Title: Scaling up Human Resources for Health in Rural India to achieve health-related SDGs: Projections for 2030

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Background: The World Health Organization (WHO) lists India among the 56 countries with a critical deficit of human resources for health (HRH). The deficit is exacerbated in rural regions with two-thirds of the population but a third of India’s HRH. The rural public health system faces severe deficits. We provide HRH deficit projections for India’s rural public health system and estimate the required growth to achieve the SDG 2030 target.

Methods: Average annual percent change (AAPC) at national and state levels for essential HRH (doctors, nurses, and midwives) at rural primary and community health centers for 2009-19 from Rural Health Statistics were analyzed using JoinPoint regression. Projections for 2020-30 were created based on AAPC values using exponential growth rate. HRH densities (per 10,000 people) were analyzed using the 2011 Census-based rural population projections adjusted for service utilization. The 2030 projected deficits (absolute differences) were assessed w.r.t 22.8 per 10,000 (WHO acute threshold), 44.5 (SDG Index threshold), and 55.5 (Govt. of India (GoI) SDG target).

Findings: During 2009-19, the essential rural HRH density annually changed at 2.59% (95%CI: 0.93-4.28). National density was 8.85 in 2019 and it is projected to reach 11.47 in 2030, missing
all three thresholds. In 2030, national deficits will be 0.47, 1.39, and 1.83 million HRH as per WHO acute, SDG Index, and GoI target thresholds, respectively. The growth rates should be 8.84%, 15.66%, and 17.91% to achieve corresponding thresholds. Among states, Kerala will be an achiever while Bihar will have the largest deficit.

**Interpretation:**
Essential rural HRH in India’s public healthcare is deficient with alarmingly low growth. At existing rates, India would not achieve the SDG HRH target density. Our focus on the rural public HRH and projections for SDG-2030 come at a critical time when India is reinvigorating its political commitment towards healthcare.

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