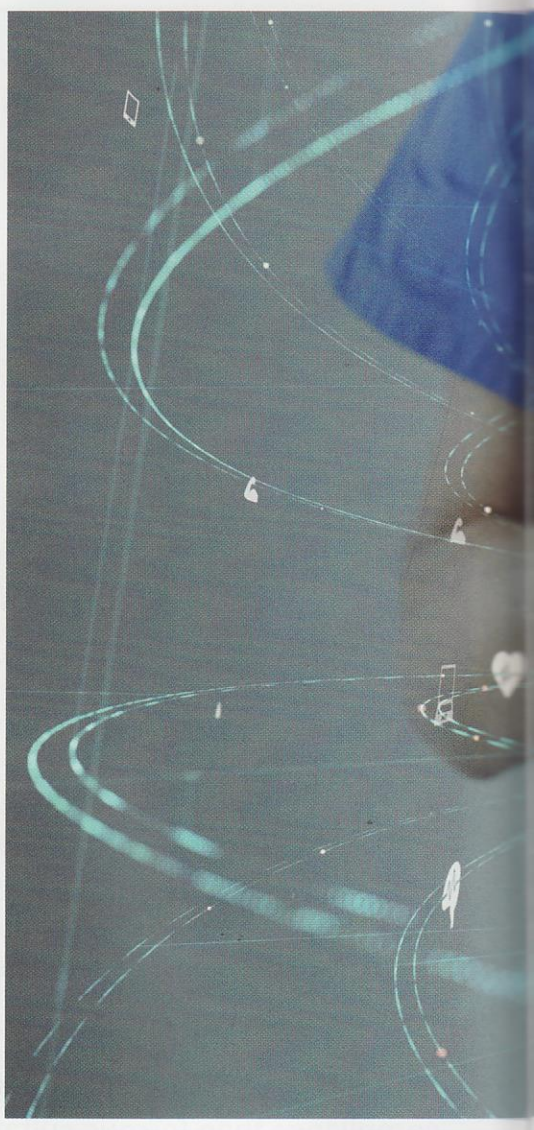
Towards better nursing communication through emerging technologies

By Philip Shields



BACKGROUND

Underpinning nursing informatics research is the notion that nurses must be involved in the development and testing of emerging technologies, not just be passive users of 'black boxes'.

More importantly, universities and governments must consider skills development that prepares nurses for digital roles that may not have been conceived today but which will enable nurses to confidently pursue emerging career opportunities in the future (NIA 2019).

A good deal of nursing informatics research is about communication and how we effectively talk to others. A general theme through the literature is the notion of 'making nursing visible' through communication (Shields. 2018), (Butler et al. 2006), (Wolf 1999). An overused 'frankenword' in the literature is 'interoperability', which simply means, 'the ability to talk to dissimilar systems'.

Systems may be human or machine. Human 'systems' may be patients, families or administrators. Machine systems may be computers which transfer patient details to another hospital. A major thrust to assist in 'interoperability' is to standardise terminology. That is, we cannot be understood by others if we don't use the same language. One way of facilitating 'interoperability' and making nursing visible is through a classification of standard terms.

WHAT IS THE INTERNATIONAL CLASSIFICATION OF NURSING PRACTICE (ICNP)?

The ICNP is an agreed upon classification of standard nursing terms on the Web. The World Health Organization and the International Council of Nurses (ICN) created the ICNP in 1992. The terms describe concepts which enable nurses to describe and report their practice in a consistent way. Consistency helps to ensure that nursing is visible in multidisciplinary settings, thereby future-proofing the profession (ICNP 2017).

The ICNP provides consistency because it is a framework for sharing data about nursing and for comparing nursing practice across disciplines. Standardised terms are used to support care and effective decision-making, and to inform nursing education and health policy. Finally, the ICNP is an international standard that facilitates the description and comparison of nursing practice locally, regionally, nationally and internationally (ICNP 2017).

HOW IS THE ICNP CONSTRUCTED?

The ICNP is an 'ontology' which means the terms are arranged in an 'axis' with a parent term (class) at the top and all the terms under it are related to it in some way. This hierarchical arrangement makes it easier to search for a specific term.

HOW CAN I USE THE ICNP IN DAY TO DAY PRACTICE?

The ICN provides a handy ICNP browser. The browser displays all of the terms in alphabetical order. The browser may be useful for obtaining the 'standardised' term as a replacement for one in your notes or reports. In doing so, your writing is aligned to a global standard. The browser includes:

- The axis name
- The code of the term (for machine use)
- The term's parents. Parents are related terms that are above the current term in the axis.

THE BIOPORTAL

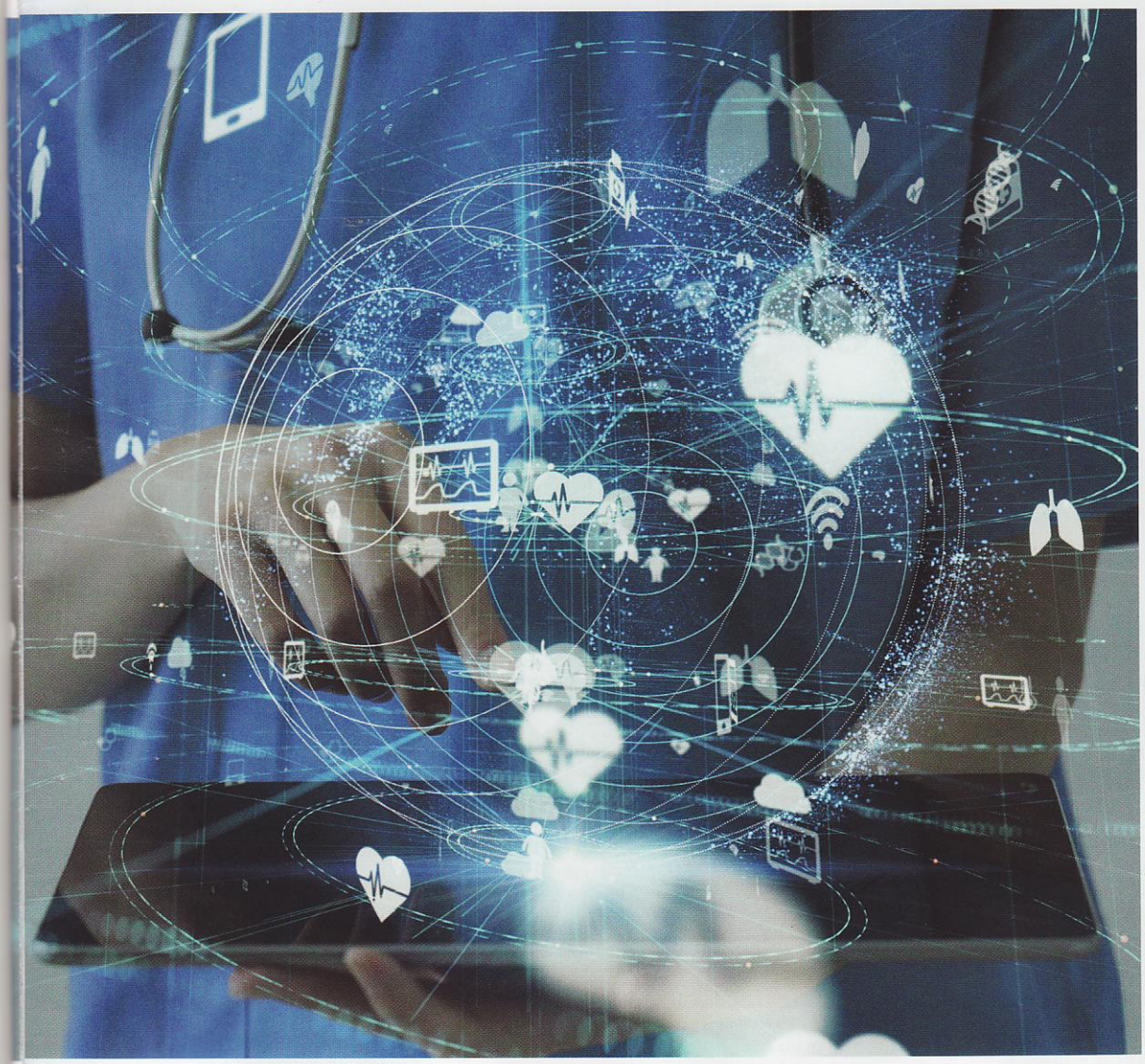
The ICNP also resides in Bioportal. Bioportal is the world's largest repository of medical ontologies. It contains 800+ ontologies including the Systematised Nomenclature of Medicine (SNOMED), Logical Observation Identifier Names and Codes (LOINC) and Human Disease Ontology (DOID). Everything in Bioportal is arranged like an ontology with terms at the top of an axis (I find this easier to use). To use an ontology in Bioportal, navigate to your preferred ontology then select 'classes' which will show all of the top terms. It is a simple matter to search or click any axis under the term for related terms.

THE FUTURE

Manually searching for a term is interesting but may become tedious after a while. Nurse developers are constructing a prototype web application that looks at electronic nursing notes and suggests standardised words from the ICNP in real time. The prototype works as a proof of concept and you can try it out at **ontohealth.com.au** go to demonstrations => ICNP text suggester. The application will supply a bit of text or you can cut and paste your own text in the text area.

Author

Philip Shields RN PhD is a Nurse Informatics researcher at Victoria University



References

Butler, M., Treacy, M., Scott, A., Hyde, A., Mac Neela, P., Irving, K., Drennan, J. 2006. Towards a nursing minimum data set for Ireland: making Irish nursing visible. *Journal of Advanced Nursing*, 55, 364-375. Retrieved from o-search.ebscohost.com.library.vu.edu.au/login.aspx?direct=true&db=c8h&AN=20092653 11&site=ehost-live Publisher URL: www.cinahl.com/cgi-bin/refsvc?jid=203&accno=2009265311

ICNP. 2013. International Classification of Nursing Practice Ontology (Vol. 2013). Retrieved from bioportal.bioontology.org/ontologies/ICNP

ICNP. 2017. Transforming Nursing Practice Worldwide. Retrieved December 4, 2019, from Benefits of ICNP icn.ch/sites/default/files/inline-files/Benefits of ICNP - ICNP and RNAO - Transforming Nursing Practice.pdf

NIA. 2019. Review of Nursing Education: Educating the nurse of the future needs to include digital transformation. Retrieved July 25, 2019, from consultations educating the nurse of the future independent review website: consultations.health.gov.au/office-of-the-chief-nursing-and-midwifery-officer/educating-the-nurse-of-the-future-independent-revi-1/supporting_documents/DiDonato_J_Nursing Informatics Australia.PDF

Shields,P. 2018. Capturing and evaluating process semantics from front-line nurses: A pilot study. *Online Journal of Nursing Informatics* (OJNI), 22.

Wolf, Z. R. 1999. Making nursing work visible inside and outside the profession. *The Pennsylvania Nurse*, 54(1), 21-24.