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## Designing and implementing a Health and Demographic Surveillance System in the Kurdistan Region of Iraq

### Editorial

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The Kurdistan Region of Iraq [KR] has seen remarkable economic and social change in the past two decades. As well as high rates of economic growth, tremendous changes in urbanisation, education, women's rights have been observed, as well as a growing stability regarding security. In this context, both demographic and public health theory would lead us to expect to see significant concomitant changes in both the health of the population and measured through population change. While it is possible to be optimistic about the future of health and population change in KR, there are clearly many challenges – not least with the medical system itself. A critical issue, however, relates to the measurement of changes in health and the population. Poor registration and its effect on being able to accurately measure health and demographic change has been highlighted as a key priority areas by the WHO and was afforded an entire issue of *The Lancet*. The latest Global Burden of Disease 2010 also highlighted the extreme difficulty in calculating accurate rates in low- and middle-income countries precisely because of general lack of adequate baseline data. Finally, adequate population data is critical for immediate and future allocation of resources through population projections; policy/health intervention evaluation; and an understanding of the demographic behaviour of particular sub-groups (from the highly educated to those in poverty) in a rapidly changing society. In KR, total fertility rates are currently measured at the province level by using the representative Multiple Indicator Cluster Survey (last taken in Iraq in 2011). However, as the survey designers note 'the primary objective of the sample design for

the Iraq Multiple Indicator Cluster Survey was to produce statistically estimates of most indicators with high precision at the national level, and with lower precision levels for smaller geographical units (governorates and districts)'. Given that the sample size in each district is just 311 households, it is impossible to examine determinants of health and population change at the regional level. Inadequate fertility data prevents viable population projections from being produced which, in turn, has a negative impact upon planning for future allocation of resources. While death registration is mandatory in KR, a recent study of Erbil City has shown that *cause of death* data (according to the ICD10 international standards) is, in fact, very poor – not least because of the 'dual' system of some reporting by doctors and others via the 'Court System'. Such inadequacies can lead to misleading policy recommendations as certain 'visible' causes of death (e.g. burns) are disproportionately seen in the data. A complete national census has not been conducted in Iraq since 1987 (although a partial census excluding Kurdish regions was carried out in 1997). A full Iraqi census has been planned since the early 2000's but has been repeatedly postponed. As such, the lack of adequate, comprehensive baseline data (through a National or Regional Census) means that both the numerator and denominators in calculations of health and population could, potentially, be flawed. It is important to recognise, however, that the creation of both National/Regional baseline data and complete registration of births, deaths and health status – all with detailed socio-economic variable – is an extremely great challenge in high-income

countries, let alone in low- and middle-income ones. For an area such as KR – similar to many low- and middle-income settings – the political, financial and manpower investment needed to obtain such a system would be extremely large and, potentially, unfeasible in the short- to medium-term. Recognising this, an alternative ‘first step’ in adequately measuring and observing health and population change has been set up in many low- and middle-income countries around the world. These Health and Demographic Surveillance Systems [HDSSs] require the intensive, longitudinal study of a ‘representative’ area (or areas) of the country under analysis. These areas, usually with populations between 15,000 and 250,000, are primarily studied in their own right, with some results carefully extrapolated to the level for which they are deemed to be ‘representative’ (e.g. urban areas of a country). In brief, a baseline comprehensive ‘census’ is carried out in the community under examination, then data concerning births, death, in-migration and out-migration are all carefully accounted for and ‘built onto’ the ‘census’ in order to provide a dynamic population cohort, or baseline. There are currently 36 HDSSs active in 16 countries within the global collaboration of the INDEPTH-Network. They are currently to be found in Sub-Saharan Africa and South- and

Southeast- Asia. There are currently none in Western Asia. These HDSSs have been employed in countless studies and have been demonstrated over many years to be a successful tool for both measurement of health/population and for policy evaluation. It has been found that HDSSs have been viable alternatives in settings, such as KR, where there are significant barriers to the implementation of National/Regional Censuses and Civil Registration Systems. While it is certainly challenging to guarantee any sense of representativeness, a recent study has suggested that such concerns can, to a degree, be allayed by comparing historical regional- and national-level and finding a broad accordance. An HDSS in KR could, potentially, produce a viable baseline data-set along with accurate, long-run data regarding the health and population changes within the region. Through the use of verbal autopsy, improved cause of death data can be realised and, by utilising existing models, interpretation of mortality data greatly improved. It would be a unique opportunity to advance the study of health and population in KR and could serve as a model for implementing HDSS elsewhere in Western Asia.

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