

# Self-collection for HPV screening: a game changer in the elimination of cervical cancer

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Self-collection will facilitate new community-led, co-designed delivery models that could greatly increase the acceptability and uptake of screening



In December 2017, the Australian National Cervical Screening Program (NCSP) underwent a major renewal, transitioning from two-yearly cytology screening for people with a cervix (“women”) aged 18–20 to 69 years, to five-yearly primary human papillomavirus (HPV) screening for women aged 25–74 years. The NCSP renewal was driven by accumulated international evidence for the very high effectiveness of primary HPV screening for predicting current and future risk of pre-cancerous lesions and invasive cancer.<sup>1</sup> It was also prompted by the Australian HPV vaccination program that commenced in 2007, which has resulted in rapid population-level reductions in the incidence of pre-cancerous lesions in young women.<sup>2</sup>



A flexible approach to screening was required to effectively manage risk in both vaccinated and unvaccinated women. HPV screening with partial genotyping is such an approach, stratifying a woman's risk by HPV type and taking into account both direct and indirect (herd) vaccine-induced protection against higher risk HPV types (HPV16/18). The transition was supported by the 2013–14 Medical Services Advisory Committee (MSAC) review of the evidence, and modelling of the new program predicted that long term cervical cancer incidence and mortality would be reduced by 24–34% in both unvaccinated and vaccinated women.<sup>3</sup>



One anticipated benefit of primary HPV screening was that a woman could collect her own sample with a vaginal swab, providing an opportunity to reverse the decline in overall screening participation rates and to reduce long standing inequities in participation.<sup>2</sup> In this issue of the *MJA*, Creagh and colleagues report the results of a qualitative study in Victoria that found very high levels of acceptance of self-collection among screening participants and primary care practitioners.<sup>4</sup> Most screening participants described the experience of self-collection positively and reported a greater sense of control over their health.

Self-collection in the renewed NCSP was originally restricted to women who had never been or were under-screened, as evidence



at the time suggested that test sensitivity could be slightly lower with self-collected samples.<sup>5</sup> Uptake by the approximately one million eligible under-screened women has been very limited.<sup>4</sup> Since the 2017 NCSP transition, an updated synthesis of study findings has found that the cross-sectional sensitivity of polymerase chain reaction (PCR)-based HPV DNA testing is similar for practitioner- or self-collected samples (pooled ratio for detecting cervical intraepithelial neoplasia grade 2 or worse: 0.99; 95% confidence interval, 0.97–1.02).<sup>6</sup> Australian modelling has subsequently indicated the potential benefits at the population level of removing restrictions on self-collection.<sup>7</sup>

In light of this evidence, the NCSP self-collection policy has been reviewed, and the MSAC recently supported offering all screen-eligible people the choice of providing self-collected vaginal or clinician-collected cervical samples, access in both cases being mediated by a health care provider.<sup>8</sup> If approved and funded, universal access to self-collection could be included in the NCSP from mid-2022.

Self-collection sampling devices, however, are not yet listed on the Therapeutic Goods Administration Register of Therapeutic Goods; consequently, testing thus far has been confined to the few laboratories that have completed in-house validation. Although self-collection will be facilitated with a view to undertaking PCR-based HPV DNA testing, analysis of self-collected samples with signal-amplified DNA or mRNA-based technologies, both of which can be used with practitioner-collected samples, is not yet supported by evidence. Women positive for the highest risk HPV types (16/18) are referred directly to colposcopy, but those with non-16/18 types require cytology triage. As immediate reflex cytological analysis is not possible with self-collected samples, women need to be recalled before management is recommended. Research with the aim of validating reflex triage based on self-collected samples, allowing the immediate determination of appropriate management, is underway.<sup>9</sup>

Women worldwide are embracing the choice and control that self-collection enables. Cervical cancer has been a disease of inequity, and rates reflect historical access to screening; most

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of the 311 000 deaths each year are in low and middle income countries.<sup>10</sup> The new World Health Organization (WHO) cervical screening guidelines, supported by an extensive evidence review and modelling and published in July 2021, focus on HPV screening with point-of-care and self-collection options. It is hoped that self-collection will be a key enabler for eliminating cervical cancer, defined as reducing the local incidence to fewer than four cases per 100 000 per year. WHO global goals specify that 90% of young girls will be vaccinated against HPV by 2030, 70% of women will have been screened for HPV at least twice in their lifetime, and that 90% of women who require treatment will have received it.<sup>11</sup>

Although Australia is poised to be the first country to eliminate cervical cancer (by 2028–2035<sup>12</sup>), it has not yet reached the WHO HPV screening participation target (current rate: 52%).<sup>13</sup> Self-collection will facilitate new community-led, co-designed screening delivery models that could greatly increase screening acceptability and uptake, including among Aboriginal and Torres Strait Islander people, culturally and linguistically diverse people, and gender- and sexually diverse people. Barriers to screening for Indigenous women, for example, have historically limited participation and resulted in increased cervical cancer incidence and mortality rates.<sup>14</sup> Because of the decades-long lag between HPV vaccination of young adolescents and its impact on cervical cancer in adult women, increased uptake of cervical screening is the major driver of elimination timing. Self-collection is the short and intermediate term game changer: the gateway to achieving equity of screening access in Australia and overseas, leading to the elimination of cervical cancer for all.

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