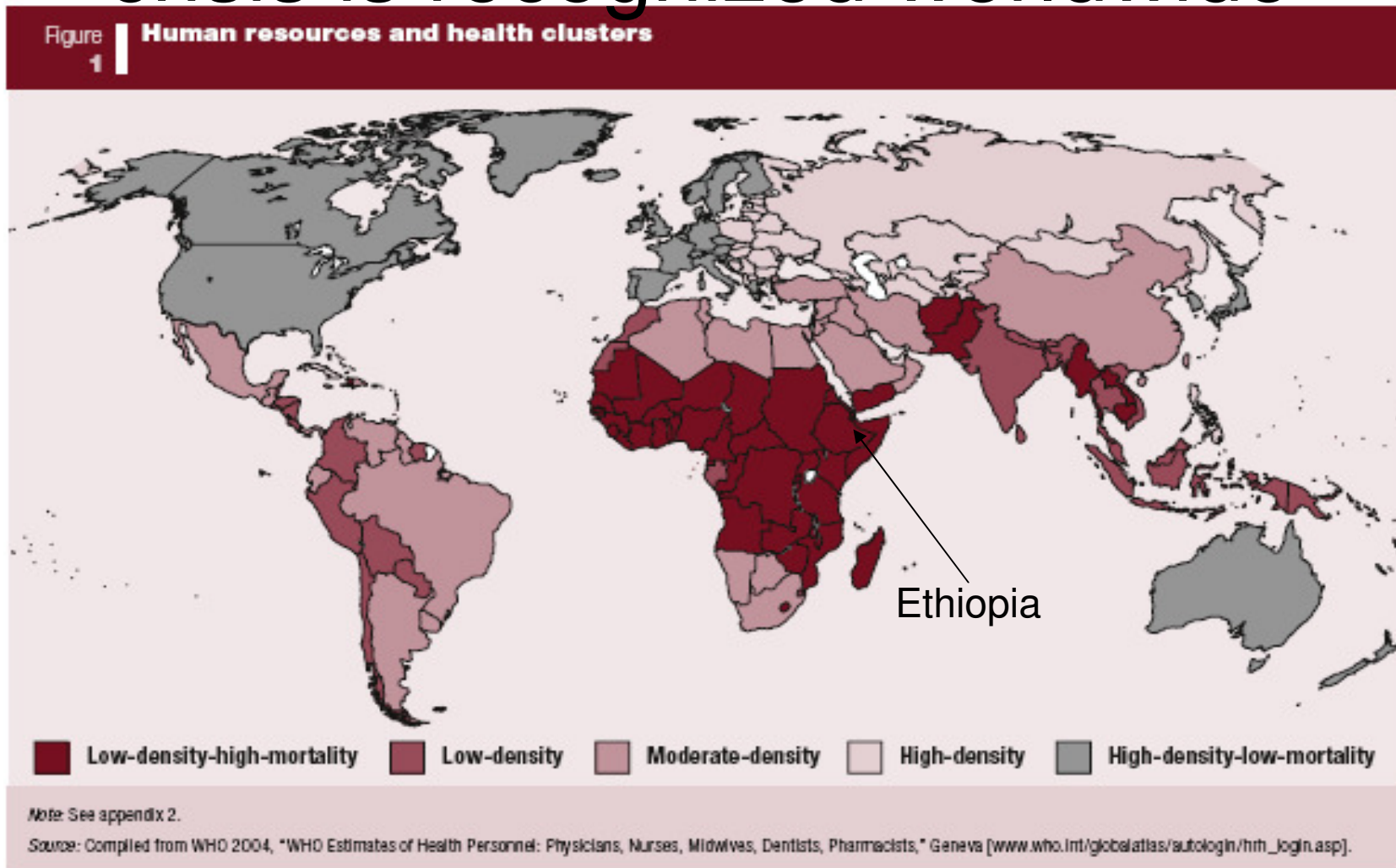


Measuring health workforce inequalities in the Ethiopian context: methods and applications

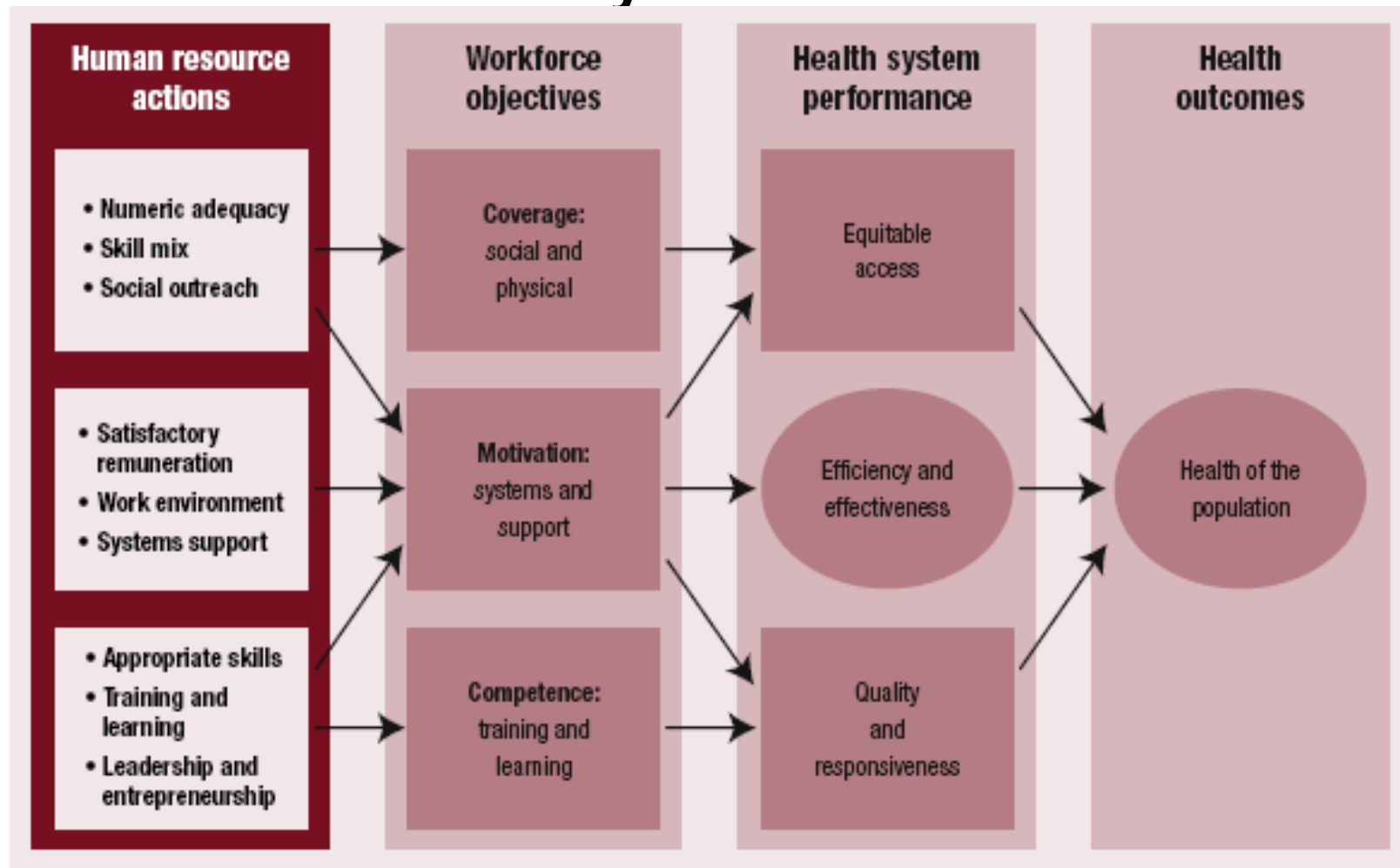
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Human resources for health (HRH) crisis is recognized worldwide



Health Workforce: Complex & Dynamic



The Challenge of Measuring HRH Inequalities in Ethiopia

- Large >1 million km²
- Underdeveloped: GDP per capita about US\$800 (PPP)
- 2nd largest population in SSA > 70 million
- one of the lowest HRH densities in the world (in the low-density – high-mortality cluster)
- suffers from extreme intra-country inequalities (urban/rural, inter-regional, ‘emerging regions’ in particular).
- health workforce has grown substantially in the last 10 years even though
 - from a weak base;
 - details vary with relative reduction in medical doctors & health assistants (HA) but phenomenal increase in the numbers of health officers (HO) and health extension workers (HEW)
- Difficult to measure in the context of a large number of disparate categories
- WHO: *World Health Report 2006* benchmarks
 - Only includes doctors, nurses and midwives – but large number of substitutes (e.g. HO, HEW)
 - Weight all as equal – but consider specialists have >20 years of education to community health workers [CHW] with few months of training
- Need for developing a methodology for measuring health workforce inequalities that takes account of the various disparities

Method: Measuring inequalities raises complex issues

- Equity viewed
 - across equity strata - sex, race, ethnicity, region, education, occupation, place
 - along dimensions of health status - risk, disease, death, social consequences of illness
 - along health care inequities: access, quality & cost of treatment
 - issues of ‘tolerable’ vs. ‘intolerable’ inequalities
- Need for multiple indicators to capture complexities, but opted to focus on normative population-based indicators:
 - availability of data and ease of application
 - Indicators such as physician/population ratios: less complex & easier to comprehend.
 - Compare with a “gold standard” to identify and quantify imbalance.
- Option: use WHO approach modified to reflect Ethiopian realities.

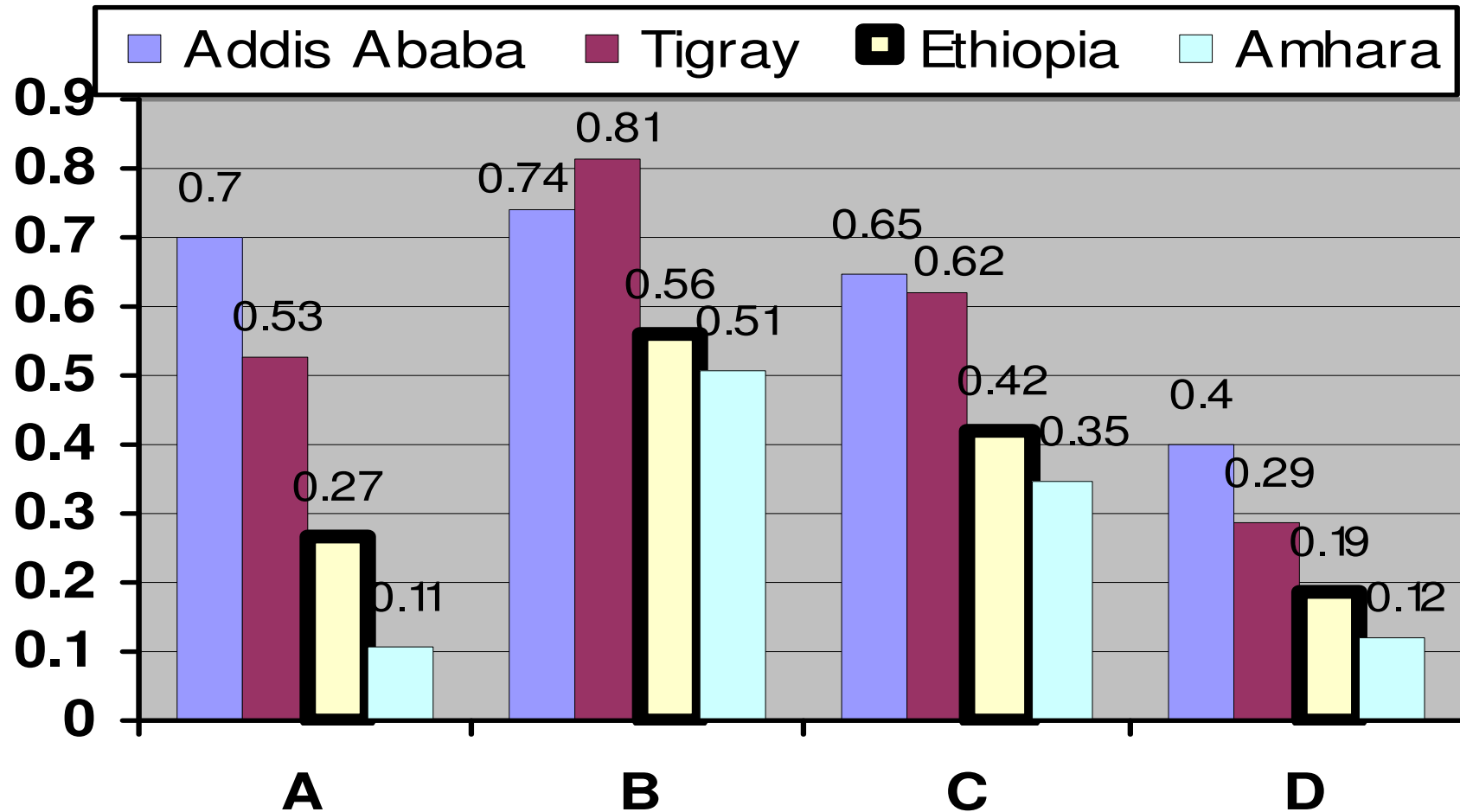
Method: Lines of Adaptation

- Which categories of HRH to include (to better capture inequalities & impact on health outcomes)?
 - Entire national health workforce (health service providers +health management & support workers)?
 - In all sectors (public, private, not-for-profit and for profit)?
 - Limit to **direct health services providers** & only to **public sector** (by far the largest health care provider), because of availability of data & ease of application.
I.e. Ethiopian context:
 - inclusion of doctors, nurses and midwives but also of middle level cadres (Health Assistants [HA], Health Officers [HO]...) and community health workers (HEW...) [who play important role in providing access to poor and remote populations] but
 - leaves out health workers supported by communities (CHA, TBA, CBRHA, Health Promoters...) & traditional practitioners.

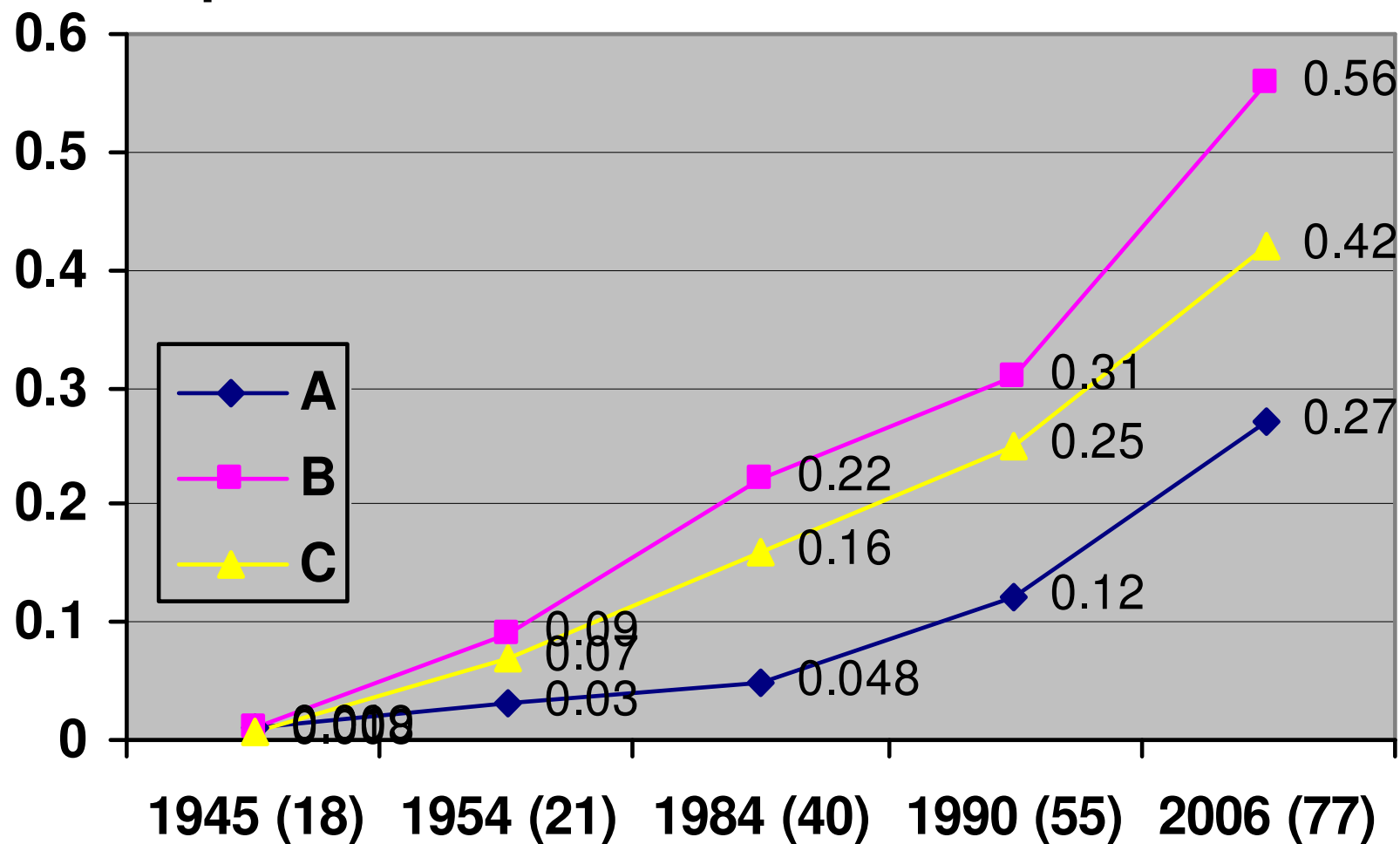
Method (cont.): Weighting

- WHO approach gives equal weight to all categories (MD, N & MW) included in analysis, is this acceptable if e.g. HEW included (i.e. first contact health care providers)
- Some form of weighting seems necessary to account for
 - the scope of the services and
 - the level of care they provide
- Number of weighting measures could be envisaged, only two
 - total number of years of education (including training); and
 - number of years of professional training alone were considered.
 - To compare with WHO approach, the average year of training of MD and nurses (21 years = 'gold standard') was used to weigh the number of years of education of each category. Various options explored to measure workforce density (WD):
- Option **A** – including only doctors (includes HO), nurses and midwives and considering them all as equals i.e. the WHO approach [$WD^0 = 1/p_i \sum D_i + N_i + M_i$]
- Option **B** – as in **A** but adding health assistants, health extension workers and frontline workers all considered as equals [$WD^1 = 1/p_i \sum D_i + HO_i + N_i + M_i + HA_i + HEW_i + FLW_i$]
- Option **C** – as in **B** but weighted by years of education [$WD^2 = 1/\Delta e p_i \sum S_i e_i + G_i e_i + HO_i e_i + N_i e_i + M_i e_i + HA_i e_i + HEW_i e_i + FLW_i e_i$]
- Option **D** – as in **C** but weighted only by years of professional training [$WD^3 = 1/\Delta t p_i \sum S_i t_i + G_i t_i + HO_i t_i + N_i t_i + M_i t_i + HA_i t_i + HEW_i t_i + FLW_i t_i$]

Result: Workforce density by Options, Selected Regions, 2007



Evolution of Workforce Density, Ethiopia 1945-2007 (Population in millions)



Discussion

- Measuring inequalities very important in informing policy decisions and plans but
 - lot of uncertainty on the concept of imbalances –
 - absence of a common framework for health workforce studies and the large differences regarding concepts, methodology and periodicity of data collection
 - considering only doctors and nurses/midwives leaves out, unduly, a large number of the workforce,
 - the un-weighted inclusion of other categories unacceptably ‘flattens’ the inequalities.
- Roles of health care workers vary & the professions have evolved differently between countries and over time in the same country. Difficult to show which professionals complement or substitute another because professional boundaries are not well defined.
- In the case of Ethiopia:
 - Some professions have come and gone (e.g. HO and HA) or changed names and functions several times (e.g. HA and nurses).
 - The issue of which categories to include is a difficult one.
 - Traditional practitioners and a large number of volunteer, community-based health workers have been left out of most research even though it is well known that they play an important role in health.
 - However, all those included have at one point or another served as first contact providers and therefore their inclusion could be justified.
 - Weighing them by years of education approximates closely the service they provide as first contact providers.
 - Attempting to refine the categorization would not serve much purpose at this stage.

Conclusion

- The results clearly show that health workforce density in Ethiopia is
 - very low even in the capital city and
 - unequally distributed country wide.
- Comparison of inequalities in HRH provision should be made cautiously but we believe that including broader categories of 1st contact health workers and weighting their possible contributions will help refine the evidence base for policy and planning of HRH.

