PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	A retrospective cohort study of mode of delivery among public and private patients in an integrated maternity hospital setting.
AUTHORS	Murphy, Deirdre; Fahey, Tom

VERSION 1 - REVIEW

REVIEWER	Jane Sandall King's College, London
REVIEW RETURNED	26-Sep-2013

GENERAL COMMENTS	This is an important topic. The paper is well written and reports on a well designed study. I have a few small comments. Should 'retrospective' be in the title? As the authors note, these findings have been found previously. Can the authors emphasise what is new about this study? p4 line 21 clarify whether self funded patients applies to maternity care in UK? p5 line 21 consider adding studies from Australia here, as these are mentioned in summary? p10 was parity adjusted for in the whole group analysis? Should it have been? p11 Or and adj OR are not reported for all outcomes. Should they be? Could the authors ensure that it is clear to the reader whether outcomes being discussed in the text are before or after adjustment? p14 line 8 was any data quality assessment done? p17 line 8 do short and longer term risks to baby need to considered?

REVIEWER	Helen McLachlan Associate Professor Mother and Child Health Research La Trobe University Australia
REVIEW RETURNED	29-Sep-2013

GENERAL COMMENTS	This is an interesting and I believe important study that adds to the growing body of evidence regarding differences in mode of birth for public and private patients. The objective of the study was to examine the associations between mode of delivery and public versus private obstetric care in a maternity hospital in Ireland. This retrospective cohort study found that privately funded obstetric care was associated with higher rates of operative delivery that

	could not be fully accounted for by medical or obstetric risk factors. In the background, the authors state that following the last general election, the Government committed to introducing a single model of healthcare based on universal health insurance. Can the authors explain this further i.e. to explain what the implication is for the current system and the impact on public and private care models? The authors also state that "Undoubtedly the admission of private patients brings much needed resource into an overstretched system". Can the authors explain/justify this point? In some jurisdictions, private patients giving birth in the public system are a drain on public resources. The authors go on to state "What is less clear…". Please clarify – less clear than what? Also, more information should be provided about the public and private system of care – i.e. where, how and who provides care in both systems? In the 2nd paragraph of the background, the authors state that there has been 'ongoing debate' regarding whether rates of caesarean section could or should be lowered in Ireland. There may have been debate about this in Ireland but there have been consistent concerns about high cs rates internationally. There is now a large body of research about the risks associated with caesarean (e.g. Villar 2007; Denuex Tharaux 2006; Yang 2007; Smith 2003; Queenan 2011; Declerq 2007 etc etc) and many policy documents in a range of countries recommend that cs rates should be lowered. This evidence is lacking from this paper. Strengths and limitations: I suggest moving this to the end of the Discussion Comparison with existing literature Given the evidence about the risks of rising caesarean rates, the differences found in this study between private and public care is of concern. The Discussion should include some comment to this effect and should speculate further on reasons for the higher rates in private patients (e.g. see work by Roberts et al from Australia). Clinical service implications As per point above, please clarify how public patients benefit from the additional resource of private patients using the public system. Conclusion The authors state that healthcare systems that include private and public patients need to reflect on the potential for disparate intervention rates and the implications in terms of equity, resource use and income generation. The conclusion should also include a comment about the higher rates in private patients being of concern given the associated risks and that further research should explore this.

REVIEWER	Jocelyn Toohill Griffith Health Institute, Brisbane
REVIEW RETURNED	30-Sep-2013

GENERAL COMMENTS	Please include p-values to complete reporting of statistical analyses within the abstract, manuscript and tables. Within your results section 'Indications for caesarean section' are

	you able to elaborate on the the specific or prevalent maternal and fetal conditions identified as indicators for caesarean section where a statistically significant difference was found between the two insurance groups? That is can the maternal conditions that have been identified be explained by having an older parturient population in private care or explained in any other way? Given you have found a statistically significant increase in the number of caesarean sections for fetal indications in private care but no difference in perinatal outcomes, would you be able to comment on this? At Line 3 of Page 2 could you write SE in full.

VERSION 1 – AUTHOR RESPONSE

Reviewer Name Jane Sandall
Institution and Country King's College, London
Please state any competing interests or state 'None declared': none declared

This is an important topic. The paper is well written and reports on a well designed study. I have a few small comments.
Should 'retrospective' be in the title?
Response: Agree, retrospective has been added
As the authors note, these findings have been found previously. Can the authors emphasise what is new about this study?
Response: Highlighted several times - integrated public and private care (unlike most other published settings) - detailed data on sociological, medical and obstetric factors - includes data on obstetrician defined indication for caesarean – provides detailed information on perinatal outcomes to complete the picture. The inclusion of perinatal outcomes is probably the most novel aspect and this has now been highlighted.

p4 line 21 clarify whether self funded patients applies to maternity care in UK?
Response: The "self funded" refers to UK maternity care and is derived directly from the citation (reference 4).

p5 line 21 consider adding studies from Australia here, as these are mentioned in summary?
Response: Additional studies have been added to the introduction refs 17-19 (see also reviewer 2); also a more complete list in the discussion section.

p10 was parity adjusted for in the whole group analysis? Should it have been?
Response: Parity was adjusted for. The appropriate footnote has been added (previously lost at formatting).

p11 Or and adj OR are not reported for all outcomes. Should they be?
Response: ORs and adjusted ORs are reported for all appropriate outcomes that relate to the entire cohort. Difference in proportions and p values have been reported for factors within groups that are not strictly speaking cohort analyses.

Could the authors ensure that it is clear to the reader whether outcomes being discussed in the text are before or after adjustment?
Response: The text clearly outlines where associations are crude or adjusted. The main discussion refers only to associations that remain statistically significant in the multivariable models (adjusted ORs).

p14 line 8 was any data quality assessment done?
Response: Yes this has been addressed in previous studies published from this cohort. An additional statement has been included.

p17 line 8 do short and longer term risks to baby need to considered?
Response: The limitations section addresses this. Longer term follow-up would be required to establish all congenital and neurodevelopmental morbidity.

Response:
Reviewer Name Helen McLachlan
Institution and Country Associate Professor
Mother and Child Health Research
La Trobe University
Australia
Please state any competing interests or state 'None declared': None declared

This is an interesting and I believe important study that adds to the growing body of evidence regarding differences in mode of birth for public and private patients. The objective of the study was to examine the associations between mode of delivery and public versus private obstetric care in a maternity hospital in Ireland.

This retrospective cohort study found that privately funded obstetric care was associated with higher rates of operative delivery that could not be fully accounted for by medical or obstetric risk factors.

In the background, the authors state that following the last general election, the Government committed to introducing a single model of healthcare based on universal health insurance. Can the authors explain this further i.e. to explain what the implication is for the current system and the impact on public and private care models?
Response: As with many election-related commitments the precise details are yet to be determined. A statement to that effect has been added.
The authors also state that "Undoubtedly the admission of private patients brings much needed resource into an overstretched system". Can the authors explain/justify this point? In some jurisdictions, private patients giving birth in the public system are a drain on public resources. The authors go on to state "What is less clear…". Please clarify – less clear than what?
Response: Both points have now been clarified.

Also, more information should be provided about the public and private system of care – i.e. where, how and who provides care in both systems?
Response: It is beyond the remit of this paper to describe every aspect of the Irish Healthcare system which is complex. However, a detailed description has been given of the care provided to public and private patients within a voluntary "state-funded" hospital.

In the 2nd paragraph of the background, the authors state that there has been 'ongoing debate' regarding whether rates of caesarean section could or should be lowered in Ireland. There may have been debate about this in Ireland but there have been consistent concerns about high cs rates internationally. There is now a large body of research about the risks associated with caesarean (e.g. Villar 2007; Denuex Tharaux 2006; Yang 2007; Smith 2003; Queenan 2011; Declerq 2007 etc etc) and many policy documents in a range of countries recommend that cs rates should be lowered. This evidence is lacking from this paper.
Response: The debate about increasing access to caesarean section goes beyong Ireland. Additional references to a BMJ Debate article have been added. (which also include discussion and references to CS complications). Additional representative papers on the complications of CS have been added,

although this is not the main focus of this cohort study.

Strengths and limitations:
I suggest moving this to the end of the Discussion
Response: We have left this where it is, in keeping with BMJ journal style, however, we are happy for it to be moved if the editors prefer.

Comparison with existing literature
Given the evidence about the risks of rising caesarean rates, the differences found in this study between private and public care is of concern. The Discussion should include some comment to this effect and should speculate further on reasons for the higher rates in private patients (e.g. see work by Roberts et al from Australia).
Response: We are conscious that there are also benefits of caesarean section and the focus should not be exclusively on risks. We have speculated a number of reasons for the higher rate among private patients including maternal preference, obstetrician preference, scheduling issues, previous obstetric experience, risk aversion with VBAC. We have highlighted how this approach may not be in the woman's long-term interest. We are reluctant to speculate too much further beyond the limits of the data.

Clinical service implications
As per point above, please clarify how public patients benefit from the additional resource of private patients using the public system.
Response: This has been clarified in the introduction.

Conclusion
The authors state that healthcare systems that include private and public patients need to reflect on the potential for disparate intervention rates and the implications in terms of equity, resource use and income generation. The conclusion should also include a comment about the higher rates in private patients being of concern given the associated risks and that further research should explore this.
Response: We are happy that the conclusion gives a robust summary of the study findings and implications. We agree entirely that further research is required and have added an additional statement.

Reviewer Name Jocelyn Toohill
Institution and Country Griffith Health Institute, Brisbane. Australia. 4131.
Please state any competing interests or state 'None declared': 'None delcared'

Please include p-values to complete reporting of statistical analyses within the abstract, manuscript and tables.
Response: For the cohort analyses, we have provided Odds Ratios and 95% Confidence intervals. This is far more informative than p values which simply inform the reader of the probability that the finding is likely to be a chance finding . We have highlighted findings that are statistically significant with an asterisk.

Within your results section 'Indications for caesarean section' are you able to elaborate on the the specific or prevalent maternal and fetal conditions identified as indicators for caesarean section where a statistically significant difference was found between the two insurance groups? That is can the maternal conditions that have been identified be explained by having an older parturient population in private care or explained in any other way?
Response: We are reluctant to divide the dataset into further small sub-groups as there is overlap between factors and in many cases the sample sizes become meaningless. We have highlighted the nature of the maternal and fetal complications within the methods section.

Given you have found a statistically significant increase in the number of caesarean sections for fetal indications in private care but no difference in perinatal outcomes, would you be able to comment on this?

At Line 3 of Page 2 could you write SE in full.

Response: We agree with the reviewer that this is counter-intuitive. It would appear that there is greater risk aversion for vaginal delivery within the private patient sector. We have highlighted this point particularly for VBAC where the data are most robust. It is more difficult with a fetal indication to know precisely what is driving the decision; if for example the fetus has IUGR and the mother, a private patient, is also age 42 with an ivf pregnancy, then there are a number of factors that may inform the decision to perform a CS. A public patient with a fetus with IUGR age 32 years with a spontaneous conception may have a successful induced labour, and both babies may do well.