Reviewer's report

Title: Measuring the impact of health policies using Internet search patterns

Version: 1 Date: 3 May 2010

Reviewer: Judith Dwyer

Reviewer's report:

This paper proposes a novel potential method of assessing the impact of health policies, by extending the use of online search statistics from epidemiological surveillance of infectious illness to factors affecting health service utilisation, using abortion as a case study. The paper documents an inverse relationship between the volume of internet searches for abortion and local legal abortion rates (and a direct relationship between volume of searches and legal restrictions on abortions). This is a potentially useful finding. However, the paper needs further work in relation to the following concerns:

MAJOR COMPULSORY REVISIONS

1. The policy questions and implications are overstated in this paper. In the background, the authors state that they are focusing on the relationship between abortion policies and abortion rates, and suggest that the potential to measure that relationship in real time is of value for public health. They suggest that internet search patterns could provide a ‘real-time’ method of tracking ‘overall’ abortion rates in specific regions. These claims overstate both the significance of the results and the potential usefulness of the method for surveillance.

Firstly, this is not an adequate study of the relationship between local restrictions and local rates. It does analyse existing data about the relationship between some measures of restriction and measures of local legal abortion rates. Since legal status and abortion rates are the main policy and service utilisation variables under study, the potential impact of illegal/informal abortion practice is important. In some of the countries included, illegal abortion is a significant health problem, as evidenced in maternal mortality rates, inter alia.

However, the connection between search volume and policy settings, and between search volume and local legal abortion rates is of interest, particularly for the US where the data and legal settings between states are more clearly comparable.

In relation to the usefulness of the results, assuming that the data and definitional problems raised above could be addressed, the main application would seem to be to confirm that policies that restrict or extend access to services are having an impact on the targeted population; or to compare the impact of alternative restrictive or liberalising access measures across jurisdictions; or to confirm that reduced or improved supply of services is affecting access to care. These results have policy relevance. However, as the authors acknowledge, the search
measure is not robust enough to provide real time information about actual abortion rates. It may be that the search measure could provide real time information about policies or services that affect access, but even this may be subject to confounding by transitional effects during 'real time'. That is, increased searching during a transitional period could not reliably be interpreted in the same way as annual average searching behaviour for comparison across jurisdictions, which is what this study reports.

2. As indicated above, limitations of the data need to be discussed. To the extent that I could identify the specific sources for all countries, the data relate to legal abortion only.

The data used to represent 'local abortion rates' in relation to USA populations is regarded as reliable for legal abortion; and the sources do allow for differentiation of legal abortions by place of occurrence and by residence of the patient. However, the authors do not address the potential impact of illegal abortions, in states with restrictions, or where the availability of services is inadequate. The extent of the variation in rates by state of residence raises this question.

MINOR ESSENTIAL REVISIONS

3. At the end of the results section, the authors suggest that differences in rate and search volume patterns found in Central and South American data as compared to Eastern European data 'may be the result of inherent cultural/religious differences in attitudes to abortion between these countries'. The authors have no evidence for this suggestion; and I am not aware of evidence that indicates that religion (as distinct from legal, regulatory and service access settings) has an independent impact on abortion rates. (Religious influence does of course affect those legal and service settings). There is some evidence that depth of religious feeling has an impact; but this is independent of religious denomination.

4. Further detail on the non-USA data sources used is needed.

Please note that I have not reviewed the statistical methods in the paper.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.