Older people’s use of NHS Direct

WEN-CHIN HSU1, PETER A. BATH1, SHIRLEY LARGE2, SARAH WILLIAMS2

1Information School, Centre for Health Information Management Research (CHIMR) and Health Informatics Research Group, University of Sheffield, Sheffield, UK
2NHS Direct, Hampshire, UK

Address correspondence to: P. A. Bath. Tel: (+114) 2222636; Fax: (+114) 2780300. Email: p.a.bath@sheffield.ac.uk

Abstract

Introduction: the 24 h telephone health information and advice service in England and Wales, NHS Direct, aims to help callers manage health problems and relieve pressure on primary healthcare services. Although older people may use NHS Direct less than other age groups, no research has specifically investigated older people’s use of the service.

Aims: the aim of this study was to describe the older people’s use of NHS Direct and to explore differences in the use of NHS Direct among subgroups of older people.

Methods: a cross-sectional exploratory descriptive design utilising quantitative methods was adopted. Data on all calls made to NHS Direct by, or on behalf of, people aged 65 and over between 1 December 2007 and 30 November 2008 were analysed.

Results: a total of 402,959 telephone calls were made to NHS-Direct regarding older people during the 12-month study period. The call rate was higher among women and in older age groups. Most calls were regarding actual symptoms, e.g. pain, digestive problems.

Conclusions: this research identifies the characteristics of calls made to NHS Direct relating to older people and how they use the service. This will help with the planning and development of services to meet the needs of the older population.

Keywords: older people, NHS Direct, health services, telephone triage, elderly


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Introduction

The continuing growth of the UK older population is focussing attention on effective healthcare delivery [1]. The projected increase in the numbers of people aged 65 years and over from 9.8 million (16% of the UK population) in 2008 to 14.8 million (21%) by 2028 [2] will create additional demands on healthcare services. Sixty percent of people aged 65 years and over report a longstanding illness or disability and 25% of them live alone [3]. Particular groups of older people therefore have specific needs for health services, and require advice and information about symptoms and conditions; NHS Direct has an important role to play in providing this support.

NHS Direct is a telephone- and internet-based health advice and information service for England and Wales. The service is available 24 h a day 365 days per year and is provided via telephone and the Internet by nurses, health advisors and dental advisors [4]. Previous studies show that older people used NHS Direct less than other age groups [5, 6]. However, little research has specifically focused on use of the service by older people, and this was either based on a single region [6] or on a qualitative point of view [7]. To date, limited quantitative research has examined older people’s use of NHS Direct in England and Wales. An understanding of the utilisation patterns will help to facilitate provision of healthcare services for older people.

The aim of this study was therefore to describe older people’s use of NHS Direct and explores differences in the use of the service among subgroups of older people, defined as people aged 65 years and over.

Methods

Study design

A cross-sectional descriptive design utilising quantitative methods was used. The population for the study was all calls made by, or on behalf of, people aged 65 years and over to NHS Direct for health information or for a symptomatic consultation during the period 1 December 2007 to 30 November 2008.

Data collection

NHS Direct uses a computerised Clinical Assessment System (CAS) to support its nurse and health advisers and details of the consultation process are recorded in CAS. Anonymised CAS data on all calls made to NHS Direct by, or on behalf of, older people over the 1-year period (1 December 2007 to 30 November 2008) were analysed. The data included the age and gender of the subject of the calls, types of calls (e.g. symptoms or health information), the algorithms that were followed during assessment (e.g. low back pain) and outcome of calls (e.g. 999).

Results

During the 12-month study period, a total of 402,959 calls were made concerning older people to NHS Direct. Of these calls, 361,510 (89.7%) were for health symptoms in the older person, and the other call types were dental calls (n = 15,364; 3.8%), health information enquiries (n = 3,825; 0.9%), enquiries about medicines (n = 11,797; 2.9%) and other (i.e. the calls required to be re-categorised or reprioritised by a clinical team leader) (n = 10,463; 2.6%).

Age and gender of older people who use the service

The age of the subject of the calls ranged from 65 to 109 years (mean = 76.78; median = 76; Standard Deviation = 7.856; mode = 65). The rate of calls across all age groups was 0.046 pppa. Figure 1 shows the rate of calls pppa stratified according to age and gender. Rates increased gradually with advancing age, with the lowest rate for people aged 65–69 (3.8 × 10⁻² calls pppa) and the highest rate for those aged 85 years and over (6.4 × 10⁻² calls pppa). More calls were made by women (4.9 × 10⁻² calls pppa) than by men (3.9 × 10⁻² calls pppa). However, the gender difference decreased with advancing age. In the 85 and over age group, there was almost no difference between the rate of the calls for women and men.
Reasons for call

Table 1 shows the overall number and rate of the calls (pppa) according to the algorithm group and age group. The most common reasons for the calls were pain ($n = 99,419, 24.7\%$), digestive problems ($n = 51,884, 12.9\%$) and respiratory tract disorders ($n = 40,326, 10\%$). The problems with the least number of calls (i.e. proportion of calls $>0.1\%$ of total calls) were falls (non-traumatic), nervous system diseases, fatigue, sleep problems, lumps and immune system problems. The call rate for most reasons increased with advancing age, with a peak in the 80–84 years or the 85+ age group (e.g. pain) (see Table 1). However, the pattern of the calls for dental problems was reversed, in which the highest call rate was for the 65–69s ($0.26 \times 10^{-2}$ calls pppa) and decreased steadily with age, with the lowest call rate in the 85+ age group ($0.12 \times 10^{-2}$ calls pppa). When analysing according to the algorithm group and gender, the rate of calls concerning women was higher than that concerning men for most call reasons. The only two exceptions were those for dental problems and urogenital disorders, in which the rate of calls for dental problems was $0.18 \times 10^{-2}$ calls pppa for women and $0.21 \times 10^{-2}$ calls pppa for men; that for urogenital disorders was $0.22 \times 10^{-2}$ calls pppa for women and $0.29 \times 10^{-2}$ calls pppa for men.

Urgency of calls

Calls to NHS Direct are initially prioritised by staff into one of three groups (priority 1, 2 or 3) according to a time-frame within which the service aims for the clinical assessment to take place (20, 60 or 120 min, respectively).

Figure 1. Rate of calls per person per annum according to age group and gender.

Table 1. Volume and rate of calls per person per annum according to age group and algorithm group

<table>
<thead>
<tr>
<th>Algorithm group</th>
<th>65–69</th>
<th>70–74</th>
<th>75–79</th>
<th>80–84</th>
<th>85+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>24,126 (1.01)</td>
<td>22,248 (1.07)</td>
<td>20,334 (1.16)</td>
<td>16,667 (1.28)</td>
<td>16,044 (1.37)</td>
<td>99,419 (1.14)</td>
</tr>
<tr>
<td>Digestive problems</td>
<td>10,300 (0.43)</td>
<td>10,593 (0.51)</td>
<td>10,871 (0.62)</td>
<td>9,695 (0.77)</td>
<td>10,155 (0.87)</td>
<td>51,884 (0.60)</td>
</tr>
<tr>
<td>Respiratory tract disorders</td>
<td>8,034 (0.34)</td>
<td>7,923 (0.38)</td>
<td>8,325 (0.48)</td>
<td>7,468 (0.58)</td>
<td>8,576 (0.73)</td>
<td>40,326 (0.46)</td>
</tr>
<tr>
<td>Wounds and injuries</td>
<td>5,879 (0.25)</td>
<td>5,527 (0.26)</td>
<td>5,133 (0.31)</td>
<td>4,545 (0.42)</td>
<td>4,738 (0.63)</td>
<td>25,791 (0.34)</td>
</tr>
<tr>
<td>Sensation disorders</td>
<td>5,718 (0.24)</td>
<td>5,400 (0.26)</td>
<td>5,054 (0.29)</td>
<td>4,178 (0.32)</td>
<td>3,898 (0.34)</td>
<td>24,293 (0.28)</td>
</tr>
<tr>
<td>Urogenital disorders</td>
<td>4,574 (0.19)</td>
<td>4,514 (0.22)</td>
<td>4,582 (0.26)</td>
<td>4,261 (0.23)</td>
<td>4,471 (0.28)</td>
<td>22,429 (0.26)</td>
</tr>
<tr>
<td>Medicines enquiry</td>
<td>4,513 (0.19)</td>
<td>4,456 (0.21)</td>
<td>4,402 (0.25)</td>
<td>3,666 (0.28)</td>
<td>3,230 (0.28)</td>
<td>20,267 (0.23)</td>
</tr>
<tr>
<td>Other</td>
<td>4,169 (0.18)</td>
<td>4,030 (0.19)</td>
<td>4,004 (0.23)</td>
<td>3,647 (0.28)</td>
<td>3,471 (0.23)</td>
<td>20,267 (0.23)</td>
</tr>
<tr>
<td>Dental problems</td>
<td>6,223 (0.26)</td>
<td>6,067 (0.22)</td>
<td>5,187 (0.18)</td>
<td>1,978 (0.15)</td>
<td>1,432 (0.12)</td>
<td>17,477 (0.20)</td>
</tr>
<tr>
<td>Mental health</td>
<td>2,517 (0.11)</td>
<td>2,479 (0.12)</td>
<td>2,037 (0.17)</td>
<td>1,915 (0.25)</td>
<td>1,728 (0.37)</td>
<td>15,530 (0.18)</td>
</tr>
<tr>
<td>Poisoning and overdose</td>
<td>3,080 (0.13)</td>
<td>2,806 (0.13)</td>
<td>2,540 (0.15)</td>
<td>2,048 (0.16)</td>
<td>1,946 (0.17)</td>
<td>12,420 (0.14)</td>
</tr>
<tr>
<td>Skin/Hair/Nail diseases</td>
<td>2,586 (0.11)</td>
<td>2,202 (0.11)</td>
<td>2,057 (0.12)</td>
<td>1,659 (0.13)</td>
<td>1,564 (0.13)</td>
<td>10,050 (0.12)</td>
</tr>
<tr>
<td>Diabetes mellitus and blood sugar enquiries</td>
<td>1,610 (0.07)</td>
<td>1,932 (0.09)</td>
<td>1,750 (0.10)</td>
<td>1,359 (0.10)</td>
<td>955 (0.08)</td>
<td>7,606 (0.09)</td>
</tr>
<tr>
<td>Body temperature change</td>
<td>1,146 (0.05)</td>
<td>1,128 (0.05)</td>
<td>1,085 (0.06)</td>
<td>987 (0.08)</td>
<td>1,049 (0.09)</td>
<td>5,395 (0.06)</td>
</tr>
<tr>
<td>Heart disorders</td>
<td>1,285 (0.05)</td>
<td>1,205 (0.06)</td>
<td>1,068 (0.06)</td>
<td>818 (0.06)</td>
<td>584 (0.05)</td>
<td>4,960 (0.06)</td>
</tr>
<tr>
<td>Muscular diseases</td>
<td>566 (0.02)</td>
<td>749 (0.04)</td>
<td>813 (0.05)</td>
<td>942 (0.07)</td>
<td>1,034 (0.09)</td>
<td>4,104 (0.05)</td>
</tr>
<tr>
<td>Falls, non-traumatic</td>
<td>212 (0.01)</td>
<td>342 (0.02)</td>
<td>394 (0.03)</td>
<td>325 (0.02)</td>
<td>1,521 (0.13)</td>
<td>3,594 (0.04)</td>
</tr>
<tr>
<td>Nervous system diseases</td>
<td>678 (0.03)</td>
<td>699 (0.03)</td>
<td>683 (0.04)</td>
<td>598 (0.05)</td>
<td>717 (0.06)</td>
<td>3,375 (0.04)</td>
</tr>
<tr>
<td>Fatigue</td>
<td>452 (0.02)</td>
<td>574 (0.03)</td>
<td>679 (0.04)</td>
<td>658 (0.05)</td>
<td>767 (0.07)</td>
<td>3,130 (0.04)</td>
</tr>
<tr>
<td>Sleep problems</td>
<td>384 (0.02)</td>
<td>382 (0.02)</td>
<td>479 (0.03)</td>
<td>591 (0.05)</td>
<td>855 (0.07)</td>
<td>2,691 (0.03)</td>
</tr>
<tr>
<td>Lumps</td>
<td>624 (0.03)</td>
<td>474 (0.02)</td>
<td>395 (0.02)</td>
<td>301 (0.02)</td>
<td>337 (0.03)</td>
<td>2,131 (0.02)</td>
</tr>
<tr>
<td>Immune system diseases</td>
<td>656 (0.03)</td>
<td>487 (0.02)</td>
<td>385 (0.02)</td>
<td>314 (0.02)</td>
<td>250 (0.02)</td>
<td>2,092 (0.02)</td>
</tr>
<tr>
<td>Missing value</td>
<td>2 (0.00)</td>
<td>2 (0.00)</td>
<td>2 (0.00)</td>
<td>5 (0.00)</td>
<td>1 (0.00)</td>
<td>12 (0.00)</td>
</tr>
<tr>
<td>Total</td>
<td>89,316 (3.75)</td>
<td>84,836 (4.07)</td>
<td>81,839 (4.67)</td>
<td>71,641 (5.28)</td>
<td>75,327 (6.43)</td>
<td>402,939 (4.64)</td>
</tr>
</tbody>
</table>
Overall, of the symptom calls \((n = 361,510)\), over 32% were categorised as Priority 1 \((n = 116,258)\), 39% as Priority 2 \((n = 140,901)\) and 29% as Priority 3. A different pattern was observed in the medicine enquiry calls \((n = 11,797)\), with a lower proportion being categorised as Priority 1 \((n = 2,715, 23\%)\), 66% categorised as Priority 2 \((n = 7,737)\) and only 11% \((n = 1,345)\) as Priority 3. The pattern for the dental calls \((n = 15,364)\) was different again, with more than half of the dental calls being assessed as Priority 3, whereas only 5% were Priority 1 and 44% were Priority 2. Of the calls for health information \((n = 3,825)\), 14% were classified as Priority 1 \((n = 550)\), 19% as Priority 2 \((n = 734)\) and 27% were assessed as Priority 3 and 39% as other (e.g. a quick call that could be answered by front-end staff).

**Outcome of calls**

Overall, the largest category was the person being advised to see their GP, PCS or dentist on the same day \((n = 112,778, 28\%)\), followed by home care \((n = 102,406, 25.4\%)\) and being advised to see their GP, PCS or dentist, either routinely \((n = 61,419, 15.2\%)\) or urgently \((n = 59,154, 14.7\%)\). The volume of calls being referred to 999 \((n = 27,612, 6.9\%)\), A&E \((n = 21,650, 5.4\%)\) and community services \((n = 7,931, 2\%)\) was relatively small. As shown in Figure 2, the pattern of the rate of the calls across the age groups was similar, with the call rate increasing gradually with age group and reaching a peak in the 85 and over age group. The difference in the rate of the calls across the age groups was relatively clear in the calls being referred to an urgent healthcare service (i.e. GP same day, GP urgent and 999), with the higher rate of the calls concerning people aged 85 and over years. For the calls being referred to a less urgent (e.g. GP routine) or non-urgent healthcare service (e.g. home care), the difference in the rate of the calls across the age groups was small.

**Discussion**

Previous studies have showed that NHS Direct is used less by older people than by other age groups [5, 6]. This is the first study to describe the pattern of older people’s use of NHS Direct throughout England and Wales. During the study period, the estimated proportion of people aged 65 years and over was approximately 16% of the England and Wales population [9], but accounts for only 7.2% of service use [10]. The study shows that older people use the service mainly for actual symptoms, usually with some level of urgency and that use of the service increases with age, with a higher use among women than men. Given older people generally have higher demands on health care [3], their underuse of the service may reflect an unwillingness to seek healthcare advice using the telephone but when they do use the service, it appears that they use it for specific types of problems (e.g. pain, digestive problems).

**Characteristics of calls**

The call pattern across the age groups shows how older people’s demand for healthcare increased gradually with age, and this is consistent with the increasing morbidity rate in older people [3]. Although the rate of calls for dental problems decreased with age, this may be partly attributed to the higher proportion of tooth loss in the UK older population, which increases from 20% in the 55–64 age group to 58% in the 75 and over age group [11]: people who have fewer teeth or wear dentures are likely to have relatively fewer dental problems. It is also likely that older people may treat some dental symptoms (e.g. tooth loss) as a part of natural ageing process and therefore not seek healthcare [12], and would attend a dentist if necessary.

**Reasons to call and outcome of calls**

The pattern of the reasons for calls reflects the health problems for which older people require support through NHS Direct. These are mainly related to pain, digestive system, respiratory tract and wounds and injuries. Although the calls for falls, which have a high incidence in older people [13], were noticeably low in volume (i.e. <1% of the total calls), this may be because older people choose to call 999 straightaway since it may result in a serious injury [14], or may be minor and not require any treatment. As the

![Figure 2. Rate of calls per person per annum according to age group and outcome group.](image)
majority of the calls for symptoms were categorised as Priority 1 or 2 (i.e. to be clinically assessed within 20 or 60 min), this supports previous findings [7] that older people prefer not to bother other services when they are ill, but when they do they are using it for more severe conditions.

Differences in use of NHS Direct between men and women

There are notable differences in use of NHS Direct between older men and older women in our study. First, the greater use of the service made by women is similar to general use of NHS Direct by all age groups [4, 5] and to the similar service in New Zealand [15]. The increased utilisation by older women in the younger age groups reflects greater long-term health problems among women and a greater likelihood to seek help/advice among women [16]. The reduction in this differential with increasing age groups is an indication of the increasing health problems among men who survive into advanced old age.

Second, the finding that older men consulted NHS Direct more than older women about urogenital problems was unexpected given the lower incidence of urogenital diseases and dental problems among older men: approximately 20% of older people in the UK have experienced urinary tract infections, in which the ratio of men to women is 1:3 [17]. A similar pattern was observed for dental problems, and may be because women have fewer natural teeth than men and higher levels of edentulism [12].

Third, although there was higher use of NHS Direct in women than men, women were more frequently given advice for self-care or referred to a non-urgent health service (e.g. GP routine) than men while the difference between men and women being refereed to an urgent health service (e.g. 999) was very small. This may be because women were more likely to identify symptoms of illness and to request advice about a health problem at an earlier stage than were men [18] and so their symptoms consulted were less severe. Conversely, men may find it difficult to express worries about their health problems and tend to not seek help until an illness has progressed [19]. The results may also account for the high use of ambulance emergency services by men [20].

Limitations of the study

Several issues merit consideration. First, we used the call, rather than caller, as the unit of analysis because data are collected per call and relate to the person the call is about, not necessarily the actual caller. It may be that individuals make more than one call to NHS Direct per year; therefore the rate of persons that calls are made about is likely to be less than that observed. Second, although experienced call centre nurses recorded the data in this study, human error may lead to mistakes. To minimise this effect, data were checked carefully prior to analysis and 119 miscoded calls were excluded from the study. Third, it was not possible to follow-up on missing or incomplete data. Data on gender are recorded based on the nurse’s judgement and 3% of calls did not include a gender. These calls were included in the non-gender specific analyses as they contained potentially useful information. Fourth, the period of data collection was exactly 12 months to reflect seasonality and the prevalence of infectious diseases (e.g. respiratory viruses) at different times. Finally, the data used to calculate call rates (i.e. 2008 General Practice registered population) are available in 5-year age bands only until those aged 80–84 years. Those aged 85+ are aggregated into a single group and we were only able to calculate the call rates for the 85+ age group as a whole. This group has a high prevalence of illness/disability [21], and age-related differences within this group may have been masked within our analyses.

Conclusion

The study is the first to examine the characteristics of calls made by, or on behalf of, older people to NHS Direct, since it commenced in 1998. It provides new understanding of usage within this group, and will be useful in planning and developing services to meet the needs of the rapidly increasing older population.

Key points

- During the 1-year study period, 402,959 calls were made to NHS Direct regarding older people (0.046 calls pppa).
- The call rates were higher among women; the gender difference reduced with increasing age.
- Pain, digestive and respiratory problems and wounds and injuries were the most common reasons for calls.
- Older men were more likely to be referred to an urgent health service than older women.

Conflicts of interest

None declared.

References

Falls-related self-efficacy is independently associated with quality-adjusted life years in older women

JENNIFER C. DAVIS1,2,3, CARLO A. MARRA3,5, TERESA Y. LIU-AMBROSE4

1Centre for Clinical Epidemiology and Evaluation, University of British Columbia, Vancouver, BC, Canada
2Vancouver Coastal Health Research Institute (VCHRI), 7th floor, 828 West 10th Avenue, Vancouver, BC, Canada V5Z 1M9
3Collaboration for Outcomes Research and Evaluation, St Paul’s Hospital, University of British Columbia, 620B 1081 Burrard Street, Vancouver, BC, Canada V6Z 1Y6
4Department of Physical Therapy, University of British Columbia, Vancouver, BC, Canada
5Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, BC, Canada

Address correspondence to: T. Y. Liu-Ambrose. Tel: (+1) 604 875 4111, ext. 69059; Fax: (+1) 604 875 4762. Email: tlambrose@exchange.ubc.ca

Abstract

Background: falls-related self-efficacy is associated with falls, falls-related injury and subsequent functional decline which may lead to poor health-related quality-of-life (HRQL). To our knowledge, no previous studies have examined the


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