Assessing the Efficiency of HIV Prevention Interventions in Kenya

OBJECTIVE
To assess technical efficiency of four HIV prevention interventions: prevention of mother-to-child transmission (PMTCT), voluntary medical male circumcision (VMMC) and HIV testing and counseling (HTC) in Kenya.

BACKGROUND
Despite limited resources for HIV prevention interventions, few empirical studies investigate heterogeneity problems of production efficiency of HIV/AIDS services (which refers to the ability of a facility to produce a given quantity of preventive services at a minimum cost). “Optimizing the Response of Prevention: HIV Efficiency in Africa” (ORPHEA project) assessed determinants of efficiency for three HIV prevention interventions in Kenya.

METHODS
Inputs data were collected retrospectively from a nationally representative sample of government and non-government health facilities or sites for 2011 or 2012. Data sources included registers, reported data, and time-motion methods. Process quality was captured using cross-sectional provider vignettes and client exit interviews that were randomly selected.

ANALYSIS
Measuring costs: We computed total costs of production using both the quantity and the unit price of each input. Average cost was estimated by dividing the total cost per intervention by the number of HIV clients per each HIV prevention intervention.

Measuring process quality: Vignettes and client exit interviews assessed service quality measures for estimating provider competence and performance.

RESULTS
The sample included 71 sites for HTC, 62 sites for PMTCT, 42 sites for VMMC, and 14 sites for SW services for a total of 189 sites in 78 health facilities in 33 districts across the country. Facilities differed by type (hospitals, 48%; health centers, 34%; dispensaries, 13%; medical clinics, 5%), ownership (government, 72%, non-governmental, 10%; private, 18%), size (personnel and patient clients) and number and cost of services. 283 vignettes and 489 exit interviews were administered to providers and clients, respectively.

CONCLUSIONS
1. Economies of scale are demonstrated with increasing volumes especially in the lower level facilities; health centres and dispensaries.
2. Provider competence and performance analysis suggest that higher levels of quality are not necessarily associated with higher costs.
3. Assessment of costs variation across provider types and levels show there is potential to increase efficiency within the health system.
4. Unit cost analysis shows staff costs and composition offer the highest potential to implement actions to improve efficiency.

Estimated weighted average costs were:
- US$21.2 per HTC client
- US$55.0 per women tested in PMTCT services
- US$102.2 per MC client
- Staff costs account for more than 80% of the average costs in each prevention intervention.
- Variation in average cost for HTC and PMTCT by facility type is limited, except for private hospitals.
- VMMC costs show important variations among different types of facilities, resulting cheaper to perform VMMC intervention in health centres.
- Scale and quality explain approximately 20-30% of the variability in average costs.