Reviewer's report

Title: Estimation of the costs of cervical cancer screening, diagnosis and treatment in rural Shanxi Province, China: a micro-costing study

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Reviewer: Eric Suba

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This is a well-written manuscript reporting the results of a micro-costing study that estimates the costs of cervical cancer screening, diagnosis, and treatment in rural Shanxi, China. This study demonstrates two major weaknesses. First, the study fails to adequately explain its conclusion. Also, the study excludes costs related to cytology.

MAJOR COMPULSORY REVISIONS

Two major revisions are required before this manuscript can be considered for publication.

1. First major compulsory revision: the study must more adequately explain why diagnostic costs (as opposed to screening costs) are dramatically higher at lower screening volumes.

The authors explain (p.6) that “For each individual clinical visit and laboratory test, the following items were included in the costing exercise: consumables (quantity used and unit price), drugs (quantity used and unit price), equipment (quantity used, price, years of useful life, number of cases processed annually), and staff (staff category, working time breakdown).” It appears unlikely that unit costs for consumables, drugs, or equipment would increase dramatically as screening volumes decline. It therefore appears likely that the dramatically increased diagnostic costs at lower screening values are a function of salary costs. Since it appears unlikely that the working time required to perform screening or diagnostic tests would vary as screening volume varies, it appears that salary increases may be the root cause for the authors’ conclusion that diagnostic costs increase dramatically as screening volumes decrease. If this is indeed the case, the authors should explain why certain groups of health workers will require dramatically higher salaries at lower screening volumes, relative to higher screening volumes. It would also be helpful for the authors to transparently present salary data and working time breakdowns, all of which, as documented on p.6, have been measured, yet none of which have been presented as study results.

If salary factors are not the reason for increased diagnostic costs at lower screening volumes, then the authors should more transparently explain what factors do, in fact, underpin the study conclusion.
2. Second major compulsory revision: the study must include costs related to cytology.

The manuscript documents (p.1) that “Although most women do not have access to screening, a cervical cancer screening initiative has been established for rural women, involving visual inspection with acetic acid (VIA) and cytology. This initiative, which began in 2009, will eventually cover ~6% (10 million) of rural women aged 30-59 years in China.” The manuscript also documents (p.4) that “The “11th-5” project was conducted as a research component of a larger screening initiative (Early detection and early treatment of cervical cancer program, EDETCC); more than 12,500 women have been screened through the larger project, using visual inspection, cytology or HPV DNA-based screening.” The authors’ claim (p.4) that “Cytology screening was not considered in the current study since it relies heavily on extensive quality assurance and is difficult to apply in rural areas in lower resource settings” is not compatible with the observations documented elsewhere in the manuscript. Given the fact that China has committed to cytologic screening in rural settings, the omission of cytology from the current study is puzzling and should be remedied.

**Level of interest:** An article of limited interest

**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.