Reviewer's report

Title: Physicians' choices of dual practices and the effects on labor supply in public hospitals: Results from a register based study.

Version: 2 Date: 12 January 2014

Reviewer: Krishna Hort

Reviewer's report:

- Major Compulsory Revisions

Background:
(1) Para 6, last line: ‘effects of dual practices on the labor supply in public hospitals ?’ This is an incomplete question and suggests that some lines are missing, perhaps describing the aim and objectives of the study. Please add a specific description of the aim and objectives.

Materials and Methods
(2) Para 2, lines 1 - 2: You refer to ‘samples extracted from a population’. I assume you mean from a register or database of the population of physicians. Please describe the database – how were the data collected, who manages the database, what was the data collected for, whether identifying information was available, and if so, what ethical clearance was obtained.

(3) Para 2, line 10: Please explain how the ‘sample’ of 14,033 physicians has more than 16,800 from the sum of 2001 and 2009 (line 10). I assume the database consists of the number of physicians employed each year, but is the unit physician (and includes years worked); or is there a separate list of physicians for each year.

(4) Para 3: This section needs to describe the other databases in more detail – as mentioned above under the database of physicians. In particular how were the databases ‘merged’? Do the other databases have data by individual physician? If so how were the individual physicians identified? What is the database referred to from ‘Statistics Norway’? If the merger required identifying information at an individual physician level, this again requires some ethical explanation. More information is needed on the ‘hospital variables’

(5) Para 4: Identifying physicians engaged in dual practice is a key aspect of the study. Please provide more information on which database was the source of the information on income (I assume Statistics Norway), and how complete / accurate this information is eg is it from income tax reporting? Does this just refer to salary? How is it possible to determine whether the income is from the categories of private practice referred to? How is this variable defined in terms of time? eg is there a separate variable for each year of work?

(6) Para 5: Total weekly hours again needs further clarification. Is this variable on an individual physician basis? How is it defined in terms of time? eg is it the
average for a year? Is there a separate variable for each year of work?

(7) Para 6: Again need to clarify whether the hourly wage is calculated on an annual basis. More clarification is needed on the calculation of ‘extended working hours’ – how is the percentage of the physician’s salary defined / measured?

(8) Para 6 line 13: I am unable to understand the reference to ‘instrumented the endogenous variables...by their previous values’. The variable ‘NetCapInc’ has not been defined. This needs to be explained and re-written.

(9) Para 10, line 11 (following the equations) again mentions NetCap Inc as the ‘sum of capital income and expenses’. As noted above this needs to be defined.

Results

(11) Para 3 line 6: ‘total debt’ – this variable was also not defined. The figure (figure 3) is labelled NOK on the vertical axis – this needs to be defined (? Norwegian currency)

Discussion

(12) Para 3: Hourly salary for extended working hours. Please clarify the policy change. Were physicians in public hospitals allowed to work extended hours and receive additional salary? or was payment made for extended hours (previously did physicians receive no payment for extended hours)? or was payment rates increased?

- Minor Essential Revisions
This mainly relate to issues of grammar and syntax.

Abstract
Terminology: dual practice in title, but ‘dual work’ in abstract para 1, then again dual practice under methods. This continues throughout the paper. Suggest consistency in use of the term dual practice or dual work. See comment below in background and use of the term ‘dual practice’.

Methods line 5: ‘dual job holding decision’ replace with ‘decision to undertake dual practice’

Results: line 7: ‘similar for those who did’ replace with ‘we found that working hours were similar for those who did and those did not engage in dual work’.

Conclusion: line 2 ‘may indicate’ omit ‘may’ and replace ‘can’ in line 3 with ‘may’

Background
Para 2, line 2: unclear whether ‘those working in education or research’ refer to the other work of physicians in the public system; or refer to another group of health workers who might engage in dual practice. I assume you mean that dual practice could include practice in clinical work plus work in other aspects of other aspects of health care other than patient care. Please reword to make this clearer.

Para 2 line 5: ‘ambulant emergency care’. Please clarify whether you include public provision of emergency care here? Normally dual practice refers to work in the private sector, so would not include emergency care unless it was in the
private sector.

Para 4 line 5: dual practice is here referred to as dual work – although dual work is not defined. As you have only defined dual practice, suggest keep to this term.

Para 4 line 7: grammatical errors ‘variables describe (not describes) ‘indicators of nurse and physician..’ (not nurses)

Para 4 line 8: ‘to explain’ not for; ‘to explain the probability’ (omit ‘ variations in the’),

Para 4 line 9: comma after ‘and’; replace ‘works’ with practice

Para 5: line3: shift ‘specializing in day surgery’ to follow ‘for profit hospitals’

Para 5 line 8: ‘dual physician work’ replace with ‘physician dual practice’.

Para 6 line 4: ‘RHAs reduced from five to four’ – insert ‘were’ between ‘RHAs’ and ‘reduced’

Para 6 line 6: ‘and more to have’ – remove ‘more’

Materials and Methods

Para 2: I found this quite confusing to read. It would be helped by a description of the database (as noted above under compulsory revisions) but explanation could be made clearer, perhaps by stating initially that two subsets of the database were taken (the term ‘sample’ suggests that a process of selecting a representative group from the database was undertaken – but this is not a sample in that sense, rather a subset). Then describe how each subset was formed.

Para 2, line 12: ‘may be reflecting’ replace with ‘may reflect’

Para 7, line 7: replace ‘measurement’ with ‘measure’

Para 9, line 3: replace ‘actual’ with ‘each’

Para 9, line 5: replace ‘habitants’ with ‘inhabitants’; assume it should be ‘patients on waiting lists per 1000 inhabitants’. This sentence is not clear. Suggest replace ‘we established data of ’ with ‘Variables of’ ... which will link with ‘were used as’ later in the sentence.

Para 9, line 7: replace ‘consume’ with ‘consumption’;

Results

Para 2: ‘incomes from dual work’ was not defined as a variable in the material and methods section -

Discussion

Para 2: Figure 5 – need to explain what is meant by ‘mean payments per physician for dual work’ – is this the total payment or the payments received from the non public work.

Para 7 line 5: replace ‘week’ with ‘weak’.

Para 12, line 2: replace ‘regulations’ with ‘regulation’.

Para 12, line 3: remove ‘for’
Para 12, line 9: add ‘system’ after remuneration; replace ‘to’ with ‘too’

Para 12, line 11- 12: revise to ‘compensation for Norwegian physicians is not very different from physician compensation in other countries when living costs and salaries of other workers are considered’.

Figure 6: Change ‘compensation’ to ‘annual salary’

- Discretionary Revisions

Materials and methods,

(1) Para 7: The comments on the appropriateness or not of the DRG equivalents as a measure of labour force productivity could be shifted to the discussion section, rather than in the materials and methods. Materials and methods should describe your methods – you can introduce any caveats or issues in the discussion, rather than when describing them.

(2) Para 11: The description of the hospital hierarchy would be better placed in the introduction, and then could be referred to in the development of the model.

Discussion:

(3) Para 4: ‘labor supplies’. The results section uses the term ‘working hours’. While this could be considered as ‘labour supply’, this terminology was not previously used. Suggest you introduce the reference to working hours as reflecting labour supply, and then go on to the discussion. Line 6 refers to ‘physician labor supply’ but I assume you mean here the ‘public labor supply’, rather than total labor supply.

The key issue here may be the ‘marginal income gained’ from extended hours. You note that this is an important variable, and given a choice to earn more income, physicians may prefer to earn that income in the public sector if the marginal gain is similar to the marginal income gained from extra hours in the private sector. This is probably relevant to the issue of otolaryngology and ophthalmology where it may be that high demand enables higher marginal gain from private practice. Your analysis would be strengthened if there was a comparable private sector / dual practice payment / hours worked as the extended hours variable for the public sector.

(5) Para 7: last sentence. This is an important point, but I’m not sure of the reference to the cohort analysis. Clearly the context of overall resourcing of public hospitals is important, and where overall resourcing is relatively good, then even the more poorly resourced (vw workload) hospitals are not sufficient of a disincentive, particularly with good payment for extended hours. This would suggest that analysis needs to be done in context.

(6) Para 8: given the comment in para 7, these results need to be considered in the context of a well resourced Norwegian public health system.

Limitations

(6) See suggestion above re the discussion of DRG measures.

A key issue is the extent to which your data source captures all non-public clinical work. It would be useful to comment on the completeness or potential for
omission here.

Conclusions

The conclusions section does not seem to be consistent with the abstract summary of the conclusions.

(7) The first paragraph repeats the findings, rather than presents conclusions. Suggest revise the first paragraph to reflect the summary conclusions in the abstract.

(8) The second paragraph of the conclusion reflects an interpretation of the results of this study in the light of studies elsewhere. I suggest focusing more on the key contribution of this study - for example - to reflect the dynamic nature of physician choices on dual practice, and the responsiveness of physicians to changes in the financial incentives offered, and their own financial needs. It adds to the understanding of the heterogeneity of dual practice. The comments on developing countries and middle income countries are interesting but not related to this study. Equally the reference to ‘transparent and unequivocal rules’ does not seem to be related to the findings of this study.

(9) The authors may like to refer to a recent paper by Gonzales and Mach-Stadler in Journal of Health Economics: A theoretical approach to dual practice regulations in the health sector. (2013) 32:66-87 which presents an economic model of physician choice in dual practice, to which the findings of this study could be compared.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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