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Measurement of population health needs in Nouna health district, Burkina Faso

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Evaluation of progress towards UHC, as well as the assessment of SDG emphasizes even more the need for high quality data to measure population health needs and specifically indicators with a new focus equity and access to care for all. The data provided by the existing data collection tools, the national Health Information System (HIS), panel surveys or Health and Demographic Surveillance Systems (HDSS) do not measure population health needs comprehensively and efficiently. However, the provided data about the health status and the utilisation of healthcare give a proxy about the health needs of a population in a given context or area.

In this thesis health needs were evaluated by assessing the health status of a population and the utilisation of healthcare in a modern medical institution in Nouna health district (NHD), Burkina Faso, using different health data sources. To overcome the limitations of the existing tools a new tool to measure health needs comprehensively and effectively, Comprehensive Disease Assessment (CDA), was developed and its feasibility, including the implementation costs, was evaluated.

The study took place in the NHD and combined information from the national HIS existing in the entire country with information collected in a household survey (HHS) performed in the HDSS area. The health status of the population was assessed regarding absolute and relative frequencies of pre-defined chronic and acute conditions. Moreover, the utilisation of healthcare in NHD was assessed by analysing

healthcare contacts among different age, gender and socio-economic groups over time. Next, a new tool, namely CDA, was designed and pre-tested. After the development of a special interface fieldworkers were trained to conduct the tablet-computer-based data collection and a pre-test was done in Nouna town and two villages. The feasibility of this new tool including in particular a cost analysis was performed. The costs including fixed and variable costs of survey implementation were identified and cost difference between the newly designed tool, CDA, and the old separate approach (HDSS plus HHS) was calculated.

The data from the HIS did not allow health needs predictions, as the information collected in the HIS represent only the visible part of the iceberg meaning among all ill persons, the individuals going to modern medical institutions. The reported data in the HHS should be more representative of the needs as they take into consideration individual perceptions, but the reported symptoms were not medically confirmed. Moreover, they represent just a snapshot of the year due to the cross-sectional design and our analyses showed a high impact of seasonality on health needs. That explains why diagnosed diseases in the HIS differed from the reported symptoms in the HHS. Next, the analyses showed that healthcare utilisation remained low in the NHD. However, both tools showed that children below five years used healthcare most proportionally to their population size, especially after malaria treatment was subsidised for this age group. Moreover, the data from the HHS showed that the poorest used healthcare less, particular in the rainy season when the needs are even higher.

The design of the CDA allows capturing seasonal variations and the collected data will provide information about the health needs and more comprehensive measures like DALY and QALY including both mortality and morbidity. At the same time,

quality of care can also be measured by looking at people's perception; and equity in healthcare utilisation by looking at different socio-economic groups. The longitudinal design will also allow analyses of trends over time. Moreover, the costing analysis estimated that the CDA survey would reduce the annual costs of survey implementation by about US\$45,000, and the data collection will be done more efficiently. Feasibility study showed that tablet-computer-based data collection will also lead to a better acceptability for both interviewers and the interviewed population.

There is still an urgent need to measure the true burden of disease and health needs in LMIC. The CDA is a comprehensive tool allowing the measurement of health needs, mortality and healthcare utilisation over the year, including the capture of seasonal variations, the measurement of perceived quality of care and equity in access to healthcare. Next, there is still a need to encourage people of all socio-economic groups to utilise healthcare, as healthcare utilisation remained very low in the NHD and in Sub-Saharan Africa in general. In particular, in order to achieve equity in healthcare utilisation, barriers and constraints to access healthcare need to be minimized. For a comprehensive picture of the local burden of disease two other elements would be needed. First, biological data collection within the households would improve the production of reliable and more comprehensive population health data. Second, the link between community data and health facility data would be an important step. Nevertheless, it is desirable to have data collection instruments like the CDA implemented on samples of individuals nationwide. In Burkina Faso there are five HDSS sites, which could easily implement the CDA to provide comprehensive and high quality data of population health and equity in utilisation of care for the entire country.