has been found to vary widely between hospitals. Identification of the *quality* of the service provision also warrants closer inspection both in practice and in future research. Other forms of monitoring of competency and quality assessment may include observation of practice, peer review (both of practice and of induction / training programmes) and self-assessment most likely through a portfolio of evidence. Professional bodies, educational establishments, SIG's and provider units should consider collaborating in developing national competency based training and assessment programmes similar to those currently being developed in the UK. The implementation of this type of resource throughout NZ, whilst time consuming to initiate, should prove easier to administer and monitor than in other countries because of the size of the population. Thus, consistency in the applications of national standards of practice may be more easily attained than elsewhere.

On-call referral

Many respondents highlighted local problems in conducting on-call duties. These were largely due to inappropriate referrals and should be relatively easy to eradicate where staff are adequately trained to appropriately question-call outs. Physiotherapists should not expect other disciplines to have an in-depth understanding of the effectiveness of physiotherapeutic interventions in varying circumstances. Inappropriate requests for physiotherapy interventions offer excellent opportunities to educate others on the role of

respiratory physiotherapy and the evidence base upon which interventions are based.

This survey did not ascertain how inappropriate callouts were managed and monitored and this data would have been useful. However, in 63.6% of hospitals (n = 21), a strategy for the management of inappropriate callouts was not included in the protocol. Audits of callouts may be conducted and presented at case review or team meetings. Cost analysis of on-call services should be performed on both a case-by-case and set period basis. Case study presentations to peers involving patients receiving on-call services should be analysed and case reports documented in the literature. This may help with future assessment of on-call service provision.

Emergency Duty Protocols

Written protocols should help provide a safe framework for basic practice, enabling clinicians to make clinical decisions within the scope of their own knowledge and experience. From this study, despite the majority of hospitals having a written emergency duty protocol, these offered guidance on *service provision* rather than guidance on *patient care*. This type of protocol would therefore not assist inexperienced clinicians in making decisions and implementing appropriate treatments for specific conditions. Professional groups should be working to developing clinical guidelines which will help clinicians with decision making in the on-call situation.

Criteria for on-call and weekend physiotherapy in individual hospitals were found to be widely variable and mainly based on an expectation of clinical deterioration without any physiotherapy intervention. Definitions of clinical deterioration were vague and unpredictable in many cases. Ball's work (1999) has demonstrated that the implementation of an indicator-based protocol can be effective in improving the quality of the service provided whilst reducing the cost. National guidelines and protocols for appropriateness of emergency call outs could be developed from current evidence, piloted and ultimately implemented nationally with adaptation at a local level where necessary.

Future work

To date, no studies have considered the opinions and concerns of physiotherapists undertaking emergency on-call duties. There have been no studies investigating the preparation for on-call duties or readiness of staff to undertake these duties. These would be valuable given some of the concerns highlighted in this study. Other future work should include an investigation into the differences between the experienced and novice practitioner in the emergency situation and further analysis of the efficacy of on-call treatments and evening interventions is required to supplement the work of Ntoumenopoulos and Greenwood (1996). The opinions and concerns of referring clinicians, managers and patients should be ascertained.

A variety of research methods including action research, single subject design studies, vignettes and surveys would seem appropriate to enhance understanding of the impact of physiotherapists work in this area. Rigorous collection and interpretation of data collected during and after call outs would help to determine effectiveness of interventions during emergency attendances.

CONCLUSION

This study has investigated on-call and weekend service provision by physiotherapists in New Zealand. It has found that the majority of hospitals continue to provide 24 hour emergency cover; that the provision of these services differ widely between hospitals; and that most respondents experience some concerns in the provision of these services. Concerns primarily revolved around maintaining competence of staff to undertake these duties and the provision of adequate training programmes. The impending HPCA bill looks likely to impact upon staff undertaking emergency duties and current concerns expressed in this study need to addressed by individuals, service providers, SIG's and professional bodies.

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