CASE STUDY

Arezzo

Arezzo® guidelines are now in over 1,000 GP practices in New Zealand (90% of GPs). Evidence-based guidance is supporting clinicians at the point of care with more than 2.5 million uses of the guidelines nationwide.

EXECUTIVE SUMMARY

The Best Practice Advocacy Centre is an independent organisation, based in New Zealand, promoting healthcare and interventions that are evidence-based, cost-effective and meet the needs of patients. Elsevier Arezzo has been partnered with BPAC (Best Practice Advocacy Centre) to use Arezzo clinical decision support technology to enhance the care of patients. Arezzo is now used by over 90% of the country’s GPs. To date, Arezzo technology has been integrated with the patient records in over 1,000 GP practices and accessed over two and a half million times.
A national transformation

The Best Practice Advocacy Centre (BPAC) is an independent organisation, based in New Zealand, promoting healthcare interventions that:

- meet the needs of patients
- are evidence-based
- are cost-effective and
- are localised to the New Zealand healthcare context

BPAC has partnered with Elsevier to use the Arezzo clinical decision support technology to enhance the care of the patients in New Zealand. Arezzo is used by 90% of the country’s GPs.

Active clinical decision support

With Arezzo BPAC has produced a web-based system that is designed specifically to support general practice in the management of a patient’s health through screening, risk assessment, management and referral; providing evidence-based recommendations personalised to each patient.

BPAC uses Arezzo to do this by taking existing paper-based guidelines and making them available to GPs as ‘active’ guidelines, thus transforming traditional passive medical content. With active decision support as part of their standard workflow the GP’s ability to monitor clinical situations and provide recommendations based on relevant clinical pathways is significantly enhanced. To date, the Arezzo clinical decision support technology has been integrated with the patient records in over 1,000 GP practices.

Supporting the clinician

One doctor, Dr Jonathan Morton from Radius Medical in Palmerston North, describes the solution: “We started with digital records some years ago but this software takes it to a new level, making it work much smarter, with ultimate benefits to the public. Tools like these are influential in assisting doctors to assess patients’ needs. They also provide invaluable assistance in planning the next course of action for a patient.”
Integration into all Electronic Medical Record systems (EMRs) in New Zealand

The Arezzo technology

The Arezzo clinical decision support technology is used for the design, creation and execution of clinical pathways, guidelines and patient care protocols that present medical professionals with evidence-based advice for each individual patient. For GPs throughout New Zealand the use of Arezzo means that they receive patient-specific recommendations, complete with pros and cons, together with the ability to drill into the evidence, whilst they are seeing their patient. The system has been adopted on a large scale.

- More than 2.5 million uses of the guidelines nationwide by mid-2014
- Implementation in over 1,000 GP practices (90% of GPs)
- National roll-out of key guidelines, such as cardiovascular disease, diabetes, childhood asthma, depression and chronic kidney disease
- Integration into all Electronic Medical Record systems (EMRs) used in New Zealand

Integration with EMRs

New Zealand has five different EMR systems in use in GP practices throughout the country. The Arezzo-based application integrates with these EMR systems so that when any GP accesses the guidelines, the content is presented to them within their own system. This seamless presentation avoids duplication of data entry whilst coupling the recommendations with the EMR system charting, prescribing, referral and order entry capabilities.

The clinician’s pathway through a guideline is customised to each patient’s clinical state. This means that recommendations for management of that patient are individualised, rather than the GP being presented with generic guidance. Any additional information for which a GP is prompted, for example regarding diagnosis and treatment, or indeed variance information, is returned back into the EMR system from Arezzo.

This fully utilises the data collected for each patient and ensures that care and treatment are recommended on the basis of the individual’s clinical history and status.
eReferral system developed using AREZZO®

The Midland eReferral system

BPAC has also used Arezzo to develop a web-based eReferral system in conjunction with the Midland region. The system has the ability to connect securely multiple health providers, irrespective of their current Patient Data Management system, and has been effectively deployed widely across the Midland area. Its scalability has allowed the system to be implemented not only by District Health Board (DHB) Hospital and Community based services, but also by smaller private community health providers and Non-Government Organisations (NGOs). Portability of the system allows clinicians working across the county to access their patient’s referrals in a secure and timely manner before they travel to their clinics in other regions.

The Midland eReferral system, first adopted in Waikato DHB August 2010 after a successful pilot, now supports the five Midland DHBs, making Midland the only region to have a single referral system. The system offers significant benefits to DHBs and other service providers who are utilising the system:

- Time savings: completing and acknowledging the referral, plus less follow-up time required where incomplete information supplied
- Secure auditable transfer of referrals across the region and between various services
- Improved information on the status of the referral and on the referral itself - clinical information provided in a consistent template, rather than in a handwritten, varied form
- A complete picture of the referral load on service providers by regular reporting
- Reply function provides a timely response to referrers on the outcome/status of the referral for some services

The system was developed with high user involvement and has resulted in huge uptake in general practice. Since its introduction, further enhancements have been made which have further improved usability and a sense of ownership of the system has been fostered, by giving General Practices and the other various users visibility of the suggested enhancements they have submitted. Once such enhancement has been the addition of selection functionality based on key words that makes it easy for referrers to see what services are available in their region.

As at August 2014, 500,000 eReferrals have been sent across the Midland DHB and numbers continue to climb.

POSITIVE USER FEEDBACK

Sherida Dennehy, Waikato DHB Community Referral Centre, “The number of eReferrals from GP’s is growing each week, what a difference it has made. You can read them & around 90% of the time all the required info is on them.”

Dr Preetha Varma, Clarence St Medical Centre, “It works beautifully. You get a response straight away from the hospital when they have received the referral. This has been of great concern in the past. I did 3 referrals straight after the training.”
AREZZO® clinical decision support transforming patient care

Local example

The MidCentral District Health Board (DHB) in New Zealand, which serves around 160,000 people, uses the Arezzo clinical decision support solution to conduct a thorough assessment of patients’ risk of heart disease. They see the solution as having the potential to save lives. A spokesman for MidCentral DHB, Dr Warwick Davenport, commented that:

“40% of New Zealand deaths are related to cardiovascular problems. One third of the population meets the criteria for requiring a cardiovascular risk assessment and this tool allows health professionals to carry this out efficiently, thoroughly and to a high standard.”

To conduct a cardiovascular risk assessment, health practitioners ask a series of questions, perform a quick and simple physical examination and enter the results of a blood test into the software. The advantage of using the Arezzo clinical decision support solution ensures:

- Patient assessments are streamlined
- Guidance and support are provided for the GP on possible next steps, should further action be required
- The GP is supported in offering the best evidence-based treatment for the patient, based on clinical guidelines
- Tools are provided to help streamline the transition between primary and secondary health care
- Where the GP decides on further referral to a specialist or other health professional, a referral letter can be generated with just a few clicks of the mouse
- The referral letter can be sent via a secure electronic link to the relevant provider
- The process of comprehensive assessment by the GP and further referral becomes more efficient

RESULTS

An example of the positive results emerging from the use of the Arezzo-based application is with childhood asthma, experienced by an unusually high 20% of children in New Zealand. A cohort of 378 children aged under 15 were assessed with the application. Measuring child-years at risk there were an average of 25.5 hospitalisations per 100 child-years prior to their first assessment with the module; following assessment this fell by just over 50% to an average of 12.1 hospitalisations per 100 child-years. (Source: Best Practice Advocacy, New Zealand.)
The Arezzo advantage
The Arezzo technology has been supporting best practice in the medicine since 1999. In April 2012 developers of the technology received the Queen’s Award for Enterprise in Innovation for work done in developing and deploying decision support systems for healthcare.

About Elsevier
Elsevier is a world-leading provider of information solutions that enhance the performance of science, health, and technology professionals, empowering them to make better decisions, deliver better care, and sometimes make groundbreaking discoveries that advance the boundaries of knowledge and human progress. Elsevier provides web-based, digital solutions — among them ScienceDirect, Scopus, Elsevier Research Intelligence and ClinicalKey — and publishes more than 2,500 journals, including The Lancet and Cell, and more than 33,000 book titles, including a number of iconic reference works. Elsevier is part of RELX Group plc, a world-leading provider of information solutions for professional customers across industries.