Finding and Exploring Health Information with a Slider-based User Interface

Patrick Cheong-lao Pang\textsuperscript{1,3}, Karin Verspoor\textsuperscript{1,2}, Jon Pearce\textsuperscript{1}, Shanton Chang\textsuperscript{1}

1. Department of Computing and Information Systems, The University of Melbourne, Australia
2. Health and Biomedical Informatics Centre, The University of Melbourne, Australia
3. CSIRO Data61 (formerly NICTA Victoria Research Lab), Australia
Motivation
What will happen if someone feels sick...
Symptoms of a Cold: Coughing, Runny Nose, No Fever, and ...
www.webmd.com/cold-and-flu/understanding-common-cold-symptoms
Mar 2, 2015 - For the first few days, the nose tears with watery nasal secretions. Later, these become thicker and darker. You may get a mild cough. It won’t ...

Cold Medicine Options for Cough, Stuffy Nose, Runny Nose ...
www.webmd.com/cold-and-flu/cold-medicines-adults
Over-the-counter cold medicines won’t cure your cold, but they might make you more comfortable, so you can rest as it runs its course. Here’s a look at some ...

Common Cold Symptoms - Healthline
www.healthline.com › Cold and Flu › Basics
Aug 11, 2014 - A runny nose and/or nasal congestion (stuffy nose) are two of the most common ... A dry cough or one that brings up mucus, known as a wet or ...

Relief for a stuffy nose, cough and sore throat - Common colds
www.informedhealthonline.org/relief-for-a-stuffy-nose-cough-and-sore-...
Apr 23, 2014 - Colds usually go away on their own after about one to two weeks, but the symptoms – such as a runny or stuffy nose, cough and headache ...

Natural Treatments for Coughs, Runny Nose and Congestion
www.askdrsears.com/topics/.../coughs.../natural-treatments-coughs-runny
Aug 28, 2013 - The steam will help loosen the nose and chest congestion, and help your child cough it up or blow it out. Do this steam cleaning every morning ...

Dry coughs - myDr.com.au
A dry cough is non-productive and irritating, and sometimes causes a tickly throat. ... if you have a runny nose and cough when you lie down, your nose could be ...

Common Cold Symptoms including runny nose, sneezing ...
www.healthcentral.com/cold-flu/common-cold-symptoms.html
Sneezing, runny nose, nasal congestion, coughs and sore throat are all symptoms of the common cold. Compare your symptoms to those commonly associated ...
Common Cold Symptoms

Common cold symptoms appear about one to three days after the body becomes infected with a cold virus. The short period before symptoms appear is called the "incubation" period. According to the National Institute of Allergy and Infectious Diseases (NIAID), symptoms are frequently gone in seven to 10 days, although they can last from two to 14 days.

Common Symptoms

Runny Nose or Nasal Congestion

A runny nose and/or nasal congestion (stuffy nose) are two of the most common symptoms of a cold. These symptoms result when excess fluid causes blood vessels and mucous membranes within the nose to swell. Within three days, nasal drainage tends to become thicker and yellow or green in color, indicating the presence of a bacterial infection.
Some Observations

- Relying on search engines;
- Not fully utilise the information in each website.

Could users have a different (better) way to find information?
The Prototype
Our Prototype

- Better Health Explorer (BHX)
- To provide a web-based environment to **explore** health information using **sliders**
Asthma

Asthma is a common disease of the airways. During an asthma attack, the airways narrow, reducing the flow of air in and out of the lungs. This may lead to wheezing and coughing. Pollen, cigarette smoke, colds and flu can trigger an asthma attack. About one in ten Australians have asthma. A range of programs and services are available to support people with asthma.

Introduction

Asthma is a common disease of the airways, the structures through which air passes when moving from your mouth and nose right down to the smallest structures in your lungs. Asthma is the most widespread chronic health problem in Australia. About one in ten Australian adults and one in nine or ten children have asthma. It is often associated with other allergic conditions like hay fever and eczema.

Asthma causes the muscles in the airways to tighten and the lining of the airway becomes swollen and inflamed, producing sticky mucous. These changes cause the airways to become narrow, making it difficult to breathe. Most people with asthma only have symptoms when they inhale a ‘trigger’ such as pollen, exercise without the right preparation, or catch a cold or flu.

Asthma cannot be cured, but with good management, people with asthma can lead normal, active lives. A range of programs and services are available to support people with asthma.

Symptoms of asthma

Asthma tends to run in families. Asthma affects everyone differently, however, and even two children from the same family can have different asthma patterns and triggers.
Sliders

- Relevance to the current context
  (Less Related <-> More Related)
- Care giving/support – Condition/facts
- Text – Image/Video
- Readability
  (Easiest to Read <-> Easy to Read)

(Based on our previous work about health information seeking behaviours)
Information Tagging

- A process that generates “scores” for the sliders for each article in the database.
Information Tagging

Relevance to the current context

- A score between a pair of articles
- Factors:
  - The number of common words
  - The number of common hyperlinks
  - The categories they belong to
  - The number of common keywords
  - Information provider
Information Tagging

Care giving/support – Condition/facts

- Look for specific keywords, for example:
  - “caring”, “managing”, “family” for care giving articles
  - “treatment”, “symptom” for fact-based articles
Information Tagging

Text – Image/Video

- Factors:
  - Word counts and image counts
Information Tagging

Readability

- Factors:
  - Flesch-Kincaid readability measurement
  - Could be use more specific/advance measurement
Information Matching

Use a **two-stage** model

1. Filter using the relevance value
2. Sort and display the results using the other three sliders
Evaluation
Study Design

○ We tested with two websites:

Better Health Explorer (BHX)  Better Health Channel (baseline)
Participants

- 31 participants
  - Male: 15  Female: 16
- Average age: 34
  - Range: 20 - 72
- Occupations:
  - Student: 19  Staff: 17  Others: 2
Some Comments

- “I would like to explore the options, see what kinds of options come up on the screen... if I found something interesting, I gonna open it”
- “(The UI was) giving me new stuff that might be interesting”
- “If you know what’s going on, you just go to search and see.”

Full results can be found in a recent JMIR paper:
Designing Health Websites Based on Users’ Web-Based Information-Seeking Behaviors: A Mixed-Method Observational Study (doi:10.2196/jmir.5661)
Summary
Summary

- Exploring a new way to retrieve health information;
- Suggesting different sliders for health information;
- Proposing automated approach to associate articles with different sliders;
- Positive results and feedback from a preliminary user study.
Flu (influenza)

Influenza (the flu) is caused by a virus. The flu is more than just a bad cold and can occasionally lead to serious complications, including death. Specific antiviral medication is available. It is only useful if given early after onset of symptoms and may shorten duration of the illness and reduce symptoms. Vulnerable people are more likely to develop serious complications including pneumonia. Immunisation can offer protection from flu.

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9. Things to remember
10. Related information

Introduction

Influenza, commonly known as the flu, is caused by a highly contagious virus that is spread by fluids produced during coughing and sneezing, or by direct contact with those fluids on surfaces. There are three types of flu virus - influenza A, B and C. Older people, pregnant women and those with an underlying medical condition are more likely to develop serious complications as a result of the flu. These complications include secondary bacterial pneumonia, primary influenza pneumonia, and inflammation of the brain and heart.

The flu virus has a unique ability to change its surface structure. This means that people’s immune systems might not be able to effectively fight the new version of the flu that circulates each season (known as seasonal flu). This can cause widespread illness (epidemics and pandemics). For this reason, people who are at risk of complications should be immunised each year.

Acknowledgements: