Reviewer’s report

Title: Supplier-induced demand for psychiatric admissions in Northern New England

Version: 1  Date: 22 March 2011

Reviewer: Terry Lewin

Reviewer’s report:

Overall Comments

There are several levels at which this paper can be evaluated – in terms of its contribution to: 1) the use of “small area analysis” to study psychiatric care; 2) the potential predictors or drivers of psychiatric admissions; and 3) the evidence for "supplier-induced demand" for health care. Its contributions are clearly strongest in relation to the first of these and weakest in relation to the last. However, despite the preliminary nature of the findings, the relative absence of papers attempting to address these issues in the mental health arena suggests that the paper merits publication – even if its primary function is to stimulate others to undertake more comprehensive evaluations.

With respect to "small area analysis", the authors successfully demonstrate the variability in admission rates (from 2.4 to 13.4 per 10,000) and the benefits of using Psychiatric Health Service Areas (PHSAs), as opposed to general HSAs, together with the methodological benefits of selecting areas with at least one local hospital providing psychiatric beds (and examining localization indices).

While the authors do not claim that they are attempting to model psychiatric admission rates per se, viewed from this perspective, they have only one predictor (available psychiatric beds per 100,000 adults) and one outcome (admission rates per 10,000, across Diagnostic Related Groups 424 to 437). Consequently, a broad range of potential influences are simply not considered, such as service configuration and access issues (e.g., the number and nature of the available primary care, community mental health, and other ambulatory services, transportation issues, etc) and socio-geographic factors affecting need (e.g., poverty, social isolation, population density and mix – see Curtis et al., 2009). Moreover, there are a range of internal factors about which hospitals often report that can also impact on local admission rates and bed blockages (e.g., staffing ratios, occupancy rates, involuntary admission rates, transfer rates to linked facilities, diagnostic profiles, etc).

Apart from the use of "supplier-induced demand" in the title, occasional expressions such as "reflecting a supplier-induced demand phenomenon", and some (largely dated) references to literature primarily about (non-psychiatric) medical procedures, there is nothing about this paper that actually provides direct evidence to support the notion of a "supplier" contribution to psychiatric
admission rates. Yes, there is clear evidence of variability in admission rates — but, in the absence of assessments of the underlying need, the quality of the care provided, the associated costs, and the outcomes achieved, it is impossible to say what represents an optimal admission rate — indeed, a higher proportion of mental health clients having shorter acute inpatient stays and receiving better targeted interventions that continue post-discharge might be considered ideal. Surely, some additional features of the "supplier" also need to be assessed (other than bed availability) in order to claim that the "market" is essentially being manipulated (e.g., specific linkages to primary care, other specialists, insurers; advertising of facilities, treatment programs, outcomes, research; and so on). Which is not to suggest that supply factors shouldn't be investigated in relation to the uptake of psychiatric care, rather that a more comprehensive approach is required, preferably using a mixture of quantitative and qualitative methodologies and examining macro and micro level factors.

Major Compulsory Revisions

1. Literature and context. If possible, the authors should consider a broader literature in the Background — primarily to better set the research and health services context. For example, it may be useful to identify the range of factors that could potentially impact on psychiatric admission rates, and on regional or geographical variation, and then to attempt to demonstrate how some of those factors could be influenced by particular supply and/or supplier factors. Some of the pre-1990 literature could also be discarded, in favour of more recent articles by Curtis et al. (2009), Leonard et al. (2009), and others, together with a more critical look at the "supplier-induced demand" literature — which is probably more contentious than the authors currently suggest — and its potential relevance and utility for mental health (and chronic illnesses). (On a related issue, is there any evidence from Northern New England that clients with particular characteristics, such as schizophrenia, drug dependence, homelessness, etc, are more likely to drift to particular population centres and to, thereby, impact on selected hospital admission rates?)

2. Future directions. The Discussion acknowledges that this is "an initial step" and that "future efforts should examine larger geographic regions and incorporate measures of population needs, quality of care, and outcomes of care". However, to the extent that the current findings largely rely on a single correlation (between available beds and admission rates — see Figure 3) based on 1997 hospitalization data, there is clearly a long way to go before we understand the key drivers of psychiatric admissions. It would be helpful if there was a paragraph in the Discussion more clearly outlining future directions — that is, how to specifically build on the current findings — possibly including recommendations for incorporating longitudinal data, to improve the possibility of drawing causal inferences. In addition to discussing some of the factors identified in the Overview (above), it may also be useful to explore differences in "referral sources" across the PHSAs and possible links to admission rates.

Minor Essential Revisions
3. Limitations. Several limitations are already acknowledged in the Discussion (e.g., the absence of quality or outcome measures, consideration of different measures of population based needs, limited data sets, etc). Some space should also be devoted to limitations associated with the formulation/assessment of "supplier-induced demand" – and how it could be better quantified – particularly in relation to mental health.

4. Minor typographical errors. Overall, this paper is well structured and easy to follow. On the second page of the Background, "CHMC" should be "CMHC".

5. Possible additions to Table 2. The authors might also like to consider adding a couple of extra columns to Table 2 – the total number of psychiatric beds for each PHSA, and the corresponding bed availability rate per 100,000.

Discretionary Revisions

6. Data set. Since the primary data set for this paper is from 1997 – the authors might care to offer an explanation for this in the Methods, and to consider how things have changed since that time (in the Discussion) – possibly even commenting on available beds currently (in 2010/2011) within the same 25 PHSAs.

7. Paper title. The authors might even consider adding a question mark to the title of this paper, and re-phrasing some of the Background and Discussion so that the overall tone of the paper is clearly more exploratory – that is, what is the current level of evidence for "supplier-induced demand" for psychiatric services and where should we go from here.


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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.