UNICEF/Martine Perret

Financial incentive schemes in public health: Evidence from Sierra Leone

Erika Deserranno, Stefano Caria, Philipp Kastrau, Gianmarco León-Ciliotta, Julia Liborio

- This brief explores findings from a field study of a community health programme in Sierra Leone seeking to understand how financial incentives can impact public service and public health outcomes.
- Sharing incentives equally between Community Health Workers (CHW) and their supervisors generates an increase in household health visits that is 61% larger than the impact achieved when offering the incentive either exclusively to the worker or to the supervisor.
- The shared incentives scheme also translates into better access to pre- and post-natal care and lower disease incidence.
- This policy brief highlights the conditions needed for shared incentives to be the optimal incentive structure for an organisation and provides insights for policy.

POLICY BRIEF

NOVEMBER 2021

This project was funded by IGC Sierra Leone and Liberia

www.theigc.org

DIRECTED BY

FUNDED BY

Policy motivation

Sierra Leone is one of the poorest countries in the world, with the third highest maternal mortality rate and the fourth highest child mortality rate in 2017, according to 2018 data from the World Health Organization (WHO) Global Health Observatory. Such elevated mortality rates have been attributed to a slow post-civil war recovery, the 2014 Ebola outbreak, and a critical shortage of health workers, together with limited access to health facilities throughout the country.

In order to strengthen the provision of primary health care, Sierra Leone's Ministry of Health and Sanitation (MoHS) created a national community health programme in 2017. The programme is organised around Peripheral Health Units (PHUs), small health facilities staffed with doctors (when available), nurses, and midwives. Each PHU has typically a catchment area of seven to ten villages with one community health worker per village and one supervisor per PHU, with a total of approximately 15,000 health workers and 1,500 supervisors nationwide.

The success of this community health programme relies on health workers being willing and able to provide health services in their community. As health workers only receive a brief training prior to starting the job and supervisors are much more experienced, it is important for supervisors to support health workers with adequate training and advice in order to build trust in health workers and generate demand for their services in the community.

Generally, the efforts of workers in the various layers of organisations contribute to the production of a final output: without good management, frontline workers are often ineffective, and similarly, the efforts of managers can only pay off if frontline workers are motivated to do their job. Therefore, this study also seeks to answer an essential question pertinent to organisations with vertical structures: how should incentives be divided among an organisation's different layers?

Overview of the research

Many incentive schemes that economists studied in the past only target frontline workers (e.g., teachers, health workers, tax collectors) rather than their superiors. While these one-sided incentive schemes were often found to raise worker output compared to a control group, this study finds that one-sided incentives are not always optimal and in certain circumstances incentivising multiple layers across an organisation's hierarchy can lead to a larger increase in output.

The research studies a large community-based health programme in Sierra Leone and measures how the introduction of three different incentive schemes affects the number of household visits made by health workers.

Each PHU is composed of an average of eight health workers, who provide health services to their communities, and one supervisor, who trains and advises the health workers in the PHU, and who accompanies them on household visits. The role of the supervisors in this setting is thus not limited to "monitoring" the workers: they are "enablers" who play a crucial role in the health workers' ability to perform their tasks by providing them with the necessary skills and by building trust towards the health worker in the community.

The experiment takes place in 372 PHUs across six districts of Sierra Leone (Bo, Kenema, Bombali, Tonkolili, Kambia, and Western Area Rural). The 372 PHUs were randomly assigned to one in four groups of equal size:

- Group where only health workers receive an incentive of 2,000 SLL ($0.23) for each reported household visit.
- Group where only supervisors receive the 2,000 SLL incentive.
- Group where workers and supervisors split the incentive equally (1,000 SLL each).
- Control group that receives no incentive.

The study can assess which split of the incentives achieves the highest number of household visits. This is measured by interviewing a random subsample of households in the community and asking them about the number and the quality of the visits performed by the health worker. Due to potential misreporting, the analysis does not rely on the number of visits reported by the health worker.

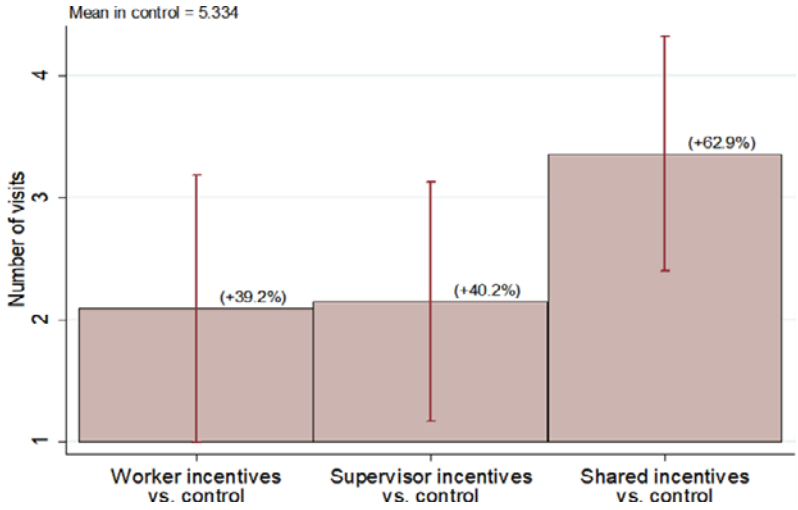
Key findings

The research shows that financial incentives perform best when they are shared between workers at different layers of the organisation.

Shared incentives maximise the number of visits. Workers in the control group without performance-based incentives carried out 5.3 visits per household in the six months prior to the final survey. This number significantly increases to 7.1 visits (a 40% increase over the control group) when the incentive is only offered either to the worker or to the supervisor, and to 8.7 visits (a 63% increase over the control group) when the incentive is shared between the worker and supervisor.

Overall, the shared incentives generate an increase in health visits that is 61% larger than the increase seen in either of the "one-sided" incentives groups. The increase in the quantity of household visits provided in the shared incentives group does not come at the expense of quality of the visits – a reduction in visit length or changes in targeting of households. Workers in the shared incentives group are equally likely to target poor and deserving households as in the other groups receiving incentives.

Figure 1: Effect of incentives on the number of household visits



Notes: The figure plots the difference in the number of visits provided by the health worker between each treatment group and the control group. The coefficients are estimated from a regression of the number of visits on the treatment dummies, controlling for stratification variables and clustering standard errors clustered at the PHU level. Bars are 95% confidence intervals. In brackets, we present the percentage increase in teach treatment group relative to the control group. Shared incentives also translate into better access to pre- and post-natal care and lower disease incidence. Pregnant or expecting women are more likely to report having received at least four pre-natal visits from any provider and having delivered in a health facility (rather than at home). Households also report fewer instances of fever among children below the age of five.

Shared incentives also translate into better access to pre- and post-natal care and lower disease incidence. Pregnant or expecting women are more likely to report having received at least four pre-natal visits from any provider and having delivered in a health facility (rather than at home). Households also report fewer instances of fever among children below the age of five.

In contrast, the interventions that targeted the full incentive either only to the worker or to the supervisor do not have significant impacts on pre- and post-natal care or disease incidence. The findings show that the shared incentives outperform both one-sided incentives not only in terms of final output but also in terms of cost-effectiveness: they lead to more visits at the same or lower cost. Among the two one-sided incentives, the supervisor incentives are more cost-effective: they cost less while achieving the same output. This is driven by the fact that health workers report a higher share of their visits in the worker incentive group.

Policy implications

The study shows that shared incentives are particularly effective due to how strongly worker and supervisor effort complement each other and the fact that the redistribution of incentives through side payments (e.g., from supervisor to worker) is uncommon in this organisation.

These features, which are likely to occur in many other organisations, have important implications for optimal policy design:

- Given the findings of this study, the optimal policy would offer 54% of the incentive payment to the worker, and 46% to the supervisor — a split that is very close to that offered in the shared incentives group.

- The optimal policy changes for different levels of how well supervisor and worker effort complement each other. In contexts where supervisor and worker effort complement each other very well, interventions that tie incentives to joint output are substantially more effective than interventions that incentivise effort directly.

- This result has broad implications for optimal pay structure in organisations where workers at different layers complement each other in the production of an output. However, the effectiveness of shared incentives may be weaker in organisations where the role of the supervisor is limited to monitoring, distributing tasks, or to making personnel decisions, and does not include training and advising workers.

Organisations should assess the extent to which effort complementarities are present when deciding about the structure of performance incentives for their workforce. In this research's context, local experts appear capable of making these assessments: 92% of the supervisors who participated in the study predicted the shared incentives would maximise household visits. Whether organisations should rely on local experts in designing the incentives, or whether they should calibrate incentives using more sophisticated tools, is an open question and requires further research.

For further information about this research and engagement with the IGC Sierra Leone and Liberia team, please get in touch with Niccolo Meriggi (niccolo.meriggi@theigc.org) or Abou Bakarr Kamara (abou.kamara@theigc.org).