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Editorial

Specialist Digital Libraries – National Resource for Infection Control (NRIC) – Information overload or underload? (www.nric.org.uk)

Not another article to read!

But stop, take a minute to look at this editorial – it could save you time in your busy working day especially if you need to find that particular policy document or guideline that will prove a point to managers about a specific infection control issue or you need to update your local policy on ‘Handwashing’ and want to know what the latest evidence says.

The original nature and content of the site makes NRIC a unique resource, which is becoming rapidly established in the infection prevention and control domain. The vision that the site was for professionals, by professionals continues to be established with a recent facelift, which will order the publications in date order (newest first) and soon enable document submission from the home page to simplify the process.

Promotion of the website is ongoing through conference attendance and publications, but it is often obvious when talking to infection prevention and control specialists that they struggle to keep up to date with guidance, research and policy in this important area and suffer from information ‘overload’ or ‘underload,’ i.e. too much information or difficulty in sourcing information needed. This is where NRIC as a Specialist Digital Library (SDL) can help you.

SDLs are organised collections of carefully edited information on a specialist subject and allow a wide audience of geographically spread users to access large amounts of data with powerful search mechanisms. They are able to deliver instant access to up-to-date information whenever users have access to the internet and to a certain extent they challenge the role of traditional libraries; they do not necessarily replace them, however, because there are still journals and publications that are not freely available on the world wide web.

Like any other web servers the added advantage of SDLs is that evaluation of patterns of use and online search behaviour is possible using web logs to look at key words used, geographical distribution, number of topics/pages and time spent on site.

It is also interesting to note that in 2005 the Chief Executive of the British Library stated “that a trend was underway in the world of publishing: by the year 2020, 40% of UK research monographs will be available in electronic format only, while a further 50% will be produced in both print and digital.

A mere 10% of new titles will be available in print alone by 2020” (British Library, 2005).

In future it will be important that SDLs fulfil the promise of being available 24/7 and provide relevant evidence-based policy, guidance and quality information on the subject they specialise in.

NRIC as an SDL project is funded by the Department of Health (UK) and endorsed by the National electronic Library of Infection (NeLI) (www.neli.org.uk)

The overall aim of both NeLI and NRIC as SDLs is to provide a single access point for relevant-evidence based, policy, guidance and quality information, published within the last five years (where possible) in a timely manner with the key added value of quality appraisal of posted documents, which is conducted in collaboration with major professional societies and expert committees in the UK.

In addition to an online resource, busy professionals require updates on new documents and guidelines to be delivered to them in the most seamless way. To meet this need, NRIC/NeLI has continued to provide an eNewsletter service summarising additions to these portals as well as upcoming conferences. More than 1,800 professionals now subscribe to this very popular service and the number is growing.

In an effort to help with either information overload or underload, i.e. too much information or difficulty in sourcing information needed, it was agreed that National Knowledge Weeks (NKW) and National Knowledge Updates (NKU) may be the way forward.

‘A National Knowledge Week (NKW) or National Knowledge Update (NKU) is simply the presentation of good quality results from an annual evidence update (AEU), relevant Department of Health and NHS public documents plus expert commentaries from an “expert panel.” Sometimes they are tied into national or international events and expert groups/organisations are often asked to contribute or liaise with preparation of the event.’

The first NRIC NKU was approved to coincide with National Infection Control Week, held in October each year. The aim was to identify the best resources/policy and expert comments regarding the prevention and/or control, treatment and care of specific diseases/infections/infection control practice.

It was instigated in liaison with representation from the Infection Control Nurses Association (ICNA) – who were preparing at that time to change the name and the focus of the society to the Infection Prevention Society (IPS) and this provided an excellent opportunity to showcase the change from ICNA to IPS.

National Infection Control Week was first launched in the 80s, before the existence of the internet when online SDLs were not available, and its aim was to encourage infection control professionals to promote events that would help focus all healthcare staff on the importance of infection prevention and control, and highlight new infection control evidence and practice.

Infection Control Week is now an event held every year to highlight the work that staff in local hospitals and community healthcare establishments do all year round, to keep patients and clients who come into contact with healthcare services safe and free from healthcare associated infections such as methicillin resistant *Staphylococcus aureus* and *Clostridium difficile*. It is promoted to varying degrees in healthcare settings nationally and may not always be a priority in busy clinical areas where prevention of healthcare associated infection takes precedence. With this in mind the collaboration between the NRIC and the IPS aimed to highlight ‘National Infection Control Week 2007’ and to assist and encourage infection prevention and control specialists and other

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healthcare staff to use SDLs such as NRIC to provide up-to-date evidence and guidance on which to base educational activities and demonstrate the importance of infection prevention and control in their local primary and secondary care settings.

The NRIC/IPS National Knowledge Update was launched on 14 October 2007 and ran for a week with agreement that the link would be left 'live' until replaced with a 2008 update. During the week, healthcare facilities were encouraged to conduct special educational activities to emphasise adherence to practices that can prevent infections (e.g. proper hand hygiene). NRIC provided a variety of resources for staff to utilise during this week and resources to update the evidence base on which staff base their IC practice. (Details of Infection Control Week 2008 can be found at <http://www.nric.org.uk/IntegratedCRD.nsf/ICWeek?OpenForm>).

Evaluation of the role of the NKU on NRIC was undertaken using web server log analysis for the week 14–20 October to establish whether this approach to knowledge dissemination brought infection prevention and control professionals to the site during this week, and whether they went on to search for other information from NRIC (see Figure 1).

Every time a user accessed (requested) a web page, the web server stored information about the access in a file commonly known as the web server log. There are a number of standard log formats. Typically, the web server log will record information about the time of the access, the IP address of the user, the URL of the web page requested, the outcome of the request (whether it succeeded or not), the size of the data transferred from the server to the user as a result of the request, the web browser used and any identification/cookie details (if the user has to login). Web analyser software, such as Sawmill, was then used to process these web server logs in order to produce

reports showing different statistics such as the number of times pages were accessed (page views) or the number of visitors to the web page.

Very often, we want to have more detailed insight than that provided by the 'standard' reports. In such cases, Sawmill enables us to write specific queries to produce these more detailed reports

Prior to using Sawmill to analyse the web server logs, we have to 'clean' the logs, mainly in order to remove accesses from crawlers. These are accesses made by programs rather than human beings. These crawlers are used by search engines (and spammers) to navigate the world wide web and download as much content as possible. Identifying the 'bad crawlers' is challenging as they try their best to remain undetected. Cleaning the web server logs is an essential step in the analysis process because if we feed rubbish into Sawmill, we get rubbish out.

The web server logs are extremely useful for analysing the performance of a website or for analysing the performance of an online event, as can be seen from the analysis of the Knowledge Week pages.

There was a good deal of interesting information that was extracted, which highlighted an increase not only in visits to the National Infection Control Update web pages but also to other areas of the NRIC SDL. This demonstrated that although the National Infection Control Knowledge Update brought professionals to the site they went on to seek out other infection control information from the SDL.

Evaluation of the National Knowledge Update/National Infection Control Week on NRIC was undertaken using web log data and although limited did provide partial data that NKUs add value to SDLs, such as NRIC, for busy professionals. The initial results are favourable and it would seem the way forward with further evaluation of national knowledge updates/events required (see Figure 2).

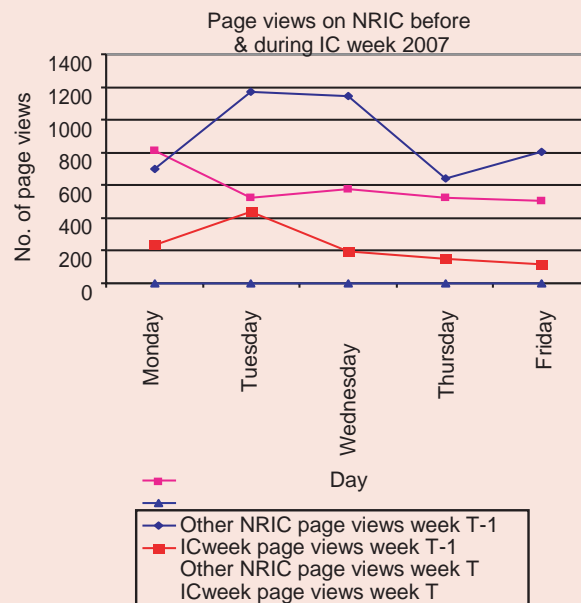


Figure 1. This chart shows the impact that hosting the Infection Control Week had on traffic to the NRIC website. 'IC Week page views' represents accesses to web pages that hosted content created for the IC Week, and 'Other NRIC page views' represents accesses to all the other pages on NRIC (that already existed and were not created specifically for the IC Week). During the IC Week (Week T), we can see that there was a substantial increase in traffic to NRIC and its resources compared to the traffic received one week before the IC Week (Week T-1)



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Reference: 1. Kambal C. Professional Nurse 2004; vol 19, no. 9, pages 515 - 518

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lidocaine are possible in severe injury to the mucosa and absorption may occur; for example,

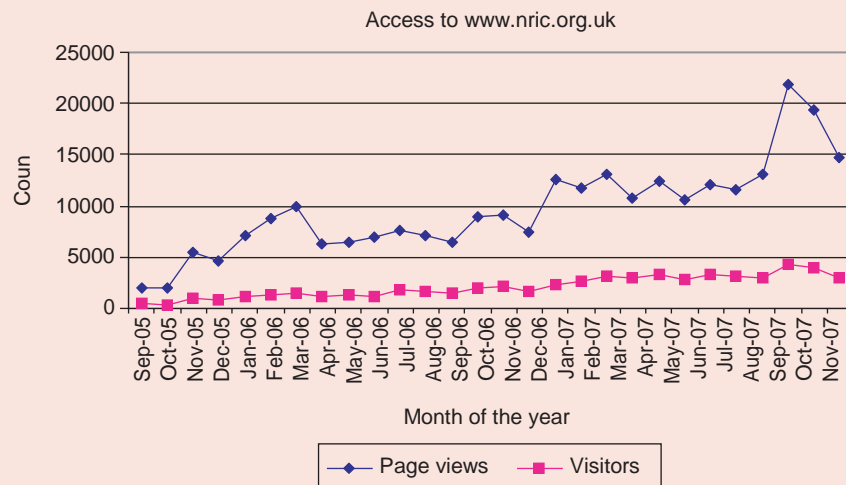


Figure 2. Access to NRIC 2005/07 also highlights the peak during National Infection Control Knowledge Update

NRIC team evaluation of site, post IC NKW, and lessons learned

- Too many references were included in the 2007 Update which made the site difficult to lay out in an easy to search format and also reduced the ‘concise, punchy’ feel we were trying to achieve. In future, knowledge updates will include only the most recent publications and guidance produced during that year
- Liaison with expert organisations and expert ‘soundbites’ add value to the information contained in the SDL but take time
- Not enough publicity meant that infection prevention and control professionals might not have been aware of the event
- User feedback, however, was positive indicating increasing need for evidence-based knowledge updates accessed online.

Conclusions

The National Resource for Infection Control (NRIC), a Specialist Digital Library for infection prevention and control, was launched in May 2005 in response to National Audit Office's (2000, 2004) recommendations for a national infection control manual. There were reservations from infection prevention and control professionals on how useful it would be at its inception, and concerns that it might not fulfil the needs of busy professionals or whether the technology interface would make for ease of access and use. Increasing visitors to the site over the years 2005/06/07 demonstrate its success (see table 1).

NRIC has, over the three years since its launch, proved itself to be a valuable and functional resource helping to draw together the vast amount of infection prevention and control information which at the time of its launch was available only by accessing the websites/libraries of numerous different national and international organisations. It has also helped to disseminate the plethora of new infection prevention and control policy and guidance published on an almost weekly basis in primary, community, independent and secondary

care settings. Feedback in its first year from stakeholders has been positive, constructive and affirmative:

“Looks as if it might be a useful resource and I have sent a link to my local colleagues.” – Infection control nurse, 1 November 2005

“I’ve just had a quick look at your site for the first time and I’m very impressed! I can certainly see that it will be of great help to me and I look forward to seeing its continued development.” – Infection control nurse, 29 September 2005

“Just found this site and it is fabulous. Many thanks” – Anonymous hospital antibiotic pharmacist, 1 September 2005

“Million thanks for developing this site, what a wonderful idea! and what a great layout too. This is marvellous.” – Anonymous, 20 August 2005

“Just to say I am very impressed with your website. It is much appreciated to be able to access relevant literature with ease. Thank you and well done.” – Nurse consultant health protection, Health Protection Agency, 4 August 2005

“I think this site is a great idea as it will prove so useful.” – Infection control nurse, 4 June 2005

Availability in the public domain is free of charge to healthcare professionals and the public, which emphasises the fact that infection prevention and control is everybody's responsibility.

NRIC evaluation and identifying users and their needs

Current evaluation of SDLs tends to focus on how the library is being used rather than the impact it is having on its users and their work.

However a piece of research is presently being undertaken to evaluate the impact of NRIC on user knowledge and attitude, work and decision making.

Understanding user behaviour within the SDL can help in future library development to ensure that NRIC development is best designed to serve the professionals who use it.

Table 1. NRIC usage over the year's 2005/06/07

Year	Hits	Page views	Visitors	Size
2005	24,638	24,032	2,861	617.95 MB
2006	57,073	55,139	7,561	1.91 GB
2007	181,433	163,894	31,157	6.52 GB

National Infection Control Week – 2008 will be highlighted again this year on NRIC with an emphasis on community health care; if you have comments, or material you wish to share with colleagues then please do not wait – get in touch now.

Sue Wiseman

Nurse Consultant Infection Prevention & Control

Department of Health – NRIC project

Email: suewiseman1@yahoo.co.uk

Gawesh Jawaheer, Patty Kostkova,

Gemma Madle

City ehealth Research Centre (CeRC),

City University London

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About the Infection Prevention Society

The Infection Prevention society works together with healthcare colleagues, professional bodies, industry, government agencies and voluntary organisations in the prevention and control of infection. Our main aim is to advance the specialty of infection prevention and control through education, professional development of our members and research. With the continued need to prevent and control existing, re-emerging and new infections the Society is at the forefront of initiatives across the United Kingdom and Eire in both hospital and community settings. Members of the Society are active locally, regionally, nationally and internationally in cross boundary activities that support the quality and clinical governance agenda in providing safe and effective patient care. *The British Journal of Infection Control* is provided as a benefit to members of the Infection Prevention Society.

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