Does Australian state location influence MRS practitioners’ access to and use of the internet?

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Abstract The internet is an important information resource used by health practitioners to access the most current health and medical information. In Australia, the public health system is managed and operated independently at state and territory level and this raises the potential for differential access to the internet to exist within workplaces across government boundaries such as Australian states. This paper examines the effect of Australian state on access to and use of the internet by comparing medical radiation science (MRS) workplaces in Queensland and Victoria.

Survey design was used to collect data. In 2007, a questionnaire was sent to 1067 Australian MRS practitioners in Victoria and Queensland, with a response rate of 31.1%. The results show that internet access within workplaces varied across and within Australian states. Victorian practitioners in the public sector reported the highest level of internet connectivity within their workplace with 64% of practitioners reporting internet access on all workplace computers compared to 13% of practitioners employed in the public sector in Queensland (P = 0.000). Victorian practitioners in the public sector also reported greater use of the internet (P = 0.000) and valued it higher as a resource for updating their professional knowledge (P = 0.011) than their colleagues in the public sector in Queensland. Approximately one-third of practitioners employed in the private sector in both Queensland and Victoria reported internet access on all computers in their workplace (P = 0.885). There exists a digital divide within MRS workplaces which must be addressed so regardless of state or health sector of employment, practitioners can avail themselves of current health and medical information made available through the internet that supports them in staying up-to-date with the changing knowledge base of their profession.

Keywords: access, internet, medical radiation science, professional learning, lifelong learning

Research

The internet is an important information source used by health practitioners to meet their professional learning needs. Health practitioners use the internet to access a range of information resources including electronic journals,1,2,10 medical databases,3,4,5,7-10 practice guidelines,8,9 and image banks.6 Internet search engines are used by health practitioners to access information on medical disorders,1,8,11 treatment or diagnostic techniques,1,2,6,11 medical product information,1,11 as well as accessing information on professional development activities.1,5,9 Internet based communication tools of e-mail,2,6,7,9 listservs9 and discussion forums8,9 are used by health practitioners to consult with colleagues nationally and internationally. It is not surprising then that health practitioners view electronic media as increasingly important and this is reflected in their increased usage.1,11

While the internet offers many resources that support professional practice, factors limiting health practitioners’ access to the internet have been identified. Recent Australian studies demonstrate that access to the internet in the workplace is not universal among health practitioners with access to the internet affected by size of workplace (small, large),10 type of work environment (teaching, non-teaching),4 geographic location (metropolitan, non-metropolitan),6,10 health sector,6,10 profession4 and area of specialisation within a profession.4 Access restrictions that exist within departments include the use of passwords to restrict access9,12 and lack of time during work hours to search and read information.4,6,9

In Australia, the public health system is managed and operated independently at state and territory level and this raises the potential for differential access to the internet to exist within workplaces across government boundaries such as Australian states. While none of the reviewed Australian literature examined the effect of Australian state on access to the internet, research from overseas has shown that within the public health sector, access to the internet varied across government health boundaries of state13 and health region.14,15 This paper examines the effect of Australian state on access to and use of the internet by comparing Medical Radiation Science (MRS) workplaces in Queensland and Victoria.

Method

In April–May 2007 a four-page questionnaire, a letter describing the purpose of the study, and reply-paid envelope were mailed to 1067 Australian MRS practitioners holding registration with the Medical Radiation Technologists Boards (MRTB) of Victoria and Queensland. The sampling method was a 20% random sample of the Victorian MRTB Register (537 practitioners) and 50% random sample of registrants with addresses publicly available on the Queensland MRTB Register (530 practitioners). Due to funding constraints only one mail out was undertaken.

The questionnaire was developed following a critical review of the literature and interviews with 28 academic and clinical practitioners to establish issues relevant to the MRS profession.16-17 The questionnaire included demographic information and questions
related to internet access within the workplace and use of the internet for updating professional knowledge. Questionnaire data were entered into SPSS 15.0® (Chicago, IL, USA) and descriptive and inferential statistics were used to analyse these data. Percentages were used to describe survey findings. The collected demographic data allowed cross tabulations to be performed on geographic health region to determine if associations exist. Differences between groups were examined using $\chi^2$ analysis and when there was an SPSS warning for small cell size Fischer’s exact test was performed. A $P$-value less than 0.05 was the level for statistical significance used throughout the analysis. A number was assigned to each questionnaire as the data was entered into SPSS. This number is used in this paper when comments from questionnaires are reported (Qnumber). This research gained ethics approval from the University of Wollongong.

### Results

Of the initial 1067 surveys mailed to MRS practitioners registered in Victoria or Queensland, 39 were excluded due to incorrect addresses. A total of 320 usable questionnaires were returned from clinical practitioners. After eliminating the excluded surveys of 39 ‘return to sender’ the response rate was 31.1%. This response rate although not high, is greater than other recent surveys of Australian MRS practitioners (14.5–27.6%). The number of responses for individual questions is provided in the results section below. Demographic data analysis showed the percentage of respondents was similar for gender and area of specialisation to the Australian Health and Community Services Labour Force data and respondents were split fairly evenly between the public and private health sector with 50.4% of respondents from Queensland and 55.1% of respondents from Victoria employed in the public sector. A more detailed discussion of the demographics of the respondents is provided elsewhere.

### Access to the internet

Access to the internet in MRS workplaces in the public and private health sectors is shown in Figure 1 and differences in internet access exist both within and across the Australian state boundary. Victorian practitioners in the public sector reported higher levels of internet connectivity within their workplace than

### Table 1: MRS practitioners’ ease of access to the internet within the public and private health sectors in Queensland and Victoria.

<table>
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<tr>
<th></th>
<th>Very easy</th>
<th>Not easy</th>
<th>No access</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Public sector</strong></td>
<td></td>
<td></td>
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<tr>
<td>Queensland (n = 85)</td>
<td>17</td>
<td>9</td>
<td>7</td>
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<tr>
<td>Percent</td>
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<tr>
<td>Victoria (n = 102)</td>
<td>76</td>
<td>7</td>
<td>8</td>
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<tr>
<td>Percent</td>
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<tr>
<td><strong>Private sector</strong></td>
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<tr>
<td>Queensland (n = 83)</td>
<td>37</td>
<td>3</td>
<td>22</td>
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<tr>
<td>Percent</td>
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<td>Victoria (n = 83)</td>
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![Figure 1: Computers with internet access in MRS workplaces in the public and private health sectors in Queensland and Victoria.](image-url)
their colleagues in the private sector (Fisher’s exact test = 43.586, \(P = 0.000\)). In Queensland, MRS practitioners in the private sector reported higher levels of access to the internet in their workplace than practitioners in the public sector (Fisher’s exact test = 10.885, \(P = 0.026\)).

Difference in internet access across Australian states was significant for practitioners in the public health sector (Fisher’s exact test = 96.295, \(P = 0.000\)) with 64% of practitioners in Victoria (\(n = 103\)) reporting internet access on all workplace computers compared to 13% of practitioners in Queensland (\(n = 62\)). Approximately half (47%) of Queensland practitioners employed in the public health sector reported internet access was restricted to computers in Offices. Queensland practitioners in the public sector who identified internet access in their workplace as being limited to computers in offices wrote comments on their questionnaire, identifying additional issues that further restricted their access to the internet. Their comments included “Not allowed to use [the internet] though” Q10, “only if recognised site – do not have access to web only govt site” Q59, “Qld Health only” Q151 and “Access is password controlled” Q143.

The reduced physical access to the internet in workplaces in the public sector in Queensland is mirrored in a lower rating for ease of access to the internet in their workplace (Fisher’s exact test = 73,124, \(P = 0.000\)). Nearly half of Queensland practitioners reported they had either no access (20%) or their access to the internet was not easy (26%) compared to just 3% of practitioners in Victoria. The difference in ease of access to the internet undertaken by MRS practitioners employed in the private sector in Queensland (\(n = 64\)) and Victoria (\(n = 80\)) was not significant (\(P = 0.421\)).

Use of the internet

The frequency of internet searches undertaken by MRS practitioners is shown in Figure 2 and differences in frequency of internet searches exist both within and across the Australian state boundary. Victorian practitioners in the public sector, with their higher level of access to the internet reported higher frequency of internet searching than both their Victorian colleagues in the private sector (Fisher’s exact test = 13.148, \(P = 0.010\)) and their Queensland colleagues in the public sector (Fisher’s exact test = 27.878, \(P = 0.000\)). Two-thirds of Victorian practitioners employed in the public sector (\(n = 101\)) reported undertaking internet searches daily or several times a week compared to 26% of public sector practitioners in Queensland (\(n = 66\)). One-quarter of Queensland practitioners employed in the public sector reported never undertaking an internet search to update their professional knowledge compared to 6% of practitioners in Victoria. The difference in frequency of internet searches undertaken by MRS practitioners employed in the private sector in Queensland (\(n = 64\)) and Victoria (\(n = 80\)) was not significant (\(P = 0.421\)).

Value of the internet as a resource for updating professional knowledge

The value MRS practitioners attribute to the internet as a resource for updating their professional knowledge is shown in Figure 3. In the public sector, Victorian practitioners (\(n = 96\)) with their higher level of access to and use of the internet also rated the internet higher in terms of its value as a resource for updating their professional knowledge than their Queensland colleagues (Fisher’s exact test = 12.054, \(P = 0.011\)). In the private sector, the difference in value practitioners attribute to the internet was not significant across Australian states (\(P = 0.653\)).

Discussion

This research shows that differences in access to the internet within MRS workplaces exist both within and across Australian states. In the public health sector difference in access to the internet across state boundaries was statistically significant. Queensland practitioners in the public health system typically have fewer computers with internet access in their workplaces than their Victorian colleagues and in Queensland internet access was com-
Figure 3: Rating of the importance of the internet for updating professional knowledge by Queensland and Victorian MRS practitioners employed in the public and private health sectors. A five-point scale from 1 (very important) to 5 (not important) was used.

Conclusion

The internet offers immediate access to the most current health and medical information and has been identified as an important information source for health practitioners generally and also within the MRS profession. This research shows access to the internet is not uniform across or within Australian states and the internet-enabled information super highway is not readily accessible to many MRS practitioners. This digital divide must be addressed so regardless of state or health sector of employment, MRS practitioners can avail themselves of the internet in MRS workplaces is not uniform across or within Australian states.

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References


