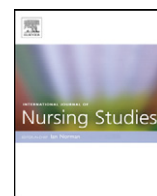




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The experiences of health care workers employed in an Australian intensive care unit during the H1N1 Influenza pandemic of 2009: A phenomenological study

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ARTICLE INFO

Article history:

Received 11 November 2009

Accepted 14 November 2009

Keywords:

H1N1 Influenza pandemic

Intensive care unit

Pandemic planning

Phenomenology

ABSTRACT

Background: The H1N1 Influenza A pandemic arrived in Australia in early May 2009. In Queensland, the highest number of H1N1 cases were admitted to the intensive care unit when compared with the other Australian states. While many recent studies examining the H1N1 pandemic have focussed on service delivery and disease epidemiology, few have explored the lived experiences of frontline health care workers caring for the patients in the intensive care unit.

Objectives: The purposes of this study were to: document and describe the lived experiences of the nursing and medical staff caring for patients in the intensive care unit during the H1N1 pandemic; to validate the staffs' experiences; and to assist in informing future pandemic planning by highlighting the collective experiences of these frontline health care workers.

Design: A phenomenological study method was used.

Setting and participants: 34 staff from a tertiary referral hospital in Brisbane, Australia participated in the study.

Methods: Data was collected using an open ended questionnaire and focus groups. The resulting responses were analysed using Colaizzi's framework to discover regular patterns of meaning that emerged.

Results: Eight common themes emerged: the wearing of personal protective equipment; infection control procedures; the fear of contracting and transmitting the disease; adequate staffing levels within the intensive care unit; new roles for staff; morale levels; education regarding extracorporeal membrane oxygenation; and the challenges of patient care. These eight themes articulate the lived experience of the staff during the height of the H1N1 Influenza pandemic period.

Conclusions: Planning for a pandemic situation is invariably difficult due to the unpredictable nature of the event itself. Recommendations for future pandemic planning which can be drawn from this study include the appointment of a dedicated infection control representative to provide information and support regarding infection control matters; the maintenance of effective communication channels is crucial; and the increased staffing requirements across nursing, medical, allied health and ancillary staff to cope with the higher patient numbers and acuity must be anticipated and planned for.

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What is already known about the topic?

- The H1N1 virus is a novel strain of the Influenza A virus and was first detected in April 2009, quickly spreading around the world.

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- A pandemic was declared in early June and the Australian health care system, particularly intensive care units, have been substantially affected.
- Most studies focus on service delivery and the epidemiology of the disease, neglecting the experiences of frontline health care workers in coping with the demands of a pandemic.

What this paper adds

- The results of this study reveal the issues which are important to intensive care unit staff in dealing with the Australian H1N1 pandemic 2009: the wearing of personal protective equipment; infection control procedures; the fear of contracting and transmitting the disease; adequate staffing levels within the intensive care unit; new roles for staff; morale levels; education regarding extracorporeal membrane oxygenation; and the challenges of patient care.
- The findings and recommendations provide valuable information for health care professionals and policy makers to assist them in planning for future pandemic outbreaks.

1. Introduction

H1N1 Influenza is a novel strain of the Influenza A virus that was first detected in the Americas in April 2009 and has rapidly spread throughout the world. H1N1 came to Australian shores in early May and by early June, the World Health Organisation declared a pandemic. In Queensland, there have been 1202 admissions to hospital, 162 admissions to an intensive care unit (ICU) and 41 deaths from the H1N1 Influenza to the end of September 2009 (Queensland Health, 2009).

The psychosocial impact of a pandemic on health care workers can be significant (Wu et al., 2009). Staff can be left feeling fearful for their own and their family's health (Maunder et al., 2003); stigmatised, alienated and isolated (Mitchell et al., 2002); and in some cases can be left suffering post-traumatic stress disorder (Chan and Huak, 2004). During a crisis in the ICU setting, it has been shown that staff distress is more likely to occur when there are unexpectedly high demands placed on them which are unmatched by appropriate resources (Piquette et al., 2009). The bulk of research related to pandemic outbreaks often focuses on the epidemiology and disease process or organisational issues. Often the lived experiences of the staff dealing with the care of the patient are not reported and it is essential that these experiences are acknowledged and taken into consideration for future pandemic planning.

2. Background

We report the experience of medical and nursing staff employed in an ICU within a tertiary referral hospital specialising in cardiothoracic surgery and medicine in Brisbane, Australia. The ICU has 19 funded beds with physical capacity of 27 beds contained within 3 pods, with the ability to perform extracorporeal membrane oxygenation (ECMO) for 5 patients simultaneously. There are 141 Registered Nurses (RNs) employed in the ICU who are

supported by 1 Nurse Unit Manager, 2 Clinical Nurse Consultants, 1 Nurse Educator and 3 Clinical Nurse Teachers. There are 5 full time Intensive Care Specialists and 2 visiting Intensive Care Specialists, along with senior and junior registrars providing 24 h medical cover for the ICU.

During late July and throughout August, the ICU was overburdened with the high number of patients requiring admission due to suspected or confirmed H1N1 Influenza. Between June 1 and August 31, 626 confirmed H1N1 patients were admitted to ICU across Australia (The ANZIC Influenza Investigators, 2009). In Queensland, the highest total H1N1 admissions to ICU was reported with the most occupied ICU bed days compared with other centres in Australia. The first case of confirmed H1N1 Influenza was admitted to our unit on 8 July 2009 and to the end of September, there have been 20 confirmed cases and 13 suspected cases of H1N1 Influenza admitted to the ICU. The impact of the H1N1 pandemic on the ICU was tremendous. Bed capacity was increased to 23 beds and elective cardiothoracic surgery was cancelled to cope with the large influx of critically ill patients. The acuity of some H1N1 patients dictated that many were cared for by 2 RNs (i.e. those on ECMO) and this put great strain on the nursing and medical workforce such that many hours of overtime were worked to ensure that the patients were cared for safely.

As the suspected and confirmed H1N1 cases increased, a decision was made by the senior medical and nursing staff that one nine bedded pod within the ICU would be isolated and accept all acute respiratory admissions presumed to be due to H1N1 Influenza. This entailed isolating this unit from the other two ICUs by closing all doors between the units. All persons entering the isolation unit were required to wash their hands and apply personal protective equipment (PPE) [gown, gloves and mask] prior to entering. Those staff directly caring for suspected H1N1 cases or contagious H1N1 cases were required to wear further protection in the form of a disposable P2 (N95) particulate filter respirator which is capable of filtering 95% of particles 0.3 μm in size. The patients within this unit were nursed in a reverse barrier manner. Suspected cases were placed in the isolation rooms until their status was confirmed. If their status was positive, they were kept within the unit but moved to a non-isolation bed. If their status was negative, they were moved out into one of the other units.

3. Aims

The aims of this descriptive study are to document and describe the lived experiences of the nursing and medical staff caring for patients in the ICU with confirmed or suspected H1N1 during the influenza pandemic; to validate the staffs' experiences; and to assist in informing future pandemic planning by highlighting the collective experiences of these frontline health care workers.

4. Methods

4.1. Design

A phenomenological qualitative research design was chosen to describe the staffs' experiences in dealing with

the H1N1 Influenza pandemic. A phenomenological approach was selected as this design is concerned with the lived experience of individuals and aims to describe and explore the meaning of the experience (Burns and Grove, 2005).

4.2. Ethical considerations

This study received approval from our institution's Human Research Ethics Committee (approval 09/137) in early September 2009. Participation in this study was entirely voluntary and anonymous. Consent was gained either implicitly by the return of the questionnaire, or by signing a consent form prior to participation in the focus group.

4.3. Participants

The sampling method used was non-probability, purposeful sampling. The questionnaire targeted all nursing and medical staff caring for suspected and confirmed H1N1 patients during the height of the influenza pandemic. The focus group sessions also targeted those staff caring for patients during the height of the pandemic but the investigators sampled senior medical and nursing staff opportunistically depending on these staffs' availability. The sampling of the bedside clinical nursing group for the focus groups was more purposeful so that a spread of senior and junior nursing staff were included in the sample. The sample size for the focus groups was determined by the number of available participants at the time of the focus group session, however the investigators limited the group to no more than 5 participants to facilitate meaningful and focussed discussion.

4.4. Data collection

Data were collected in two ways over a 2-week period in mid-September 2009:

1. An anonymous questionnaire with semi-structured, open ended questions was distributed to all nursing and medical staff working with the suspected and confirmed H1N1 patients. The questionnaire included broad open ended questions covering topics that the researchers believed to be pertinent during the pandemic (see Table 1).

Table 1
Questionnaire distributed to staff.

<ol style="list-style-type: none"> 1.Designation (circle one): medical/nursing. 2.If nursing, are you predominately (circle one): management/education/team leader/float/bedside nurse. 3.ICU experience (years). 4.What do you feel were the challenges faced during the H1N1 pandemic? 5.How do you feel that resources (both material and human) were managed during this period? 6.What issues emerged for you, if any, by caring for these patients? 7.Are there any other comments regarding your experience with H1N1 that you have not yet mentioned?

2. Focus group sessions were conducted to further discuss and describe the experiences as primary caregivers to patients with the H1N1 Influenza virus. Focus groups were held with three groups of staff: the senior nursing staff, the senior medical staff and the clinical bedside nursing staff. Two investigators (AC and NH) were present in the focus groups in addition to a social worker whose role was to provide support to the staff if necessary. The focus groups were audio recorded, typed into an anonymous transcript and the audiotape was then erased.

4.5. Data analysis

The transcript of the focus group discussions and the responses from the semi-structured questionnaires were analysed for common themes using the Colaizzi method (Burns and Grove, 2005; Speziale and Carpenter, 2007) to discover regular patterns of meaning that emerge. Colaizzi's method of data analysis involves collecting participants' descriptions of their experiences; reading all participants' descriptions; extracting significant statements from the transcripts; eliciting the meaning of each significant statement; organising the combined meanings into clusters of themes; integrating the results into a detailed description of phenomenon; and finally returning the descriptions to the participants for validation. The transcriptions were concomitantly analysed by a second investigator using the aforementioned method. The themes identified by each investigator were then discussed, revised and agreed upon by both investigators. Colaizzi's last step in data analysis is to return the findings to the participants to confirm that the findings are a true reflection of their experiences. The investigators did not follow this last step due to the larger sample size and the anonymous nature of the respondents' participation.

5. Results

100 questionnaires were distributed to eligible staff members – 80 to registered nursing staff and 20 to medical staff. The response rate from nursing staff was 28 questionnaires (35%) and from medical staff 4 questionnaires (20%). Four focus group sessions were held over a 2-week period with 4 staff members attending each session. In the fourth session, data saturation began appearing (where no new themes were being discussed) therefore the total sample size of 16 for the focus group sessions was deemed adequate. Fig. 1 details the flow of respondents. Tables 2 and 3 describe the respondents by specialty and by years of ICU experience.

Eight common themes emerged from the thematic analysis of both the questionnaires and focus groups and are described below along with selected samples of the respondents' supporting statements. The collection of the eight themes articulates the lived experience of the staff during the height of the H1N1Influenza pandemic period.

5.1. The wearing of personal protective equipment

This theme details the staffs' experience regarding the wearing of personal protective equipment (PPE) while

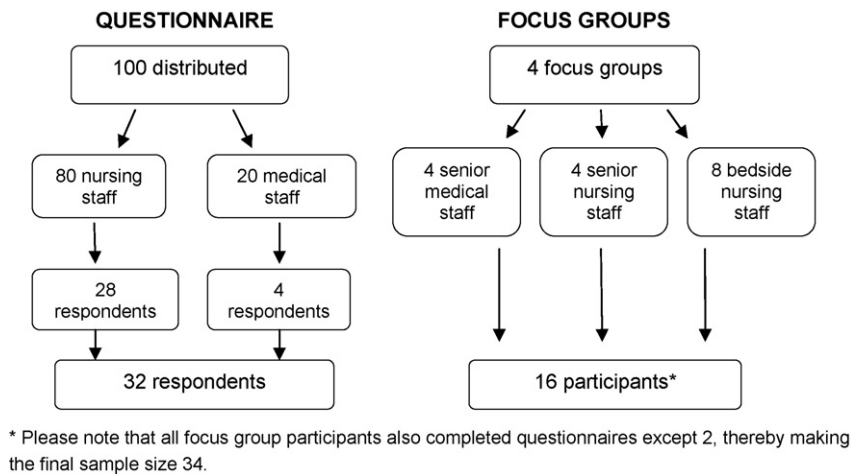


Fig. 1. Flowchart of respondents.

caring for suspected and confirmed H1N1 cases which was deemed necessary by the organisation. However, during the height of the pandemic, there was a perceived lack of firm recommendations and guidelines regarding specifically what PPE was required. This created an element of confusion amongst the staff caring for these patients. Staff described feeling unsure regarding what PPE was required – “PPE requirements for both staff and relatives changed on an almost daily basis. Hard to keep up with what the current requirement was” and “we were told one day...if you're at the bedside and you've got a patient on the ventilator just put a plastic apron on...and then we were told – you can't wear that, you have to have a yellow gown on at the bedside”. Some staff reported that the ambiguity regarding PPE requirements made them feel “unprotected” and “undervalued”.

There was also a perception that the supplies of PPE were running low within the unit and this created an environment which made staff question whether they would remain adequately protected during the pandemic period and that they might have to “compromise”. One bedside nursing staff member stated “as supplies ran out the ‘rules’ changed and surgical masks and plastic aprons were [considered] effective. It made me worried that the only reason it was changed was due to stock shortage and that perhaps we weren't as protected”. It was acknowledged that

Table 2

Combined numbers of respondents by specialty (questionnaire and focus groups). Some respondents included themselves in more than one specialty.

ICU specialist	ICU registrar	Nursing management	Clinical education
5	1	2	3
Team leader	Float	Bedside nurse	Not disclosed
13	10	9	3

Table 3

Years of ICU experience.

Years	≤5	6–10	11–20	≥20
n (%)	7 (20.6)	11 (32.35)	11 (32.35)	5 (14.7)

adequate supply of PPE was a major priority for the nursing management – “our biggest fear was running out of things, like your masks and gowns...I think there was a time when they thought we were going to run out and resort to substandard masks” and the shortage of PPE supplies was communicated to the bedside nursing staff on many occasions by nursing management. It is evident from the data collected in this study that a large discrepancy in perceptions existed regarding the connection between the changing of PPE protocols and perceived stock shortages. Although stocks of PPE did not run out, it was acknowledged that if the pandemic had gone on much longer that supplies of PPE would indeed have been critically low to running out.

Generally, the wearing of PPE was tolerated by most staff as it was deemed a necessary measure in providing protection to them – “using PPE was really good”. Pre-preparation had been completed regarding the correct fitting of the P2 masks in the event of a pandemic and almost 100% of staff had been correctly fitted for their mask size. However, one staff member stated that they had been fitted but the correctly sized mask was not in stock so it was necessary for them to wear an incorrectly sized mask.

However, the physical act of wearing PPE for an extended period was identified as a difficulty for staff. Most staff were required to wear PPE for up to 12 h a day with only a 1–1.5 h break from PPE during this period. Many staff commented on how uncomfortable PPE was, especially for extended periods – “It was hard working in a gown and mask (very hot) and not being able to go out for a drink whenever as the unit was very busy. I found I was dehydrated with a headache at the end of all my shifts” and “very uncomfortable and very injurious...I had skin peeled off here [points to nares]”. Additionally, the application and removal of PPE was considered to be extremely time consuming for staff, particularly when requiring supplies or performing duties outside the isolated unit – “very difficult working in closed unit – especially for floats [support staff]...to collect equipment or run ABGs [blood tests], continually changing PPE”. It was also reported that communication was difficult whilst wearing PPE – “I

didn't realise how much I lip read until you put on a mask and think I can't hear as well as I used to but it's not the hearing it's obviously the lip reading".

Another issue of concern to many of the respondents was the amount of waste generated by the disposal of PPE and the extra workload and stress that this put on the wardspersons who are responsible for the cleaning and the removal of waste from the unit – *"it was a huge number of big wheelie bins they had to take down, I think it was 80 in one day, full of masks and gowns" and "the workload was horrendous for the wardsperson staff"*.

5.2. Infection control procedures

Dealing with a novel disease not yet fully described will invariably be associated with some uncertainty and a lack of comprehensive information. The staff identified that an increased presence from the infection control team would have been useful in providing them with the latest findings and recommendations regarding the H1N1 Influenza virus. One staff member commented that – *"It would have been nice to have seen the infection control team more often and have them update the staff and be a reassuring presence and be available for questions and concerns"*. However, it was acknowledged that the workload of the Infection Control team during this time would have been markedly increased.

The isolation procedures employed during this period were also identified as creating extra workload, frustration and confusion. The responsibility for the education and monitoring of staff external to the ICU and patient's relatives in the correct donning and removal of PPE often fell to the nursing team leaders or float staff. This was described as an extra duty for the already overstretched team leaders and float staff and was reported to be time consuming and frustrating. One staff member reported that *"relatives were putting P2 masks on [despite being directed to wear surgical masks]. This was frustrating as it contributed to equipment shortages and relatives were not fitted for the masks"*.

Staff reported that there seemed to be confusion regarding the communication of when a patient was deemed to be non-infectious. It was perceived by many nursing staff that there was no protocol guiding when a patient was cleared of being infectious and there was often conflicting advice about whether to treat the patient as infectious or not. A comment from one nursing staff member was – *"confusion about when people were no longer considered infectious... who decides this? No information to bedside nurses"*. A suggestion made by a staff member involved having a central point where the patient's H1N1 status and infectious status could be recorded. This was seen as a solution to the confusion surrounding a patient's status and also as a way to reduce the unnecessary time spent trying to confirm the status from a number of different sources.

The staff did identify some other measures that they felt would have made their job easier in terms of enforcing or dealing with the infection control measures in place. Many staff members suggested that all ICU staff (nursing, medical, ancillary and allied health) should complete an

infection control course with yearly refresher courses to ensure that everyone is familiar with infection control procedures. They felt this was necessary because they personally witnessed frequent breaches in infection control protocol by other members of staff.

Additionally, the tighter restriction of visitors to the patients during this period was seen by many staff to be necessary to both limit the spread of disease and also to reduce the burden placed on the staff by having to ensure that each of the visitors complied properly with the infection control requirements. There were some restrictions enforced on visitors such as no children and no pregnant women but the number of visitors was still seen as excessive by many of the staff – *"I feel that ICU2 [the isolated ICU pod], being reverse barrier, should not have allowed that amount of visitors that came through. Instead relatives wandered around the unit, some in white gowns, some yellow, some duckbill [P2] masks, others surgical, most not understanding how to disrobe/disinfect properly" and "[I] did not appreciate the continuous flow of unnecessary people on an "isolated" unit"*.

Another practical measure outlined by bedside nursing staff that would have assisted in the reduction of cross-contamination was being permitted to wear theatre scrubs while working in the isolated unit which could then be laundered in the hospital. Staff saw this as an important measure to assist in reducing the likelihood of taking the disease home to their families – *"what's the point of taking a dirty uniform out with you... into your house and then putting it in your washing machine. It defeats the objective [of containing the disease]"*.

5.3. Fear of contracting and transmitting the disease

There was an element of fear described by the respondents – largely associated with the H1N1 Influenza virus being a new phenomenon. There was a fear of the disease itself – *"frightening – will I be infected?"* and also of the possibility that staff may contract it and end up as sick as the patients they were caring for. As many of the patients with H1N1 were of a younger demographic with minimal risk factors, staff could draw direct parallels between themselves and the patients and this led to them feeling vulnerable – *"well hang on, I'm the same weight, the same age, I'm not pregnant or whatever... so how come they've got it, so will I get it?"* and *"many of the patients were in the younger age group – same age as the nurse caring for them – it 'hit home' as to a person's vulnerability"*. This fear was manifested in a few staff by refusing or being reluctant to care for the H1N1 patients. It was identified that more education and information would have been helpful to *"take the fear for their own safety out of their care for their patients" and also "maybe having... an information session with the ID [infectious diseases] doctors for nurses in particular, just to allay their fears and the fears maybe were related to transmission to them and getting down to the basic questions of how long transmission was, those sorts of questions"*. This fear of a new disease amongst staff also extended to being fearful for their family's safety – *"going home to my children and not letting them touch me until after I had showered" and "concern of taking H1N1 to unwell/at*

risk relatives at home". But it was identified that as the pandemic wore on, the fear of the disease itself "dropped off after a while when they realised it wasn't a SARS thing".

Other contributing factors to the staff identifying feeling fearful were the inconsistencies in PPE requirements as previously identified above; and the fear of running out of PPE supplies and therefore being unprotected against the disease.

5.4. Adequate staffing levels within the ICU

A major component in successfully managing a crisis which involves an increase in patient numbers and acuity such as in a pandemic is how well staffing levels can be maintained. While some staff expressed positive feeling towards the staffing levels during the pandemic and acknowledged that the best was done in a very difficult situation – "there was support within the ICU and reasonably well staffed" and "[resources were managed] quite well as everyone seemed to work as a team and tried their best" – there was a feeling amongst the bedside nurses that nurse to patient ratios protocols put in place prior to the pandemic for caring for patients on Extra Corporeal Membrane Oxygenation (ECMO) were not always able to be met. Some comments from the bedside nurses included – "There were specific protocols to follow and we couldn't follow it because either we didn't have an ECMO float or we needed two people with a patient because they were so sick" and "I'm sure the best was done, but it seemed that there were inconsistencies in staffing regarding ECMO. Sometimes there was an allocated float [support nurse], other times not". Additionally it was noted that at times there was a lack of support staff on the floor to perform duties such as running for supplies and equipment, and analysing arterial blood gases.

Another common theme identified regarding staffing was the difficulty in matching the nursing skill mix to the high acuity of the patients and the perceived lack of support to junior staff at times – "It was difficult to allocate staff to high acuity patients due to large amounts of junior staff" and "one night we had a junior member of staff as Team Leader and two junior floats and the rest of the patients needed to be cared for and they didn't have the experience and that was difficult for them and I think very unfair". It was also noted that it was not only the isolated unit which had staffing difficulties but "staffing safely across all three units was an issue a lot of the time".

There was an overwhelming belief amongst all respondents that without the extra efforts of the staff in terms of overtime that the ICU would not have coped. With regards to the staffing of the ICU – "if people didn't do overtime we simply would not have got through it"; "without our dedicated staff filling in the staff shortfall it would have been worse" and "Overall I think we managed the situation exceptionally well given the extent to which we felt stretched however I think it was due to many of the staff extending themselves both with overtime shifts and with taking on a lot of additional responsibility beyond their designated roles".

However, the cost of this extra load carried by the nursing and medical staff was a feeling of fatigue and being stretched to the limit – "staff helped out a lot – overtime,

extra shifts, etc., however this meant many staff were tired/sick when they came to work" and "the increased hours of work were quite exhausting". In addition to the extra hours worked, another factor which may have contributed to this fatigue was the reported difficulty in facilitating adequate meal breaks for staff. It was noted that it was a challenge "covering meal breaks adequately with high acuity patients in almost every bed space". The staff reported that they regarded their meal breaks as a very important way of coping with the difficult situation but that the meal breaks were eroded by the time taken to remove and apply PPE and also by the activity of the unit – "we just didn't have time to go out and go to the loo or enjoy your breaks, you were scoffing your food to get back because it's so busy and you have to get back to your patient so other people can have breaks and stuff and I think that was a bit unfair".

There also was a perception that the efforts of the staff could not have been sustained for much longer – "staff fatigue was a problem – thank goodness the pandemic has settled down a lot now" and "I think people were getting a bit tired by then. . . people can sustain it for a while but then eventually people do get quite tired". Interestingly, there was no increase in sick leave – "very very unpredictably low, I expected a lot of people to call in sick" – during this time but there was a feeling amongst the senior staff that sick leave may have started to rise if the pandemic had gone on much longer – "no more [sick leave] than normal winter but it would have started going up I think" – and also no increase in sick leave was seen in the period immediately after the height of the pandemic.

It was identified by a large majority of respondents that the pandemic "really highlighted the fact that our wardsmen and AINs [Assistants in Nursing] and ENs [Enrolled Nurses] are really under resourced". AIN numbers were increased in response to the pandemic and this was really appreciated by the staff. But the shortage of wardspersons impacted greatly on the bedside nurses and the care of the patient – "not enough wardspersons to complete all [their] jobs – cleaning, waste and [assisting in] patient care" and "inadequate resource in terms of wardies – totally missed routine rounds, patients lying too long without turns". The wardspersons were identified as absolutely necessary to the safety of the patient during this time due to the acuity of the patients and the need for a minimum number of staff to be present to assist in turns and basic nursing care.

5.5. New roles for staff

The necessity of the staff having to take on new roles was identified as a recurrent theme. With a significant number of the H1N1 cases receiving advanced therapies such as ECMO, it was essential for these patients to be cared for by the more senior nursing staff who would ordinarily fulfil the role of team leader (TL) or float. Therefore it was necessary for nursing staff, not usually functioning in the roles of TL or Float, to quickly up-skill to fill these positions not only in the isolated unit, but also in the other two units. This was seen as a major concern for many more senior staff, in terms of these junior TLs and Floats being provided with adequate support – "junior TLs and floats left to run ICU, left feeling unsupported and

anxious”; “increased demand for senior nursing staff to care for ECMO saw less experienced staff pushed into roles of float and TL” and “the junior staff were quite stressed because there was very little support for them because all the CNs were wrapped up in the ECMO”. In response, the clinical nurse teachers’ role within the unit changed and they provided support to these more junior Tls and floats and also the more experienced nurses were able to provide support when able – “there were quite a few times early on when... if there was three of us between the two ECMO patients, one of us would go off and give them [the new Tls and floats] a hand”.

In addition to more junior staff filling the TL and float roles, there was a perception that some junior bedside nurses were caring for patients of a higher acuity than they normally did and with less supervision – “the supervision of the staff looking after them wasn’t to our normal extent” and there was a perceived concern that the standard of nursing care may have been compromised due to the difficulties of matching clinical skills to the high acuity of the patients.

However, the feeling amongst the majority of staff is that these more junior nursing staff members performed the new roles well, given their level of experience – “we had senior floats basically up-skilling rather rapidly into Team Leader positions, they just coped really well” and “I think we were a really good team”.

5.6. Morale levels

During the pandemic, it was the experience of the majority of the staff that a reasonably high level of morale was maintained. There was a great sense of “pulling together” and “getting the job done” amongst the staff. One nursing staff member commented that – “I feel overall [that] all members of the AICS [Adult Intensive Care Services] pulled together and were very well supported by each other”. The medical and nursing management team took extra measures to ensure the staff felt appreciated and that their hard work was recognised. This involved providing food, such as pizza, chocolates and fruit platters, for the staff and also messages of thanks. Many respondents reported that these tokens were much appreciated and contributed greatly to the team atmosphere. One staff member noted – “The team got a lot closer because we worked that hard and everybody should get credit for that”.

The staff who responded to the questionnaires and those who were interviewed were very quick to praise the efforts of their fellow workers. From one senior medical staff member – “I want to give credit to the people by the bedside... the nurse managers did a very good job in keeping people motivated and finding sufficient staff and appropriately skilled staff”. A comment from the member of nursing management – “I think the medical staff throughout all this were very good as well, very supportive”. Other comments included – “I think the enrolled nurses did a great job” and “our wardies worked really hard, they really do work hard”.

5.7. Education regarding ECMO

The majority of comments concerning education focused on ECMO training. All intensive care specialists

and a number of nursing staff had received ECMO training prior to the H1N1 pandemic period and this education continued on throughout the pandemic period because increasing the number of ECMO trained nursing staff was seen as a priority – “the only thing we really pushed for [in terms of education] to keep going was the ECMO training, we took people off-line... that was a priority for us”. The feedback regarding this training was overwhelmingly positive – “the training that they organised was excellent... you just got up and went into it and were happy” and “the teaching on that was brilliant... and taught us what we needed to do a good job”. However, those nursing staff who had not received training identified “feeling out of the loop” and felt this caused an element of division between the staff who had been trained and those who had not but as more staff are trained in ECMO this will no longer be the case. Additionally, some staff felt that the training of the medical registrars in ECMO would have been useful and that the presence of a ‘practice’ ECMO circuit on the unit in future would be beneficial.

5.8. The challenges of patient care

A theme that emerged was that caring for this group of patients was enjoyable but challenging at times. Many staff identified that they really enjoyed the experience of looking after patients who required complex advanced care – “I loved being on the ECMO [patients], I loved the continuity of care. I think it’s really important and I personally didn’t mind being with the same patients day in day out because I felt I had achieved something” and “enjoyed busy advanced care, problem solving and need for close team work”. Nevertheless, a minority of nursing staff found it “hard to keep interested towards the end [due to the] general lack of variety in patient condition”.

Collectively, staff acknowledged that caring for these patients was emotionally difficult due to the young age of the patients – “I found it really depressing nursing people who had children the same age as I do and younger” and “the age of some of our patients made it hard to cut off emotionally” and also due to the unpredictable nature of the illness – “because you can’t say how they are going... you didn’t know how they were going to react to it [the treatments] and you didn’t really know with the ECMO how they were going to go with it”. Staff also identified that these patients and their families required additional emotional support – “having the same type of patient each shift left me feeling ‘burnt out’ as some of these patients and families required a great deal of emotional support” but that the relatives were extremely understanding of their loved one’s condition – “they understood that it was a new treatment and that nobody knew much about H1N1”.

Another challenge reported by the nursing staff particularly was the issue of patient confidentiality. Some staff felt that their patient’s privacy and confidentiality was being compromised by the amount of unnecessary visitors and staff allowed on the unit – “I think we should have really restricted people right from the start because it is better not to be a sideshow... I just thought that was inappropriate and unnecessary”.

6. Implications for future planning

This study examined the lived experience of staff caring for patients in ICU with the H1N1 Influenza virus during the height of the pandemic. The intention of the study was to examine the collective experiences of the frontline healthcare workers, identify issues which were important to them and use this to inform future pandemic planning efforts. Planning for such events is invariably difficult due to the unpredictable nature of the events themselves.

The H1N1 pandemic put a tremendous strain not only on our resources in the ICU but also on the Infection Control team. It has been suggested in a previous study examining the severe acute respiratory syndrome (SARS) outbreak of 2003 (Gomersall et al., 2006), that it would be useful to employ a dedicated Infection Control representative in the ICU to manage acute pandemic situations. The responsibilities of this role could include ensuring compliance to infection control protocols such as isolation procedures, proper use of PPE amongst staff and visitors and environmental cleaning procedures; acting as a resource for questions regarding infection control issues; and to provide education sessions on infection control precautions and the latest information regarding the disease. Mitchell et al. (2002) identified that during periods where isolation procedures are brought into effect that the already stretched staff were often required to take on the extra roles of enforcing contact precautions, educating visitors to the area on the correct usage of PPE and monitoring compliance with infection control practices. It was reported by the study respondents that there was a need for more support from the infection control team, uncertainty regarding the infectious status of the patients, confusion over what PPE was required during the pandemic and a need for formal infection control training for all staff, including ancillary and allied health staff. The appointment of a dedicated infection control nurse during this time would assist in resolving these issues.

The bedside nursing staff identified that they believed the number of unnecessary visitors should have been restricted during this period to maintain infection control protocols and for patient privacy and confidentiality. Gomersall et al. (2006) suggested that it would be reasonable to consider significantly reducing or banning visitors during this time because of the risk of spreading the disease, the difficulty of guaranteeing the correct PPE for visitors and the risk of lapses in infection control protocols by visitors. The nursing management agreed that if a pandemic was to occur again, the unnecessary visitors would indeed be restricted. However, the welfare of the patient's significant others during this stressful period must also be taken into account. Therefore, a change of communication methods will be necessary and a daily phone call to one relative may be required to update them of the patient's condition, in the event that a ban on visiting was in effect (Gomersall et al., 2006). Additionally, it is also important to ensure that only health care workers essential in the care of the patient are permitted to enter the isolated area.

It is paramount that effective communication channels are maintained during this time. One way this was

achieved in the ICU was the appointment of one intensive care specialist as the pandemic coordinator and the staff identified this as being extremely helpful. This role involved being the coordinator of the pandemic, managing all issues pertaining to the pandemic including communications with external departments and dealing with any issues arising from the pandemic that did not involve direct patient care issues. This allowed the other intensive care specialists and nursing staff to concentrate on the care of the patient. This appointment of a coordinator role streamlined communication both within the unit and also externally and there was no confusion about who to communicate with regarding pandemic issues. Another useful measure identified in maintaining good communication channels was a daily meeting between the senior medical and nursing staff which provided a forum to feedback issues to each other and problem solve.

Maintaining adequate numbers of appropriately skilled staff was identified by nursing management as a major challenge during this period. The importance of matching the high acuity of the patients with appropriately skilled staff is an important method to ensure the safe care of all ICU patients. It has been shown that nurse inexperience can adversely impact on the quality of care provided to critically ill patients (Morrison et al., 2001) and the contributing factors to such occurrences were all present during the recent pandemic – staff shortages, high unit activity and lower levels of supervision. Additionally, many staff were working a large amount of overtime during the pandemic and this has also been shown to increase both errors and near misses (Scott et al., 2006). However, the reality of the situation was that if the medical and nursing staff had not have worked the extra hours, it would not have been possible to staff the ICU. The nurse managers identified that in a future pandemic actions to minimise staffing problems would include limiting annual leave during this time and also booking contract or agency nursing staff in advance to cover the increased staffing needs of the ICU. It is essential to increase staffing levels during a pandemic period to assist in facilitating adherence to staffing protocols, to facilitate adequate meal breaks for staff and to assist bedside nursing staff in getting supplies and running blood tests. If safe to do so, the transfer of lower acuity patients to nearby ICUs should also be considered to reduce the burden on staff.

In addition to medical and nursing staff, it is essential that ancillary staff levels (specifically wardspersons) be increased to cope with extra cleaning duties; extra waste generated by PPE, patient transfers; and the extra support required when repositioning such critically ill patients. Placing a wardsperson on duty overnight would facilitate the completion of essential cleaning duties which were difficult to complete during the busy daytime hours. There was no increase in wardsperson hours during the height of the pandemic despite requests from ICU management and this must be remedied in the event of a future pandemic. The importance of the wardsperson's role in the successful functioning of the ICU during a pandemic period must be recognised by hospital management and resources must be put in place to deal with the extra workload.

7. Limitations

A limitation of the phenomenological study design is the question of whether the findings are generalisable to a broader population therefore the investigators acknowledge that the findings pertain to our targeted sample of ICU staff caring for H1N1 patients. Additionally, the poor response rate from medical staff, particularly the medical registrars, means that the experiences of this group of health care workers may not be adequately or fully described by this study.

8. Conclusion

The eight themes identified in this study articulate the lived experience of the staff during the height of the H1N1 Influenza pandemic period in Australia in 2009. Issues which were important to the staff while caring for these patients were: the wearing of PPE for long periods, while essential, was physically uncomfortable and difficult; adequate stocks of PPE must be ensured; good communication was crucial in ensuring the efficient dissemination of information particularly regarding infection control measures and the disease process; adequate staffing levels must be maintained and the increase in staffing levels must be anticipated; the education of staff in advanced therapies (such as ECMO) is of great importance in coping with the increased demands of the pandemic; and the care of these patients and their loved ones is physically and emotionally demanding. Recommendations for future pandemic planning which can be drawn from this study include the appointment of a dedicated infection control representative to provide information and support regarding infection control matters; the maintenance of effective communication channels is crucial and the appointment of a pandemic coordinator should be considered; and the increased staffing requirements across nursing, medical, allied health and ancillary staff to cope with the higher patient numbers and acuity must be anticipated and planned for. The findings of our study offer valuable insights into the frontline medical and nursing staffs' experiences of a pandemic and it is hoped they provide valuable information for health care professionals and policy makers to assist them in planning for future pandemic outbreaks.

Acknowledgements

The investigators wish to acknowledge the skill and dedication of the entire team involved in the care of

these critically ill patients during the H1N1 Influenza pandemic. Their hard work and commitment during this time was truly extraordinary. The investigators would also like to thank the study participants for their honest and rich recollections of their experiences during this time.

Conflict of interest: None declared.

Funding: None declared.

Ethical approval: Human Research and Ethics Committee, The Prince Charles Hospital, Approval ref. 09/137.

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