Public health nurses (PHNs) in the Republic of Ireland (RoI) work as part of a multidisciplinary team in the delivery of community-care services. In contrast with the UK they work in a specific geographical area rather than being attached to a GP and are locally situated, usually working from health centres. While there are other nurses working in the community, PHNs are the only nurses universally available and consequently they work with a multiplicity of client groups. These include people of all ages who require a domiciliary clinical nursing service, e.g. infants and children (including children of school age), children at risk, people with physical and intellectual disability, young people with chronic illness, people discharged from the psychiatric service and anticipatory and nursing care of older people. In practice, the main focus of the public health nursing service is on children and older people (Chavasse, 1995; Hanafin, 1997).

The child health programme in the RoI provides strategic and operational structures for PHNs’ work with families with infants, and has a similar focus to work undertaken by health visitors in the UK. Focused on primary and secondary prevention, PHNs working in the child health programme are obliged to provide a universal, ongoing service (Denyer et al, 2000). Screening for health and well-being is central to PHNs’ work and their assessment takes account of vision, hearing, gross and fine motor skills, social development and general care of the infant (Kelly, 1995; Curry, 1997). The broad nature of the PHN role means that, where areas requiring further investigation are identified, PHNs can provide a gateway for families to access other professional groups. These groups may include speech therapists, eye and hearing specialists, community welfare officers (health board employees who provide financial assistance to people with low incomes), social workers and GPs. However, in order to provide this service, a structure by which PHNs can communicate with other professionals is required.

Communication in organizations is essential to achieve coordinated action, shared information and expression of feelings and emotions (Morley et al, 1998). Three attributes deemed necessary for effective communication (Armstrong, 1999) are:

- Appropriate channels of communication
- Appreciation of the need to communicate
- Skills for communication.

Communication difficulties have been identified between professionals working in Irish primary care (Hayes et al, 1992; Kelly, 1995; O’Sullivan, 1995; Buckley et al, 1997; Denyer et al, 2000). Hayes et al (1992), in a study of GPs (n = 33) reported that 27% were ‘dissatisfied’ or ‘very dissatisfied’ with communication between their service and that of the PHN. Problems with feedback and communication between social workers and others professionals, including PHNs, have also been identified (Buckley et al, 1997). In a comprehensive review of child health services, Denyer et al (2000) stated that, ‘the process of referral and feedback when a
problem is detected with a child is very variable and too often unsatisfactory.’

This article provides empirical evidence of referral and feedback patterns, in addition to reported working relationships between the PHNs and other named community services.

Research aims
The data presented here are drawn from a national survey of PHNs working in the RoI. The survey formed part of a two-phase case study, the aim of which was to develop a model to enable assessment of the quality of the public health nursing service to families with infants. This approach was designed to be holistic in order to incorporate multiple stakeholders’ views and take account of the organizational context within which the service is provided.

It was agreed that, because of the lack of research in this field, the starting point for the study should be an investigation of the service, structure and processes of the public health nursing service. No previously developed questionnaire was found to be suitable for providing this description, therefore a new questionnaire was developed. The development was guided by two key objectives:

- To describe key structures and processes of the public health nursing service at an individual level
- To identify respondents’ understandings of service quality.

This article will focus on only one aspect of the report, the communication (including referral pathways) of PHNs who work with families with infants and other professionals.

Methodology

Development of the questionnaire
Questionnaire development took place in five steps:

- Content identification
- Establishment of an ‘expert’ group
- Item identification
- Question development
- Pilot study of the questionnaire with 20 PHNs.

To ascertain the reliability of the questionnaire, i.e. its consistency and accuracy, reliability procedures were pre-tested by an expert group. No previously validated questions were available to the authors of the survey (in respect of referral, feedback and working relationships). Therefore a new 26-item scale was developed.

In order to ensure the reliability of the questionnaire, the Cronbach’s alpha test was applied. Cronbach’s alpha is a statistical test used to guarantee the reliability of a questionnaire, and tests the internal consistency of the scale, i.e. the degree to which the subparts of an instrument are all measuring the same attribute or dimension” (Polit and Hungler, 1989). Cronbach’s alpha essentially takes every possible way of forming two halves of the test items, e.g. feedback from specific professionals and referral to specific professionals and working relationships with individual professionals, correlates the test scores of the halves, and then finds the average of the correlations (Foster, 1998). A Cronbach’s alpha coefficient of 0.80 or above indicates that the scale reflects one underlying concept (Bear and Bowers, 1998). The newly developed questionnaire for referral, feedback and working relationship had a Cronbach’s alpha coefficient of 0.8468 and therefore demonstrated high internal reliability. Content and construct validity were ensured (in so far as is possible) through a comprehensive literature review, engagement with the expert group and a pilot study with 20 subjects. Space was allowed for respondents to add brief comments at the end of the questionnaire.

Participant selection
A survey of all registered PHNs in the RoI was undertaken in late 1999 using the An Bord Altranais (the Irish nursing board) live nursing register. A census of PHNs was appropriate in this study because the literature review had illustrated considerable working differences across different areas. The power of the study to detect such differences may have been reduced if only a small number of PHNs were included in the study.

Data collection
Ethical issues regarding consent, privacy and data confidentiality were discussed with the An Bord Altranais, and mechanisms were put in place to ensure these were not compromised. Detailed information was given on the questionnaire outlining the purpose of the study, intended use of the data and full contact details of one of the researchers so that fully informed consent was ensured. Anonymity was guaranteed. Before the start of the study all directors of public health nursing were contacted to inform them about the study and one month after the initial questionnaire was sent a reminder letter with a new questionnaire was mailed by An Bord Altranais to each PHN. The additional questionnaires were sent with a view to increasing the response rate.

Analysis
A response rate of 54% (n = 946) was achieved. More than one-third (n = 331) of these respondents were excluded from the analysis because they did not work with families with infants. Some of those excluded indicated they were working in different
areas of nursing (e.g. general nursing, psychiatry etc.) or in nursing management. Others had retired or had left nursing altogether. Two people had actually died. This raises questions about the ‘live’ nature of the register held by An Bord Altranais. As a result the data presented in this report are generated from the remaining respondents (n = 615) whose roles did involve working with families with infants.

The software package SPSS was used to prepare the questionnaires for analysis by identifying the variables, e.g. referral to eye specialists, feedback from social workers. A coding framework was developed and a data file produced, comprising all the coded variables (e.g. referral to eye specialists, 1 = yes, 2 = no). Guided by the overall research aim, statistical techniques were used to describe the service and its elements. This included individual and system structure characteristics: demographic details, educational preparation, details of health centres, multidisciplinary working, child health services, service delivery, and interpersonal and technical indicators of process in the service. To identify any differences or similarities across the service, further tests were carried out. These included descriptive statistics, e.g. mean, standard deviation, range, etc, and inferential statistics, e.g. chi-squared and correlation. Statistical significance was assumed where probability (P) values were less than 0.001 (i.e. the probability that identified differences occurred by chance alone was less than 1%). Although in several tests, the level of significance was much greater than 0.001, in this article all significant results are reported at that level.

Results

PHNs working with families with infants come in contact with a number of named professionals, including community welfare officers (CWOs), area medical officers (AMOs), GPs, practice nurses (PNs), hearing specialists, speech therapists, eye specialists and social workers. Respondents were asked to indicate whether they could refer directly to each of the named professionals.

The findings presented in Table 1 highlight differences in referral procedures for PHNs, particularly in respect of hearing and eye specialists. Further investigation, by examining comments made in the free comments section, regarding practice nurses revealed that in general PHNs could directly refer to this group but as not all GP practices had nurses attached it was not possible to refer in some areas.

The respondents identified that there were three different paths for referring infants to hearing specialists:

- Third party referral: the PHN referred the infant to an AMO or GP (who would then refer to a hearing consultant)
- Direct referral to a hearing consultant
- Direct referral to the national rehabilitation board.

The national rehabilitation board is a voluntary, government-sponsored organization, providing assessment, management and training of people with disabilities. Where a respondent named the board as a point of referral, it was taken by the researchers as a direct referral to a hearing specialist.

The variation in ability to refer directly to a hearing specialist was an important finding because it demonstrated the arbitrary nature of referral practice. For example, in one health board area only 16% of respondents said they could refer directly to the hearing specialist, while in another more than two-thirds were able to refer directly. These differences were also noted in respect of eye specialists and in both cases were statistically significant ($\chi^2 = 68.876; df 7; p < 0.001$ and $\chi^2 = 168.009; df 7; p < 0.001$ respectively). Where PHNs were having to use a third-party referral, their comments showed that they felt very frustrated, particularly because of the consequent delay for families and also because it undermined the work of the PHNs:

‘After identifying a problem it is very frustrating that a PHN cannot make a direct referral to the specialist rather than having to refer to the AMO or GP. There can be a long delay for the family before they even see them and then they inevitably refer them on anyway. I can’t understand the reasoning for it.’ (Respondent 519)

Feedback

To identify the percentage of occasions PHNs received feedback following referral to other professionals a 9-item, 5-point (always–never) scale was used (Figure 1).

### Table 1. Percentage of PHNs who said they could refer directly to various disciplines

<table>
<thead>
<tr>
<th>Professional group</th>
<th>% able to refer directly</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community welfare officer</td>
<td>99</td>
<td>600</td>
</tr>
<tr>
<td>Area medical officer</td>
<td>97</td>
<td>594</td>
</tr>
<tr>
<td>General practitioner</td>
<td>98.5</td>
<td>596</td>
</tr>
<tr>
<td>Practice nurse</td>
<td>70.6</td>
<td>540</td>
</tr>
<tr>
<td>Hearing specialist</td>
<td>42</td>
<td>576</td>
</tr>
<tr>
<td>Eye specialist</td>
<td>49</td>
<td>584</td>
</tr>
<tr>
<td>Speech therapist</td>
<td>89</td>
<td>593</td>
</tr>
<tr>
<td>Social worker</td>
<td>94.5</td>
<td>595</td>
</tr>
</tbody>
</table>
Figure 2 illustrates substantial differences in the reported levels of feedback received by PHNs from other professionals. Speech therapists were widely reported to ‘always’ provide feedback (84%), and feedback from AMOs was also high (78%). Only 29% of PHNs reported receiving feedback from eye specialists and significant differences were identified between those who could and could not directly refer. PHNs who could refer directly to an eye specialist, received feedback about 30% of the time, compared with only 7% for those who could not directly refer. This is not particularly surprising but it is important to note the strong correlation between reported levels of feedback and working relationships.

The findings in respect of GPs and social workers demonstrate particularly low levels of feedback. More than one in four respondents reported they never received feedback from the GP (27%; n = 154); 21% (n = 123) said they received feedback between 35% and 69% of the time, and 20% (n = 115) between 5% and 34% of the time. Differences were noted at a local level. PHNs commented that they received very good feedback from individual GPs but none from other GPs. GPs operate independently of the health board, although they are contracted to provide certain services to all mothers with infants. These services include a 6-week postnatal examination of both the mother and infant, and vaccinations.

Reported levels of feedback from social workers were dismally low. Over half of PHNs indicated they never (24%; n = 135) or almost never (29%; n = 164) received feedback from social workers. A significant number of respondents felt that feedback from social workers was essential for many PHNs and social workers visit the same families. ‘Problem or vulnerable families require a lot of input from PHNs and social workers, but sharing of information by the social workers is slow and rarely initiated by them’. (Respondent 116)

Working relationships

Working relationships between PHNs and other professionals was the third aspect of the study reported on here. In general PHNs reported having ‘good’ or ‘very good’ relationships with other professionals although there were considerable differences according to professional group (Figure 3).
Almost all PHNs reported that working relationships with CWOs (85%; n = 495), speech therapists (89%; n = 485) and AMOs (87%; n = 500) were ‘good’ or ‘very good’. However, again with eye specialists (42%) and social workers (33%), PHNs reported a ‘poor’ or ‘very poor’ working relationship. There was also a rural/urban divide in the figures for working relationships with social workers. For example, in city areas 44% of PHNs reported ‘poor’ or ‘very poor’ relationships, whereas it was only 25% in mixed rural/urban areas, a finding which was statistically significant ($\chi^2 = 45.796; df = 15; p = 0.000$). Again a correlation between receiving feedback and a good working relationship can be seen ($r = 0.754; p = 0.000$). For example, PHNs who noted they received feedback more than 70% of the time also reported having good working relationships, whereas PHNs who reported receiving feedback less than 35% of the time reported poorer working relationships. Only 16% ($n = 90$) of PHNs reported the availability of a formal structure for multidisciplinary interaction, and many respondents called for structures to be set in place.

Discussion
A number of Irish publications have alluded to issues relating to referral pathways, feedback, and working relationships between various disciplines involved in child health work (Kelly, 1995; Department of Health, 1997; Commission on Nursing, 1998; Commission on the Family, 1998; Denyer et al, 2000). The findings presented here bring these issues together and quantify their extent. Although a large number of PHNs were able to refer to most other professionals involved in the provision of services, less than half of all respondents were able to refer directly to a hearing or eye specialist. This was identified by PHNs as problematic, particularly in respect of feedback and follow-up for infants. Moreover, where referral took place through a third party (usually either AMO or GP), PHNs reported that their work in screening infants for hearing or vision problems was undervalued and their role undermined. The results of this study have highlighted that visits to two professionals for the same health problem (for example, hearing and vision) are common. By analysing the statistical differences identified across health board areas, it could be argued that the rationale underpinning third-party referral is a matter of geography rather than evidence base. It is equally clear that duplication of work at a time of resource constraint is a matter of value for money. Third-party referral raises many questions around the visibility, credibility, accountability and value placed on the work of PHNs.

The findings suggest that there is a large variation in the number of times PHNs receive feedback from other disciplines. Some professionals, particularly speech therapists and AMOs, routinely provide feedback while others, specifically GPs and social workers, do not. There are many potential reasons why feedback is important including, among others, its importance in enabling follow-up of clients and its centrality to the development of working relationships. The findings echo those of Hayes et al (1992) regarding poor communication between PHNs and GPs, indicating that little has changed in the last 10 years. However, these results do not support the contention that PHNs and GPs work independently of each other. Despite low levels of feedback from GPs, almost two-thirds of PHNs reported having ‘good’ or ‘very good’ working relationships with them.

The findings regarding poor levels of feedback from social workers to PHNs are a matter of concern, although they do quantify problems highlighted by others (Irish Nurses Organization, 1996; Buckley et al, 1997). Two investigative inquiries on cases of child abuse (South Eastern Health Board, 1993; Commission of Inquiry, 1995), identified many problems arising from the failure of key professionals, including these two groups, to communicate with each other. Despite the recommendations made in these reports, this study shows that there are many outstanding difficulties around feedback.

Working relationships between PHNs and other professionals were reported by PHNs to be generally ‘good’ or ‘very good’ although again there were notable differences between different professional groups. The generally poor relationships with eye and
hearing specialists may be understandable, because the indirect referral route for the majority of PHNs means that opportunities for developing working relationships are limited or non-existent. The extent of the differences according to professional group, however, suggests that the explanation for poor working relationships may well be found at a system rather than individual level, but it also raises many questions around equity of service delivery.

The correlation between low levels of feedback and poor working relationships provides unequivocal evidence of a relationship between these two variables. It raises many research questions for service providers and policy makers: whether there is an appreciation of the need for feedback whether the structures in place facilitate feedback; whether professionals have sufficient skills in this area; and how feedback and working relationships can be better facilitated. The results of this study cannot answer these questions but they can point to particular disciplines (e.g. AMOs, speech therapists and CWOs) who appear to be successful, in respect of the public health nursing service.

Conclusion

Communication difficulties between professionals are not unique to the Irish situation and difficulties arising within disciplines (Griffiths and Luker, 1994; Wiles and Robinson, 1994), between disciplines (Poulton and West, 1993; Barr, 1995) and within organizations (Vancay, 1997; Borrill et al, 2000) have been identified as problematic elsewhere. The areas of good practice identified in this study need to be examined further, and these models may be able to help guide development of mechanisms to support multidisciplinary communication in a way that facilitates good working relationships.

This work was undertaken while Sinéad Hanafin was a doctoral student at King’s College London. She gratefully acknowledges the funding received from An Bord Altranais (1998–1999) and from the Irish Health Research Board from 1999–2002 during her studies.


Irish Nurses Organisation (1996) Submission to the Department of Health by the public health nurses section on putting children first. Irish Nurses Organisation, Dublin

KEY POINTS

- Efficient communication is central to successful interdisciplinary working.
- Irish public health nurses (PHNs) work in a multidisciplinary environment and provide a gateway for families with infants to a wide range of other health and allied professionals.
- Less than half of PHN respondents reported being able to refer directly to eye and hearing specialists and this was identified as problematic in terms of waiting times, feedback, follow-up and service quality.
- PHNs reported that they received feedback from speech therapists and area medical officers always or almost always but for other named professional groups, reported levels were disappointingly low.
- PHNs, in general, reported ‘good’ or ‘very good’ working relationships with other professionals, particularly area medical officers, speech therapists and community welfare officers.
- A statistically significant correlation was found between working relationships and reported feedback.
- Interdisciplinary communication requires investment on an organizational, professional and inter-personal level.