A Health Literacy and Interpreting tool for remote Australian Aboriginal contexts

Building shared understandings of body systems, and agreed ways forward for health and treatment.

What are we building?
We are building an iPad or generic custom-designed touch screen application that shows interactive biomedical images, animations and models.

Who is it for?
The application will be used as part of a project www.cdu.edu.au/hl that will be implemented in a complex health services delivery environment where there is a diversity of languages with little English spoken locally and a mounting epidemic of preventable chronic disease, it is for;

- people living in nine remote Aboriginal communities and many homeland centers, in northeast Arnhem Land, Northern Territory, Australia
- a large range of professionals in various roles, mostly speaking English only
- local aboriginal health staff undertrained and often marginalised

How is it unique?
We propose that this application will differ from other similar applications in that it will

- not contain any embedded health messages (ie not didactic)
- not privilege the biomedical model of the human body
- not contain any microscopic imagery
- be non-sequential (ie have few embedded sequences, and depend upon users in conversation for its navigational logic)
- focus first on aspects of the healthy body and pathology leading up to chronic disease and treatment

In our theoretical starting point

- we take seriously Aboriginal service users’ knowledge and understandings of their own bodies
- we work from an Aboriginal definition of communication as building shared understandings rather than a western definition based on the transfer of information from one to another
- we believe that present attempts to improve health communication and health literacy in remote communities utilise a ‘top-down’ approach which blames the
client for irresponsible life choices and ways, and service providers for poor policy implementation

- we believe that health literacy resources that contain health messages seldom promote the sorts of conversations which promote a productive ongoing collaboration between health professionals, service users and their families.

Our Strategy

The application, which does not teach or even presume biomedical certainties, will be introduced into the health literacy and interpreting practices in various communities. It is a conversation piece. Its ambiguity allows for the top-down and bottom-up practices to work together in new ways. It allows for a ‘both-ways’ (re)negotiation of the categories through which health professionals and service users work together. Our aim would be to use knowledge work around the digital object to examine, unsettle and interrupt received notions of health, disease and treatment on both sides of the health delivery practice to create new understandings, engagement and commitments.

Three stages

- Development of a proof of concept by January 2011. Prepared iPads (or equivalent) will be distributed and trialled in a large range of community contexts and further specifications will be developed.
- A second version will be produced by July 2011 on the basis of evaluation. Features will also be developed to support health worker and interpreter training.
- Depending upon its success, further funding will be sought to extend the functionality. These extensions might be towards the use and effect of medicines, development of special features for interpreter education and training, explanation of surgical intervention for chronic diseases (eg the AV fistula).

Product (Application proof of concept) requirements

It is proposed to develop an integrated interactive biomedical animation (text- and voice-free) application of the human body that will facilitate (generate) communication and the building of shared understandings between Aboriginal service users, families and health care personnel in relation to chronic conditions, and their prevention, causes and management. The Healthy Breathing and Heart project at CDU included the
development of a Flash-based proof of concept that will inform this project. See www.cdu.edu.au/centres/yaci/im

In the first version we will focus on animated and zoomable representations of Healthy Body Systems;

• Skeletal and Skin background
• Respiratory system overlay
• Circulatory system overlay
• Ear anatomy (zoom in)
• Kidneys
• Pancreas

In addition, some representations of pathology will be developed. The list to be explored and the key aspects of the representation will be confirmed. These may include:

• Chronic Obstructive Pulmonary Disease (animated) overlay
• Otitis media ‘glue ear’ (zoom in)
• Diseased kidneys and resulting problems (zoom)
• Problems arising from diabetes (zoom)
• Some representations of surgical interventions:
• Coronary angioplasty (animated) overlay
• Renal fistula preparation.

Features and functions overview

• generic representations/models of body systems
• scalable Vector Graphics or high quality, low count polygon models
• separate and integrated, stylised graphic biomedical representation and mapping of the body and body systems that can be interacted with, ie zoom, rotate, drag, toggle visibility and adjust transparency
• visual representations relating to pathology
• interactive and intuitive
• orientation and contextualisation (simultaneous Macro and Micro views)
• multiple layers and zoomable views – whole body, body systems and organ function but not microscopic or molecular
• touchscreens, portable, strong
• facilitates communication and shared understanding (i.e. non-didactic, generative),
• not sequential
• aesthetically appropriate and pleasing

Extensibility and future development considerations

It is envisaged that the product will have an ongoing life and its extensibility will need to be considered from the outset and will need to allow for

• sequences to demonstrate disease and disease processes (after negotiation at client level the needs deriving from collaborative work on 'client journeys') eg legs diabetes sufferers; looking after your legs
• training versions (eg for teaching and testing English and 'language' names for key organs and process in chronic disease care
• ability to add other systems, organs; (eg urinary, pancreatic)
• printed version of some of the screen representations

We aim to use the digital resource in a number of manifestations including derived leaflets, posters etc to
• develop a health literacy 'brand' based on the product and its derivatives that will promote general and widespread discussion about literacy and interpreting among service providers and users
• instigate and continue the conversations and interpreting work at all levels of service delivery
• raise community awareness of the availability of health literacy support and interpreting work.
• draw attention to the availability of interpreters and the need to use them
• help ‘fly-in’ staff see the use of interpreters and health literacy work as integrated throughout the many practices of health care and interpreting
• integrating the work of training of Aboriginal health staff (HCWs, interpreters etc) with their community-based professional practice.

**Budgets, Licensing, IP**
The project budget for the product development will include items for an initial development and design meeting, and a negotiated cost for ongoing development and delivery. One of the outcomes of the project will be to prepare a plan for the future development of the product. This research will include the negotiation of a formal development team, license agreements, and revenue, distribution and upgrade pathway arrangements.

**Precedents**
The following links are examples of electronic biomedical learning tools that contain messages, unlike this project.

Visible Body by Argosy Publishing [www.visiblebody.com](http://www.visiblebody.com)

3D4 Medical [www.3d4medical.com](http://www.3d4medical.com)

Primal Pictures [http://www.primalpictures.com](http://www.primalpictures.com)