Reviewer’s report

Title: A comparison of licensed and un-licensed artisanal and small-scale gold miners (ASGM) in terms of socio-demographics, work profiles, and injury rates

Version: 1 Date: 28 Oct 2016

Reviewer: Douglas Myers

Reviewer's report:

Introduction

What is the theory behind the hypothesis that formalization of a mine sector will help improve working condition in the AGSM workplaces? Is it a matter of governmental oversight? Do licensed places hire workers who are more skilled or experienced? Do they spend more money on safety? Do they do a better job of requiring and enforcing use of PPE?

Is there any evidence that formalization improves safety in other sectors?

Methods

Need some basic description of the concept of "contact zones," not just a reference to the full description.

Some description of the survey procedures is warranted. A potential problem for this study is response bias. This needs to be addressed.

Results

Table 1 should be organized differently. A side by side comparison of the licensed and non-licensed mines would be easier to interpret. It is not clear that the table needs to report range of age values for each mine. Greater consistency across tables would be an improvement as well. In table 1, there are separate columns for standard deviations; in table 2 they are in parenthesis.

Is it necessary to report averages for each mine site? Why not just a table comparing properties of miners from licensed vs. non-licensed sites?

It is not clear to this reviewer why the "Living with Partners" variable is revelation to this injury study. Do the authors have any references suggesting this is an important risk factor? If not, why include it at all?
The 25th and 75th percentiles of job tenure need not be reported.

Since the authors indicate that some of the workers worked in both kinds of mines, it is not clear if the incidence proportions are exclusive to type of mine. The authors must indicate that this was accounted for, both regarding injury. Also, why report incidence proportions and not incidence rates? The time at risk varied across workers and some were injured multiple times. This suggests the authors should report injury incidence rates.

It appears (on page 8) that the authors are reporting percentages of injuries, or injured workers (reporting at least one injury) rather than injury rates that use person-time as the denominator. They have some individual-level measure of employment duration. Why not use it throughout the manuscript? This use of prevalence of injured workers in some places and incidence rates in other places should be explained in the Methods section.

Duration of employment (Table 3) should be reported as average difference.

Tables 4 and 5 should report numbers in the cells and explain the numbers via the title, headings and use of footnotes.

Discussion

The authors show the effect of working in licensed and non-licensed mines differs by severity - the rate of severe injuries is lower in unlicensed places. Are the differences in rates by severity and mine type partly due to different reporting or recording practices? That is, do licensed mines do a better job of collecting information on less severe injuries? Are workers more likely to report less severe injuries in these places?

Were there different survey response rates for workers by type of mine operation? Are differences in gender a function of response bias?

In the US undocumented workers are often employed in more dangerous workplaces. Are there similar issues on Ghana?

I believe the authors ask workers to report injuries going back ten years. Was recall a problem? How was person-time calculated? Were the workers who worked in both types of mines asked to report injuries that happened at the different mines (over the past ten years)? Was person-time attributed to employment the different types of mines in which these workers were employed?

The authors claim the miners working in unlicensed sites reported more injury episodes than those in licensed sites. But it seems they did not account for person-time when indicating this. Why?
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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I am able to assess the statistics

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