ABSTRACT

Background: Integration of cervical cancer screening into HIV clinics may be an efficient method for decreasing the burden of cervical cancer in low- and middle-income countries. As countries contemplate adopting this practice, choice of screening method - Papanicolaou (Pap) smear, visual inspection with acetic acid (VIA), human papillomavirus (HPV) testing - will be of key importance, and costs should be considered in the decision-making process. The purpose of this study was to determine per screening costs of each method in an integrated setting. Methods: A micro-costing study was conducted at Coptic Hope Center for Infectious Diseases and Kenyatta National Hospital in Nairobi, Kenya from August to October 2014. We assessed direct medical costs (e.g., supplies, provider visits) and direct non-medical costs (e.g., transportation) of each testing method via interviews with administrative, clinical, and laboratory staff. To determine indirect costs (e.g., patient time, caregiver costs), we conducted a time-and motion survey and patient interviews with 148 women receiving cervical cancer screening (Pap or VIA), and supplementary interviews with patients receiving treatment for pre-cancerous lesions and cervical cancer. As HPV testing is not frequently used, indirect costs for HPV testing were extrapolated from Pap smear data and direct costs were calculated based on clinical and administrative interviews, and on standard operating procedures for processingHPV laboratory tests.

Results: VIA was the least expensive method ($11.17 per screen), followed by Pap smear ($16.32 per screen) and HPV testing ($25.19 per screen). Per-screen direct medical costs - particularly supplies, equipment and lab costs - were the main cost drivers (VIA: $5.87; Pap: $11.28; HPV testing: $20.16). Direct non-medical costs and indirect costs were similar across methods (direct non-medical: $2.65-$2.84 per screen; indirect: $2.19-$2.65 per screen).

Conclusions: These findings provide estimates of cervical cancer screening costs integrated into care in an HIV clinic in Kenya that are more comprehensive and more up-todate than currently exist in the literature. In addition to informing policy makers on the costs of different cervical cancer screening methods, these findings may also be used in future costeffectiveness analyses to assess the incremental cost per clinical outcome (e.g., in terms of reduced of morbidity and mortality).