Spatio-temporal trends of maternal and child health service coverage and child mortality in poor and rich districts of Addis Ababa city, Ethiopia

By: Worku Dechassa (RET)

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The ‘leave no one behind’ principle underlying the 2030 Agenda for SD underscores the need for equitable progress toward all SDGs—including:
- Goal 3, which covers maternal, newborn and child health (MNCH),
- Goal 11, which calls for making cities safe, resilient and sustainable.

Much attention has been given to closing the gaps between rural and urban populations,
But the considerable inequities within cities have been neglected, including the lack of basic services in many cities’ poorest areas.

(United Nations, 2016)
• In Addis, there has been an increase in squatter settlements and urban slum areas, whose residents lack easy and consistent access to basic services such as health care (UN-Habitat, 2018)

• Such large concentrations of settlements impose an enormous burden to provide even the most basic urban services, including health care services for women and children.

• In Ethiopia MMR is 412/100,000LB

• Neonatal mortality 33/1000LB, under 5 mortality 59/1000LB

• Skilled care before, during, and after childbirth saves the lives of women and newborn babies.

• However, significant maternal health service utilization disparities exist between the highest wealth quintile and the lowest quintile. (UN-Habitat, 2021)
Objective

#1

- This study specifically aims to examine temporal trends and spatial variations of MNCH service coverage and child mortality among the poor (bottom 40%) and non-poor (top 60%) districts and households in Addis Ababa city.

Methods

Study

According to UN-Habitat 2020 estimates, Addis Ababa city had an over 5m population.
Methods #2

Sources of our data

• Administrative boundaries map of city with sub-city and districts
• World Bank poverty rate index
• Household wealth index data from the EDHS
• Health facility data (DHIS 2 2018 to 2021)
• EDHS data from 2000 to 2019

Data analysis

• Descriptive statistics
• Temporal trend and spatial analyses using Stata version 14 software, QGIS software version 3.16.
• Statistical significance assessed using p-values and confidence levels (p<0.05).
Major differences in coverage were observed for all maternal health service coverage indicators.

While coverage estimates in the top 60% of districts approximated universality, and in the case of C-section far exceeded population need,

low coverage in the bottom 40% of districts is most notable for SBA (54%) and also ANC4 (67%).

On the other hand, both poor and non-poor districts are performing well in child immunization services.
Result and Discussion #2

Trends of maternal health service coverage in urban Addis Ababa, 2019–2021. (DHIS 2) vs. EDHS 2000–2019

- ANC4 service coverage during 2019 to 2021 was higher in the top 60% districts than the bottom 40% districts.

- Skilled birth attendance in the top 60% (non-poor) districts was 100% over the period.

- This implies that maximum coverage was achieved in the top 60% districts.

- The situation was substantially worse in the bottom 40% (poor) districts, where SBA coverage remained below 60% during 2019 to 2021.

- PNC service coverage was also higher near 97% in the top 60% districts while it remained below 63% in the bottom 40% (poor) districts during 2019-2021.
Overall, high vaccination rates are found in both the top 60% and bottom 40% of districts, indicating a narrowing of the immunization service gap between poor and non-poor districts.
In summary, the image shows that there are significant disparities in maternal health service coverage between the top 60% and bottom 40% districts in Addis Ababa.
These findings reveal that both NMR and U5MR exhibited substantial declines, with NMR decreasing by 65% and U5MR by 77% over the two decades.

This translates to an average annual reduction of 5% for NMR and 8% for U5MR.

However, the results diverge when considering household wealth status.
Conclusion

- Addis Ababa exhibits substantial inequalities in MNCH service utilization as well as neonatal mortality.

- These disparities underscore the pressing need for a heightened focus on improving the health of women and children living in the most economically challenged conditions.
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Thank You!
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