

Is an indexed database publications database for the Asia Pacific region feasible?

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Abstract: The need to share information and raise the profile of family medicine and general practice in the Asia Pacific can be addressed by *Asia Pacific Family Medicine* journal and an indexed database of Asia Pacific publications and reports, accessible via the Internet. A collaborative project to develop and maintain the Asia Pacific Indexed Database (APID) will facilitate ongoing international collaboration and the sharing of information among Asia Pacific countries and, if implemented within the Wonca (World) Internet-based resource and portal, the world. The technical design, management and organization policies and strategies will be user focused and guided by the needs of member countries. The APID will add value to member countries' publication databases by providing international peer review, creating an English language version where the original publication is in the local language, and making them available to a wider audience. Index terms will be derived from Medical Subject Headings and International Classification of Primary Care Version 2. Viable and sustainable partnerships among publishers, pharmaceutical companies, medical equipment suppliers, information and communication technology companies, and universities are common strategies. These partnerships often require long term sponsors such as governments, commercial organizations or aid agencies such as World Health Organization, World Bank and Reuters. The Wonca (Asia Pacific) indexed database of publications and reports is a symbolic, yet practical, concept with the potential to facilitate a convergence of the activities and expertise of the Asia Pacific region to coordinate and enhance multicultural family medicine research, education and care.

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Background – how did we get started?

Most family physicians (term used to include general practitioners) are not aware of the variety of medical education, research and informatics activities undertaken in the countries of the Asia Pacific region. Only two of the 17 journals of Family Medicine in the Asia Pacific region are indexed to commonly used journal resources, such as Medline. This need to share information about projects, publications and to raise the profile of family medicine and informatics in the

Asia Pacific region is recognized by Wonca and The Asia Pacific Association for Medical Informatics (APAMI).¹ The development of an indexed database of Asia Pacific publications and other reports is a matter of priority. It will assist the dissemination of information provided through the *Asia Pacific Family Medicine* journal.

At an organizational and strategic level, a collaborative project to develop and maintain an indexed database of publications and reports will facilitate ongoing international collaboration and the sharing and dissemination of information among Wonca (Asia Pacific) member countries. It will make more efficient use of existing infrastructure and inform the world about Asia Pacific initiatives and publications. Finally, it will encourage and inform multinational collaborative research and education projects in the Asia Pacific region.

This work is planned to occur in tandem with, and complement the proposal by Wonca (World) to de-

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velop a comprehensive Internet-based resource and portal, including a database of individuals involved in general practice and family medicine research and education.

Support for the indexed database was obtained at the Wonca (Asia Pacific) Council at the Taipei meeting in 1999. A number of member countries expressed interest to host the Asia Pacific index. Member countries were encouraged to seek support from their national governments and relevant agencies to work on their own databases. The Informatics Working Party will seek support from regional and international agencies for the indexed data base development.

The Wonca Asia Pacific listserv (woncaap@unimelb.edu.au) was used as the communication forum for the work on this project. An Informatics Working Group workshop to sort out details and agree on a common architecture and development pathways forward was organized for all interested family physicians at the Wonca Asia Pacific regional conference in Christchurch, New Zealand.

What are we aiming for?

The aim is to develop and maintain an indexed database of family practice and informatics publications and education and research programs/projects in the Asia Pacific region, focusing on those that are not indexed to the international health databases. It is envisaged that the indexed database for the Asia Pacific region will contain original papers, reviews, cases, continuing education articles such as quizzes, research and development activities in progress, educational resources, academic activities such as fellowships and sabbaticals, and medico-political reports relevant to the region. This database will be established on an existing Internet site, which will link existing databases of member countries of Wonca (Asia Pacific) and APAMI. This database can, and will, meet the current needs of the membership of Wonca and APAMI, academics, clinicians and consumers interested in the quality of care, research, education and training in the Asia Pacific region. It is envisaged that the contents will primarily be in the English language, with a parallel development process to have a version of the same database in as many languages of the Asia Pacific region as possible.

What do we need and how do we get there?

Availability over the Internet means that the indexed database will sit on a powerful computer (*the server*) that is connected to the Internet. Family Physicians will use an Internet browser (*e.g. Internet Explorer or Netscape*) to obtain information from or enter infor-

mation into the indexed database. Sometimes selected information from the main database may be stored in temporary databases known as 'warehouses' to speed access or tailor the information to the user. At the front end, this communication usually happen through specially designed on-screen forms or windows. At the back end, the logic and data flow from one database to another via a *common gateway interface*.

The technical design and implementation of the indexed database will be standards-based; the management and organization policies and strategies will be user-focused and guided by the needs and available databases of the member countries.

1. Technical requirements

The technical options available to manage any collection of objects (e.g. documents, pictures etc) can range from very simple to complex relational databases, including:

1. A number of Internet pages (also called *html* pages).
2. A simple spreadsheet such as the Excel program Microsoft Office.
3. A document-based database management system, such as Filemaker Pro.
4. A relational database management system, such as Microsoft SQL Server.
5. An object-oriented database management system, such as the TopClass curriculum delivery system.²

Options 1 and 2 are adequate for small and simple databases. They, especially Option 1, does not allow for automated indexing and sophisticated searching capabilities. Option 3 is a good compromise to manage documents; Filemaker Pro also allows interoperability across the IBM PC and Macintosh platforms. Options 4 and 5 are commercial strength solutions and expensive. An example of a searchable Internet-based relational databases is that, that available at the BMJ web site. Object-oriented databases are relatively rare at present and limited to academic and large organizations with particular functional requirements.²

The three main architectural standards used in the development of Internet-based object-oriented databases include common object request broker architecture (CORBA), Sun Systems and Microsoft. Standard languages used include Java, C++ and Visual Basic. Standard formats for transfer of information used include hypertext (*http*) and file transfer protocol (*ftp*).

Considering the short- and long-term organizational requirements of Wonca (Asia Pacific), especially now that the *Asia Pacific Family Medicine* journal has been launched, a commercial strength. A relational database management system, such as Microsoft SQL Server would be adequate to meet the functional specification requirements.

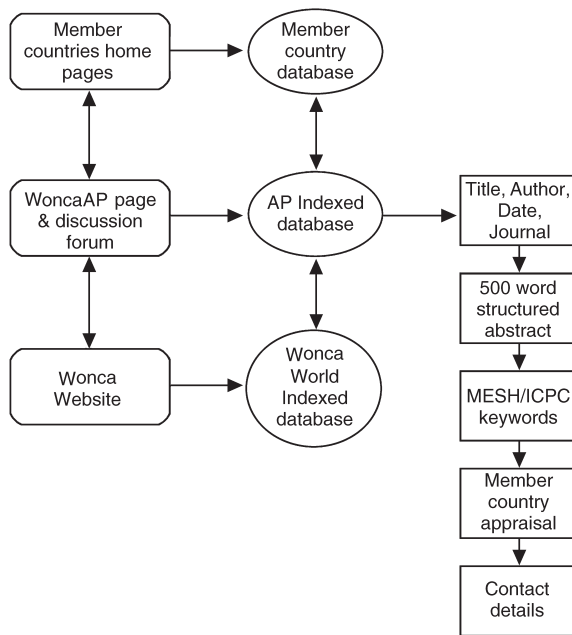


Figure 1 Relationships and content of Asia-Pacific indexed database. AP, Asia Pacific; MESH/ICPC, medical subject headings/International Classification of Primary Care; WoncaAP, Wonca Asia Pacific.

2. Organizational

The functional and structural requirements of the Asia Pacific Index will be guided by current specifications of the available databases of the member countries. The Asia Pacific Index will, as far as possible, be compatible with and compliant to international technical and messaging standards. The database will be accessible via the Internet by authorized stakeholders.

Having met criteria for inclusion, abstracts of relevant publications and reports will be collated and indexed, using keywords from Medical Subject Headings (MeSH) and International Classification of Primary Care Version 2 (ICPC2). Bilingual keywords will be used where indicated or requested. Each country will continue to manage and maintain its own database content, quality and resources. The Asia Pacific indexed database will add value to these local databases by providing a peer-reviewed process, creating an English language version where the original paper is in the local language, and making them available to a wider audience.

An international management committee, representing member countries of Wonca (Asia Pacific), will coordinate and maintain the database and facilitate its accessibility. This committee will have to work closely with the Editorial Board of *Asia Pacific Family Medicine*. Governance policies and protocols will be established. The database management will be rotated to share

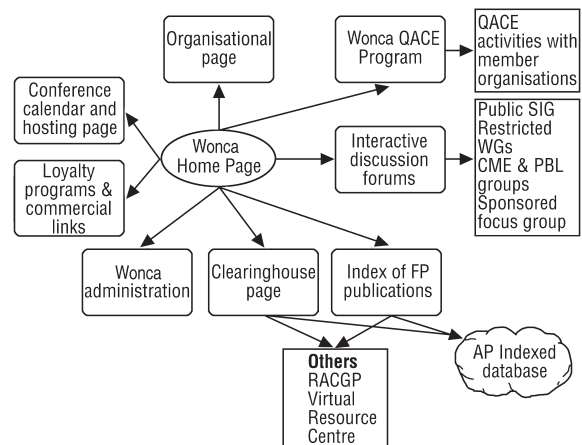


Figure 2 Virtual relationships with Wonca (World) and member countries. AP, Asia Pacific; CME, continuing medical education; FP, family physician; PBL, problem based learning; QACE, quality assurance and continuing education; RACGP, Royal Australian College of General Practitioners; SIG, special interest group; WG, working groups.

skills around the region. Mirror databases, where a replica of the original indexed database is hosted on another computer e.g. in another member country, will be part of the risk management strategy.

The member countries will have full control over their own information. English will be the common language. Translation will be into English if the original is in the member country's language and vice versa. An international peer-review board will monitor the quality of the content and accuracy of indexing.

Figure 1 shows the proposed relationships and content of the database.

3. Virtual relationships with Wonca (World) and member countries

Figure 2 shows the virtual relationships of the Asia Pacific Indexed Database with the wider Wonca (World) communities and member countries. Wonca (World) has ambitious plans to develop a comprehensive database and Internet-based portal for health information relevant to family practitioners around the world. While ambitious, the task is feasible as a number of Wonca member countries have already made significant progress in the development of these Internet-based information resources.

Challenges ahead

A decision has to be made as to where to base the initial work. Australia, Hong Kong, Japan, Malaysia, Singapore, South Korea and Taiwan are the likely member countries with an information and communi-

cation technology infrastructure to adequately support the database.³ The requirement for English to be the common language makes it a little difficult for Japan, South Korea and Taiwan. If experience with the indexed publications is a key criterion, then Australia would probably be the country of choice. However, the organization specifications are to rotate the management around the region as part of the collaborative efforts to share the resources and expertise around the region. Thus, the use of mirror and bilingual databases are important strategies.

The biggest question is sustainability. Member countries have not prioritized this work within their general and family practice organizations or their governments. Efforts to engage their commercial sector via Wonca (World) and regionally have not been particularly successful to date. A long term sponsor, public or private, is needed. Public sector support means government, directly or indirectly via the professional organization. National or international aid agencies are potential sponsors, including organizations such as World Health Organization, World Bank and Reuters.

A more viable and sustainable strategy would be partnerships with commercial bodies with a stake in our activities – publishers, pharmaceutical companies, medical equipment suppliers, information and communication technology companies, etc. In this context,

there are opportunities for a partnership with publishing companies.

Many universities in the Asia Pacific region are part of international consortia, all of which have a strong emphasis on maintaining a strong Internet presence. An example is Universitas 21.⁴ These consortia would see real and potential value in an Asia Pacific Indexed Database of publications and activities. There are also marketing opportunities for advertising of services and educational courses.

Conclusion

A Wonca (Asia Pacific) project to develop and maintain an indexed database of Asia Pacific family medicine publications and reports is a symbolic, yet practical, project with the potential to facilitate ongoing international collaboration in our region and facilitate more efficient use of our existing information and communication infrastructure. The indexed database will also inform the world about Asia Pacific initiatives. The most important impact of the indexed database will be a convergence of the activities and expertise of the Asia Pacific region to coordinate and enhance family medicine research and education and enhance family practice.

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