Reviewer's report

Title: Technology-Dependency Among Patients Discharged from a Children's Hospital: A Retrospective Cohort Study

Version: 1 Date: 5 January 2005

Reviewer: Susan Kirk

Reviewer's report:

General

This is an interesting paper that has the potential to contribute to the area. However there are some methodological and presentational issues that need attending to before publication.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

ABSTRACT

The abstract will need revising in light of the comments below.

Currently what was achieved in the study appears to be inaccurately presented i.e ‘we measured the proportion of children discharged from a children’s hospital who are ……’

I am not sure why medians rather than means are presented in the results section of the abstract.

INTRODUCTION

I am not sure that it is accurate to state that there are only a ‘handful’ of studies in this area. A more accurate statement in relation to this particular study may be that very little is known about prevalence and incidence. Quite a few studies have now looked at psycho-social impact and support needs.

A clear study aim/research question would be helpful at the end of the introduction. I do not feel that this study has really examined the issue of caring ‘burden’ – many assumptions appear to be being made in relation to this aspect that the data does not support.

METHODS

I have found it confusing about whether this study is focusing on admission or discharge. The title suggests that discharge is the focus but many references are made to admission and admission records being assessed. It might have been appropriate to collect some of the demographic data from the admission record (e.g. insurance) but data on devices, medications, TD assessment etc should have been collected at discharge. It may be that this was what happened but it is not clear in the paper.

I would recommend the authors seek the advice of a statistician in presenting the data. Further information is required on how the sample size was calculated. Confidence intervals appear to be used inappropriately (e.g. in relation to demographic data) – ranges might be more appropriate to present. Actual numbers are not reported – a number and a percentage should be presented when reporting results e.g. 12 (6%) or 6% (n=12). I accept that this may have been done because the
sample size is 100.

I would have thought that any child who had died during admission would have been excluded (and another child sampled) as the paper is about characteristics at the point of discharge.

It might have been helpful if the OTA definition of technology-dependence was used. Many studies use this. At the very least it would have been helpful to have a complete listing of the devices/technologies included in the study as a figure. On page 9 wheelchairs appear to have been included in this definition – I am aware of no studies in the area of TD children that have included wheelchairs as a technology/device. Have they been included in this study? If so they do not meet the study definition (p8). If they have been included this may account for the high numbers of TD children found. Were children dependent on naso-gastric tubes, oxygen and ventilation excluded or were there none in the sample?

Consideration of the dimensions of TD is useful (figure 1). The sentence underneath the definition of TD on p8 does not make sense to me – what does ‘threshold consequence’ mean, hospitalization does not appear on the figure.

The presentation of how many children were TD is confusing. On page 9 26% used a medical device (including a wheelchair). On p10 41% were TD (including medications). This should be more clearly presented so we know how many were TD (preferably excluding wheelchairs) at discharge. The route of medication administration could also be clarified. Oral administration would not generally be considered a TD whereas IV would be.

The data could probably be explored more e.g. what type of home care provision did children with different needs/dependencies receive. Just some simple crosstabulations of different variables.

Is it possible to extrapolate from a sample of this size (100) to the population (11,000) and estimate what proportion would have been TD?

Tables will need modifying in light of above.

DISCUSSION

The limitations are identified well. I thought that the discussion went beyond the results from study at times. At present the authors do not discuss their findings in light of other epidemiological studies – if comparisons are not possible because of methodological or population differences this could be stated.

I feel that Figure 2 is superfluous – the points are made in the discussion and it is unusual for a figure to appear for the first time in the discussion.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

There are some typos in the paper. Some are identified below but not all.

INTRODUCTION

Line 1 - ‘Proportion’ rather than ‘fraction’ might be a better term to use. Also children’s hospitals (plural).
The accepted term is technology-dependent rather than technologically dependent which is used here and at other points in the paper.

Discretionary Revisions (which the author can choose to ignore)

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

**Quality of written English:** Acceptable

**Statistical review:** Yes

**Declaration of competing interests:**

I declare that I have no competing interests