Bilaga till rapport

Screening för livmoderhalscancer med självprovtagning för HPV, rapport 338, (2021)

Bilaga 3, Tabeller över inkluderade studier

Innehållsförteckning

Frågeställning 2

Polman 2019

Clinical setting and study design	**Design: Randomised control study** **Inclusion/exclusion:** Exclusion criteria were previous hysterectomy and childbirth less than 6 months ago, as well as current pregnancy. **Allocation:** Women were randomly assigned (1:1) to the intervention group (HPV self-sampling) or the control group (clinician-based sampling).
Patient characteristics	**Population:** Women aged 29–61 years; (mean age 45,5 years in self-sampling group and 45,7 years in the clinician-based sampling group) **Sample size:** Self-sampling group: n=7643, Clinician-based sampling group n=6282 **Setting:** Women were invited to participate in the study as part of their regular screening invitation for the organised screening programme in the Netherlands
Index and comparator tests	**Index test (self-collected sample):** Women received a package including a brush-based self-sampling device (Evalyn Brush), and written and graphical user instructions about the device. Women were requested to self-collect a cervicovaginal sample and return the dry brush to the laboratory in a freepost return envelope. **Comparator text (clinician collected sample):** Women were invited to

	their general practitioner's practice to provide a clinician collected sample. These samples were obtained with the Cervex-Brush, a brush device used for cervical sampling by a physician during internal examination and were collected in a vial with 10 mL ThinPrep PreservCyt media. **Triage test (cytology):** Women in the self-sample group with a positive HPV test were referred to their general practitioner to give a liquid-based cytology sample for cytological assessment. In the clinicial-sample group, reflex cytology was done for women with a positive HPV test result based on the available clinician-collected sample. Women with abnormal cytology (borderline or mild dyskaryosis or worse were referred for colposcopy.
Reference standard	**Histologically confirmed CIN2+:** At the colposcopy visit, biopsies were taken from suspected areas according to standard procedures in the Netherlands
Screening pathway	
Outcomes	**Absolute sensitivity*:** n/N (% [95% CI]) Self-sampling: 78/84 (92.9% [87.3–98.4]) Clinician-based sampling: 106/110 (96.4% [92.9–99.9]) **Absolute specificity*:** n/N (% [95% CI]) Self-sampling 7074/7532 (93.9% [93.4–94.5]) Clinician-based sampling 5831/6190 (94.2% [93.6–94.8]) **Relative accuracy** (self-sampling vs clinician-based sampling) % (95% CI) Sensitivity: 0.96 (0.90–1.03) Specificity: 1.00 (0.99–1.01) * Sensitivity was estimated by the number of positive HPV cross-test results among women with detected disease. Specificity was estimated by the number of negative HPV test results among women without detected disease.
Risk of bias	Unclear
Notes	The proportion of women providing informed consent in our opt-in study was 8.8%, which raises concerns about the generalisability of the results beyond the study population. There are some caveats to the analysis: the sensitivity of HPV-self test could have been biased by the non-attendance of hrHPV+ women for a follow-up of the cytology test.

Frågeställning 3

Ajenifuja 2018

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: No further details given
Patient characteristics and setting	**Population**: Women presenting for cervical cancer screening **Sample size**: 194 **Setting**: A community-based clinic for screening of cervical cancer as well as other diseases of the female genital tract, Nigeria
Index tests	Self-sampled test: HPV DNA (HPV GenoArray test kits by Hybribio Biochemical Company Limited, China) **Instructions**: The respondents were taught how to perform the procedure for sampling the upper vagina according to the instructions on the sample collection kit **Sample collection**: Patients stratified into two groups. Respondents in group A underwent provider sampling before self-sampling, while respondents in group B had self-sampling before undergoing provider sampling **Sampling device and storage medium**: Cytobrush (cervexR) cervical cell sampler and Hybribio HPV DNA collection kit
Comparator test	Clinician-sampled HPV tests: HPV DNA (HPV GenoArray test kits by Hybribio Biochemical Company Limited, China) **Sample collection:** Patients stratified into two groups by a systematic random sampling technique. Respondents in group A underwent provider sampling before self-sampling, while respondents in group B had self-sampling before undergoing provider sampling. **Sampling device and storage medium**: Cytobrush (cervexR) cervical cell sampler and Hybribio HPV DNA collection kit
Flow and timing	Time interval between index and comparator test: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** provider sampling: 12/194 (6.2%) self-sampling: 14/194 (7.2%)

	HR-HPV detection agreement: Kappa (95% CI) Provider sampling vs self-sampling: 0.47 (21.3 to 72.3%)
Risk of bias	Unclear

Asciutto 2017

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: Not stated
Patient characteristics and setting	**Population**: Women aged 19 to 71 years with an abnormal cervical smear in the screening program or with symptoms were invited to the Outpatient Colposcopy Clinic at regional hospitals in Kristianstad and Helsingborg **Sample size**: 218 **Setting**: Outpatient Colposcopy Clinic at regional hospitals
Index tests	Self-sampled test: Cobas® 4800 HPV test (Roche Molecular Diagnostics, Pleasanton, CA, USA) **Instructions**: The women were asked to place a swab 6–10 cm into the vagina and rotate it 360 degrees 3–4 times before putting the swab into the tube provided. **Sample collection**: All vaginal self-samples were performed by the participating women at the clinic before undergoing a gynaecological examination **Sampling device and storage medium**: Cobas® PCR Female Swab Sample Kit
Comparator test	Clinician-sampled HPV tests: Cobas® 4800 HPV test (Roche Molecular Diagnostics, Pleasanton, CA, USA) **Sample collection:** The gynaecologist collected a cervical sample [Cobas® PCR Female Swab Sample Kit] and a liquid-based cytology (LBC) specimen from the cervix **Sampling device and storage medium**: no further details given
Flow and timing	Time interval between index and comparator test: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives**

	clinician-collected cervical sample: 166/213 (77.9%) self-collected vaginal sample: 167/213 (78.4%) **HR-HPV detection agreement: Kappa (95% CI)** clinician-collected sample vs self-collected dry swab: 0.82 (0.73–0.91)
Risk of bias	Unclear

Asciutto 2018

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: Exclusion criteria were status after hysterectomy, history of earlier gynecological cancer, or current oncological treatment
Patient characteristics and setting	**Population**: Women attending the women's clinic because of a referral for colposcopy due to the presence of abnormal findings in their screening results **Sample size**: 205 **Setting**: A women's clinic, Sweden
Index tests	Self-sampled test: HPV mRNA (Aptima Vaginal Swab Specimen Collection Kit, Hologic Inc, MA, USA) **Instructions**: All participating women received oral and written instructions on how to use the self-sampling kit (placing a swab 3–4 cm up into the vagina and rotating it 360°, two or three times) **Sample collection**: All vaginal self-samples were performed by the participating women at the clinic before undergoing a gynecological examination **Sampling device and storage medium**: Cotton swab in a test tube containing transport media
Comparator test	Clinician-sampled HPV tests: HPV mRNA (Aptima Vaginal Swab Specimen Collection Kit, Hologic Inc, MA, USA) **Sample collection:** Prior to colposcopy, a clinician-taken HPV sample was collected from the cervix with a swab **Sampling device and storage medium**: no further details given
Flow and timing	Time interval between index and comparator test: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests

	Detection of HR-HPV positives clinician-collected cervical sample: 136/205 (66.3%) self-collected vaginal sample: 132/205 (64.4%) **Correlation between vaginal HPV mRNA and cervical HPV mRNA analyses (Spearman rho correlations)** Rs=0.565 ($p < 0.01$) **HR-HPV detection agreement: Kappa (95% CI)** Kappa not stated
Risk of bias	Unclear

Bergengren 2018

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: Eligible if they were 55–60 years old with a positive HR-HPV and normal cytology result at their exit screening (performed between January 1, 2012, and December 31, 2014). Women who had undergone hysterectomy after their exit sample was collected were excluded.
Patient characteristics and setting	**Population**: Women who were initially recruited from an age-specific prevalence study of HPV, and then invited to attend a follow-up visit at the Women's Health Department Clinic **Sample size**: 119 **Setting**: A women's Health Department at a University Hospital, Sweden.
Index tests	Self-sampled test: HPV using a DNA-based assay (CLART HPV2; Genomica, Madrid, Spain) **Instructions**: No other than the manufacturer's written and illustrated leaflet on how to perform a self-sample, which was included in the kit **Sample collection**: The sample was taken at home and sent in by mail **Sampling device and storage medium**: A dry brush (Evalyn; Rover, Oss, Netherlands)
Comparator test	Clinician-sampled HPV tests: HPV using a DNA-based assay (CLART HPV2; Genomica, Madrid, Spain) **Sample collection:** Professional sampling was performed by one experienced midwife **Sampling device and storage medium**: Liquid-based sampling (Hologic, Marlborough, MA, USA)

Flow and timing	Time interval between index and comparator test: within one week after comparator sample was taken.
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: 54/119 (45.4 %) self-collected dry swab: 54/722 (45.4 %) **HR-HPV detection agreement: Kappa (95% CI)** clinician-collected sample vs self-collected dry swab: 0.66 (0.53–0.80)
Risk of bias	Unclear

Campos 2014

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: ≥ 18 years of age and had not undergone a hysterectomy
Patient characteristics and setting	**Population**: Women who were forwarded to gynaecological exams **Sample size**: 170 **Setting**: The public health system. Brazil
Index tests	Self-sampled test: HPV DNA (Wizard® Genomic DNA Purification Kit, Promega, Corporation, Madison, WI, USA) **Instructions**: After verbal and diagrammatic instruction the women self-collected a vaginal specimen **Sample collection**: The women performed the self-collections in the clinician's office or near the clinician's office prior to the clinical examination and collection **Sampling device and storage medium**: No further details given
Comparator test	Clinician-sampled HPV tests: HPV DNA (Wizard® Genomic DNA Purification Kit, Promega, Corporation, Madison, WI, USA) **Sample collection:** A health professional used a speculum and collected an endocervical specimen **Sampling device and storage medium**: No further details given
Flow and timing	Time interval between index and comparator test: consecutive

Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** (HPV16, 18, 31, 33, 45) clinician-collected sample: 39/170 (22.9%) self-collected sample: 45/170 (26.5%) **HPV detection agreement: Kappa (95% CI)** clinician-collected sample vs self-collected sample: 0.72 (CI not stated)
Risk of bias	Unclear

Catarino 2015

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: Women were eligible if they were over 30 years old, not pregnant women, no history of hysterectomy, and if they understood the study procedures and voluntarily agreed to participate by signing a written informed consent form.
Patient characteristics and setting	**Population**: Women from the colposcopy clinic **Sample size**: 150 **Setting**: The colposcopy clinic of Geneva University Hospitals
Index tests	Self-sampled test: the Anyplex II HPV28 (H28) Detection test (Seegene, Seoul, South Korea) **Instructions**: A research nurse gave oral instructions to participants, who were instructed to wash their hands before the specimen collection procedure. Each participant received a package containing a specimen collection kit. **Sample collection**: At the clinic **Sampling device and storage medium**: The Rovers Viba-Brush (RoversMedical Devices B.V., Oss, The Netherlands) was used for self-collection with the FTA cartridge, and the mid-turbinate flocked vaginal swab (FLOQSwabs™; COPAN Italia) used for self-collection with the s-DRY method
Comparator test	Clinician-sampled HPV tests: the Anyplex II HPV28 (H28) Detection test (Seegene, Seoul, South Korea) **Sample collection:** During the subsequent colposcopy consultation, a physician also collected a cervical sample for HPV testing. **Sampling device and storage medium**: a swab immersed in a collection medium (ESwab™; COPAN Italia, Brescia, Italy)

Flow and timing	Time interval between index and comparator test: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: 56.2 % self-collected dry swab: 62.3% self-collected cytobrush FTA: 54.6% **HR-HPV detection agreement: Kappa (95% CI)** clinician-collected sample vs self-collected dry swab: 0.64 (0.50–0.78) clinician-collected sample vs self-collected cytobrush FTA: 0.64 (0.50–0.77)
Risk of bias	Unclear

Catarino 2017

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: Women were eligible if they were at least years old, not pregnant women, no history of hysterectomy, and if they understood the study procedures and voluntarily agreed to participate by signing a written informed consent form.
Patient characteristics and setting	**Population**: Women from the colposcopy clinic **Sample size**: 150 **Setting**: The colposcopy clinic of Geneva University Hospitals
Index tests	Self-sampled test: not stated, analyzed with the Xpert HPV Assay **Instructions**: Each participant received a package containing a specimen collection cotton swab in a plastic tube and instructions for use. **Sample collection**: At the clinic **Sampling device and storage medium**: a dry swab
Comparator test	Clinician-sampled HPV tests: cobas HPV Test (Roche Diagnostics, Basel, Switzerland), analyzed with the Xpert HPV Assay **Sample collection:** A physician collected a cervical specimen **Sampling device and storage medium**: Cervex brush (Rovers Medical Devices B.V., Oss, Netherlands), which was immediately placed in PreservCyt
Flow and timing	Time interval between index and comparator test: consecutive

Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample (cobas): 67/146 (46.2%) clinician-collected wet sample: 61/146 (46.2%) self-collected dry swab 56/114 (49.1%) **HR-HPV detection agreement: Kappa (95% CI)** clinician-collected wet sample vs self-collected dry swab: 0.64 (0.50–0.78)
Risk of bias	Unclear

Chen 2016

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: Women aged 18 years and over
Patient characteristics and setting	**Population**: Half of the study population was recruited from women with both negative cytology and histopathology, according to general cervical screening findings. The other participants, with abnormal cytology or pathology results were selected from the cervical disease outpatient clinic. **Sample size**: 202 (101 patients with cervical lesions and 101 patients without cervical lesions or with non-specific cervicitis) **Setting**: A large gynecological outpatient clinic. China
Index tests	Self-sampled test: HPV DNA (Abbott RealTime High-Risk HPV Test) **Instructions**: Written instructions with illustrations provided by the manufacturer and translated into Chinese were given to each potential participant before enrollment **Sample collection**: After enrollment all women collected a cervicovaginal specimen in a separate room at the clinic **Sampling device and storage medium**: Dry self-sampling device, the Evalyn Brush. The samples were transferred to 20 ml of ThinPrep medium about 16–18 weeks after collection.
Comparator test	Clinician-sampled HPV tests: HPV DNA (Abbott RealTime High-Risk HPV Test)

	Sample collection: After self-sampling, all women underwent their scheduled colposcopy examination, by a physician, during which a cervical specimen was collected **Sampling device and storage medium**: cervical brusch (The Digene Female Swab Specimen Collection Kit) and 1ml of Specimen Transport Medium (STM) for storage. After 16–18 weeks the samples were transferred to ThinPrep medium before testing.
Flow and timing	Time interval between index and comparator test: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** physician-collected sample: 93/202 (46.0%) self-collected dry swab: 92/202 (45.5%) **HR-HPV detection agreement: Kappa, weighted (95% CI)** physician-collected sample vs self-collected dry swab: 0.95 (0.91–0.99)
Risk of bias	Unclear

Chernesky 2014

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: no further details given
Patient characteristics and setting	**Population**: Women between 18 and 63 years of age (mean, 39 years) referred for colposcopy due to previous abnormal cytology and/or positive HPV results **Sample size**: 580 **Setting**: Women's health colposcopy clinic. Canada
Index tests	Self-sampled test: HPV mRNA (AHPV assay, Hologic/Gen-Probe Inc) **Instructions**: Each woman followed an illustrated set of instructions to self-collect a vaginal sample **Sample collection**: The women performed the self-collections in the clinician's office or near the clinician's office before seeing the physician **Sampling device and storage medium**: Tapered round brush on the end of a round plastic stick and a tube of transportation media (APTIMAi SCT kit, Hologic/Gen-Probe Inc)

Comparator test	Clinician-sampled HPV tests: HPV mRNA (AHPV assay, Hologic/Gen-Probe Inc) **Sample collection:** A physician first collected a vaginal sample, and after insertion of a speculum three cervical samples were collected **Sampling device and storage medium**: Vaginal sample collected with tapered round brush on the end of a round plastic stick and a tube of transportation media (APTIMAi SCT kit, Hologic/Gen-Probe Inc) Cervical samples collected in the following order: L-Pap into PreservCyt with a cervex broom; APTIMA cervical SCT; L-Pap into SurePath with a cervix broom.
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-collected HPV tests and physician-collected HPV tests **Detection of HR-HPV positives** physician-collected cervical sample: 241/554 (43.5%) physician-collected vaginal sample: 195/569 (34.3%) self-collected vaginal sample: 242/569 (42.5%) **HR-HPV detection agreement: Kappa (95% CI)** physician-collected vaginal sample vs self-collected vaginal sample: 0.68 (0.62–0.74) physician-collected cervical sample vs self-collected vaginal sample: 0.63 (0.57–0.70)
Risk of bias	Unclear

Cho 2019

Patient sampling	**Design**: Multicenter cross-sectional study **Inclusion/exclusion**: Exclusion criteria were: previous treatment for cervical disease (including the loop electrosurgical excision procedure, cold knife conization, cryotherapy, and laser therapy), previous hysterectomy, prior chemotherapy, or radiation treatment for cervical neoplasia or another concurrent cancer, HIV infection or AIDS, or pregnant at the time of the study.
Patient characteristics and setting	**Population**: Women aged 20–50 years, admitted for surgical treatment of high grade squamous intraepithelial lesions (HSIL) or ovarian disease. **Sample size**: 101

	Setting: Four medical centers. Korea.
Index tests	Self-sampled test: HPV DNA (three different assays) Anyplex II HPV (Seegene, Seoul, South Korea) RealTime HR-S HPV assays (Sejong Medical Co., Ltd., Paju, South Korea) Roche Cobas HPV (Roche Molecular Diagnostics, Pleasanton, CA, USA) **Instructions**: Each participant was provided with a self-sampling kit with illustrated instructions. Participants were instructed to collect a vaginal sample by inserting the plastic brush one inch into the vagina, rotating the swab for 15 seconds, and then remove it. **Sample collection**: The women performed the self-collections in the clinician's office or near the clinician's office before the clinical examination and sample collection. **Sampling device and storage medium**: Plastic brush (Flocked Swab, manufactured by Noble Biosciences, Inc., Gyeonggi-Do, South Korea) and PreservCyt Solution (ThinPrep, manufactured by Hologic, Marlborough, MA, USA))
Comparator test	Clinician-sampled HPV tests: HPV DNA (three different assays) Anyplex II HPV (Seegene, Seoul, South Korea) RealTime HR-S HPV assays (Sejong Medical Co., Ltd., Paju, South Korea) Roche Cobas HPV (Roche Molecular Diagnostics, Pleasanton, CA, USA) **Sample collection:** Participants underwent a pelvic exam during which the clinician-collected a cervical sample using a cervical brush **Sampling device and storage medium**: Cervical Brush (Noble Biosciences, Inc., Gyeonggi-Do, South Korea) and ThinPrep, PreservCyt Solution (Hologic, Marlborough, MA)
Flow and timing	Time interval between index and comparator test: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** Realtime HR-S HPV: clinician-collected cervical sample: 87/101 (86.1%) self-collected vaginal sample: 84/101 (83.2%) Anyplex II HPV: clinician-collected cervical sample: 89/101 (88.1%) self-collected vaginal sample: 81/101 (80.2%) Cobas HPV:

	clinician-collected cervical sample: 89/101 (88.1%) self-collected vaginal sample: 79/101 (78.2%) **HR-HPV detection agreement: Kappa (95% CI)** Realtime HR-S HPV: self-collected vaginal sample vs clinician-collected cervical sample: 0.58 (0.36–0.80) Anyplex II HPV: self-collected vaginal sample vs clinician-collected cervical sample: 0.49 (0.26–0.71) Cobas HPV: self-collected vaginal sample vs clinician-collected cervical sample: 0.51 (0.30–0.73)
Risk of bias	Unclear

Cho 2020

Patient sampling	**Design**: Multicenter cross-sectional study **Inclusion/exclusion**: Eligible if they were between the ages of 20 and 60, not pregnant at the time of the study, and have had none of the following: previous treatment for cervical disease (including the loop electrosurgical excision procedure, cold knife conization, cryotherapy, and laser therapy), previous hysterectomy, prior chemotherapy, radiation treatment for cervical neoplasia or another concurrent cancer, and human immunodeficiency virus infection or acquired immune deficiency syndrome
Patient characteristics and setting	**Population**: Women referred for colposcopy following abnormal cytology **Sample size**: 314 **Setting**: Three medical centers. Korea
Index tests	Self-sampled test: HPV DNA (two different assays): Realtime HR-S HPV (Sejong Medical Co., Ltd., Paju, South Korea) Anyplex II HPV (Seegene, Seoul, South Korea)) **Instructions**: Each participant was provided with a self-sampling kit with illustrated instructions. Participants were instructed to collect a vaginal sample by inserting the plastic brush one inch into the vagina, rotating the swab for 15 seconds, and then remove it. **Sample collection**: The women performed the self-collections in the clinician's office or near the clinician's office before the clinical examination

	Sampling device and storage medium: Plastic brush (Flocked Swab Noble Biosciences, Inc., Hwaseong, Korea) and ThinPrep, PreservCyt Solution (Hologic, Marlborough, MA, USA)
Comparator test	Clinician-sampled HPV tests: HPV DNA (two different assays: Realtime HR-S HPV (Sejong Medical Co., Ltd., Paju, South Korea), and Anyplex II HPV (Seegene, Seoul, South Korea)) **Sample collection:** Participants underwent a pelvic exam during which the clinician-collected a cervical sample using a cervical brush **Sampling device and storage medium**: Cervical Brush (Noble Biosciences, Inc.) and ThinPrep, PreservCyt Solution (Hologic, Marlborough, MA)
Flow and timing	Time interval between index and comparator test: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** Realtime HR-S HPV: clinician-collected cervical sample: 247/314 (78.7%) self-collected vaginal sample: 234/314 (74.5%) Anyplex II HPV: clinician-collected cervical sample: 230/314 (70.7%) self-collected vaginal sample: 222/314 (73.2%) **HR-HPV detection agreement: % (95% CI)** Realtime HR-S HPV: clinician-collected cervical sample vs self-collected vaginal sample: 85.03% (80.60– 88.79) Anyplex II HPV: clinician-collected cervical sample vs self-collected vaginal sample: 82.17% (77.47–86.24) **HR-HPV detection agreement: Two-tailed McNemar's test** Realtime HR-S HPV: clinician-collected cervical sample vs self-collected vaginal sample: McNemar p = 0.079 Anyplex II HPV: clinician-collected cervical sample vs self-collected vaginal sample: McNemar p = 0.350

	HR-HPV detection agreement: Kappa (95% CI) Kappa not stated.
Risk of bias	Unclear

Darlin 2012

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: -
Patient characteristics and setting	**Population**: Women, aged 18–65, who had been found to have an abnormal cervical smear in the organized screening program, **Sample size**: 108 **Setting**: The outpatient colposcopy clinic at Lund University Hospital, Sweden.
Index tests	Self-sampled test: Luminex-based HPV genotyping **Instructions**: Oral and written instructions were given to the study persons before taking the self-collected vaginal sample. **Sample collection**: At the clinic **Sampling device and storage medium**: A cotton swab
Comparator test	Clinician-sampled HPV tests: Luminex-based HPV genotyping **Sample collection:** A consultant collected the standard liquid-based cytology (LBC) for HPV detection. **Sampling device and storage medium**: The LBC was collected by a plastic device Rovers® Cervex- Brush® Combi scraping cells from portion and put into a "Thin Prep preservCyt Solution".
Flow and timing	Time interval between index and comparator test: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: 65/108 (60%) self-collected dry swab: 64/108 (59%) **HR-HPV detection agreement: Kappa (95% CI)** clinician-collected sample vs self-collected dry swab: 0.67 (0.53–0.81),
Risk of bias	Unclear

Des Marais 2018

Patient sampling	**Design**: Cross-sectional study

	Inclusion/exclusion: Eligible if they were 30 to 64 years of age; reported no history of Pap testing in the past 4 years (overdue for screening by national guidelines at the start of the study); had a household income below 250% of the poverty level; were not pregnant; had not had a hysterectomy; and were uninsured, underinsured, or had Medicaid insurance. Eligibility measures were assessed by self-report. Income and insurance criteria were defined to ensure eligibility for free cervical cancer screening services through collaborating safety net clinics and programs.
Patient characteristics and setting	**Population**: Women at elevated risk of cervical cancer due to underscreening **Sample size**: 193 **Setting**: Clinic not specified. USA.
Index tests	Self-sampled test: HPV DNA (Aptima HPV assay (Hologic, Inc.) **Instructions**: Participants received self-collection kit by mail and were instructed to introduce the brush into the vagina as far as it could comfortably go and rotate 5 times, remove the brush head and place it into a collection tube. An incentive of $35 USD was given for returning the self-home sample and attending an appointment for self-clinic and clinician collected samples. Instructions were slightly revised during project implementation to emphasize that vials should be closed tightly, which resolved an emergent issue of several samples leaking in transit. At the study clinic appointment, participants self-collected a second vaginal sample using the same brush, preservation solution, and instructions used for at-home self-collection. **Sample collection**: Two self-samples taken: A cervical-vaginal sample self-collected at home and returned by mail A cervical-vaginal sample self-collected in a clinic and handed to a nurse **Sampling device and storage medium**: Viba brush (Rovers Medical Devices B.V., The Netherlands) and Aptima sample transport media (Hologic, Inc., Marlborough, Mass.)
Comparator test	Clinician-sampled HPV tests: HPV DNA (Aptima HPV assay (Hologic, Inc.)) **Sample collection:** The clinician performed a standard pelvic examination during which a cervical sample was collected

	Sampling device and storage medium: Endocervical brush (Cytobrush Plus GT) and spatula (Pap-Perfect), preserved in PreservCyt media (Hologic, Inc.)
Flow and timing	**Time interval between index and comparator test:** Home self-collected samples were returned an average of 15 days before clinic appointment. Time interval between self-clinic sample and comparator test: consecutive.
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: 22/193 (11.4%) self-collected home sample: 24/193 (12.4%) self-collected clinical sample: 30/193 (15.5%) **HR-HPV detection agreement: Kappa (95% CI)** self-home sample vs clinician collected sample: 0.66 (0.46–0.80) self-clinic sample vs clinician collected sample: 0.56 (0.36–0.73) self-home sample vs self-clinic sample: 0.86 (0.71–0.96)
Risk of bias	Low

Dijkstraa 2012

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion:** No further details given
Patient characteristics and setting	**Population**: 105 women referred for colposcopy-directed biopsy because of a cervical smear with moderate dyskaryosis or worse, or repeated equivocal Pap smear results, 30 women were referred for post-coital bleeding and had normal cytology **Sample size**: 135 **Setting**: Outpatient clinic. The Netherlands.
Index tests	Self-sampled test: HPV DNA (GP5+/6+-PCR EIA and subsequent reverse line blot (RLB) assay) **Instructions**: All women were given an illustrated instruction leaflet **Sample collection**: The women were instructed to collect a vaginal self-sample at home one week before the visit to the outpatient clinic **Sampling device and storage medium**: Viba-brush® (Rovers Medical Devices B.V.) and Thinprep® vial PreservCyt®, Hologic Inc.)

Comparator test	Clinician-sampled HPV tests: HPV DNA (GP5+/6+-PCR EIA and subsequent reverse line blot (RLB) assay) **Sample collection:** A gynaecologist first took a vaginal sample whereafter a vaginal speculum was inserted to take a regular cervical scrape **Sampling device and storage medium**: Vaginal sample taken with Viba-brush® (Rovers Medical Devices B.V.), cervical sample taken with Rovers® Cervex-brush, both stored in Thinprep® vial PreservCyt®, Hologic Inc.)
Flow and timing	Time interval between index and comparator tests: one week
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected cervical sample: 84/135 (62.2%) self-collected vaginal sample: 85/135 (63.0%) **HPV detection agreement: Kappa (95% CI)** clinician-collected cervical sample vs self-collected vaginal sample: 0.70 (0.60–0.78)
Risk of bias	Unclear

Du 2021

Patient sampling	**Design**: Multicenter cross-sectional study **Inclusion/exclusion**: Women were eligible if they were 30–59 years of age, sex experienced but not pregnant, no prior hysterectomy, and no prior pelvic radiation.
Patient characteristics and setting	**Population**: Women who had not done cervical cancer screening for at least 3 years. **Sample size**: 10399 **Setting**: Hospital. China
Index tests	Self-sampled test: HPV DNA (Cobas 4800 HPV assay and SeqHPV) **Instructions**: Self-sampling instructions were provided by poster diagrams and personal instruction. **Sample collection**: The women performed the self-collections in a private room at the hospital. **Sampling device and storage medium**: Liquid stored swab –

	"JustForMe" brush, CE-marked, (Preventive Oncology International, Inc, Cleveland Heights, OH), agitated in 6 mL of ThinPrep PreservCyt Solution (TCT, Hologic)
Comparator test	Clinician-sampled HPV tests: HPV DNA (Cobas 4800 HPV assay and SeqHPV) **Sample collection:** The physician placed a vaginal speculum and collected an endocervical sample from each of the participants using a "broom" sampler. **Sampling device and storage medium**: "broom" sampler in liquid - (Rovers Medical Devices, Oss, the Netherlands). Sample was placed in 20 mL of ThinPrep PreservCyt Solution (TCT, Hologic)
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample Cobas 4800: 1 121/10 399, 10.8% self-collected liquid swab Cobas 4800: 1 433/10 399, 13.8% clinician-collected sample SeqHPV: 1 133/10 399, 10.9% self-collected liquid SeqHPV: 1 211/10 399, 11.6% **HPV detection agreement: Kappa (95% CI)** clinician-collected Cobas 4800 vs self-collected Cobas 4800: 0.77 (0.76–0.79) clinician-collected Cobas 4800 vs clinician-collected SeqHPV: 0.83 (0.81–0.85) clinician-collected Cobas 4800 vs self-collected SeqHPV: 0.83 (0.81–0.85) clinician-collected SeqHPV vs self-collected SeqHPV: 0.91 (0.89–0.92)
Risk of bias	Unclear

El-Zein 2018

Patient sampling	**Design**: 3-arm cross-sectional study **Inclusion/exclusion**: Women aged 21–74 were eligible to participate if they had been referred to the participating colposcopy clinic because of an abnormal cervical cancer screening result or for initial treatment of a cervical lesion.
Patient characteristics and setting	**Population:** Women attending the colposcopy clinic. **Sample size**: 1217

	Setting: In colposcopy clinics at three University affiliated hospitals. Canada.
Index tests	Self-sampled test: HPV DNA (cobas®4800 HPV Test) **Instructions**: Each participant was verbally instructed on how to perform the cervicovaginal self-sampling techniques using bilingual, illustrated instructions. These were also posted in designated areas in which the self-sampling was performed. **Sample collection**: The women performed the unsupervised self-collections in the hospital (restroom, changing area or examination room) before the clinical examination and collection. **Sampling device and storage medium**: Liquid stored swab - 1. HerSwab™ (Eve Medical, Toronto, ON) – suspended in 20 ml of PreservCyt solution 2. cobas® PCR Female swab - cobas® PCR media
Comparator test	Clinician-sampled HPV tests: HPV DNA (cobas®4800 HPV Test) **Sample collection:** The clinician collected a cervical sample with the use of a speculum. **Sampling device and storage medium**: Not specified sample device in liquid – suspended in 20 ml of PreservCyt solution
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: 554/1217, 45.5% self-collected HerSwab: 560/1217, 46.0% self-collected Cobas: 593/1217, 48.7% **HPV detection agreement: Kappa (95% CI)** clinician-collected sample vs self-collected HerSwab: 0.87 (0.81–0.87) clinician-collected sample vs self-collected Cobas: 0.81 (0.78–0.85) self-collected HerSwab vs self-collected Cobas: 0.87 (0.84–0.90)
Risk of bias	Unclear

Geraets 2013

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: Women referred to a gynecological outpatient clinic because of an abnormal Pap smear (ASC-US+)

Patient characteristics and setting	**Population**: High risk population. All women had been referred because of an abnormal Pap smear (ASC-US+) detected at local health centers on average 3 months prior to the study visit (range: 1.5–6 months) **Sample size**: 182 **Setting**: the gynecological outpatient clinic of the Hospital Clinic in Barcelona, Spain
Index tests	Self-sampled test: HPV DNA (Rovers Viba-Brush (dry storage) / 2 detection methods: SPF10 PCR hybridization, GP5+/6+-PCR and sequencing) **Instructions:** Women received verbal instructions from the physician **Sample collection**: details not reported **Sampling device and storage medium**: Sampled with Rovers Viba-Brush (Rovers Medical Devices, Oss, The Netherlands), and subsequently applied to an Indicating FTA-elute cartridge (GE Healthcare, Buckinghamshire, United Kingdom) and air-dried.
Comparator test	Physician-sampled HPV tests: HPV DNA (Rovers Cervex-Brush (liquid storage) / 2 detection methods: SPF10 PCR hybridization, GP5+/6+-PCR and sequencing) **Sample collection:** A gynecologist obtained a cervical scrape before colposcopy was performed. **Sampling device and storage medium**: Sampling with the Rovers Cervex-Brush (Rovers Medical Devices). The brush was collected in 20 ml PreservCyt medium (Cytyc Corp., Boxborough, MA, USA)
Flow and timing	**Time interval between index and comparator tests:** Consecutive, self-collected samples were taken prior to colposcopy examination. Self-collected samples were stored for 2–15 months (median: 4 months) and transported at room temperature. Detection assays: All samples were tested with two HPV assays at DDL Diagnostic Laboratory, Rijswijk, The Netherlands: (1) the HPV SPF10 PCR-DEIA-LiPA25 version 1 (Labo Bio-medical Products BV, Rijswijk, The Netherlands); and (2) GP5+/6+-EIA kit (Diassay BV, Rijswijk, The Netherlands). Positive samples were sequenced using digene HPV Genotyping LQ Test (Q Test; Qiagen).
Outcomes	Agreement between self-sampled HPV tests and Physician-sampled HPV tests

	Detection of HR-HPV positives SPF_{10} detection Physician-collected cervical sample (liquid storage): 137/182 (75.3%) Self-collected vaginal samples (dry storage): 123/182 (67.6%) GP5+/6+ detection Physician-collected cervical sample (liquid storage): 117/182 (64.3%) Self-collected vaginal samples (dry storage): 97/182 (53.3%) **HR-HPV detection agreement: Kappa (95% CI)** Self-collected vs. clinician-collected samples: SPF_{10} detection Kappa 0.733 (0.625–0.841) Agreement 89.0% GP5+/6+ detection Kappa 0,642 (0.532–0.751) Agreement 82.4%
Risk of bias	Unclear

Guan 2013

Patient sampling	**Design**: cross-sectional study **Inclusion/exclusion**: Eligible women were not pregnant and have not had a hysterectomy. Between the ages of 30 and 59.
Patient characteristics and setting	**Population**: Women between the ages of 30 and 59 who underwent initial screening in the local clinics, which consisted of gynecologic exam with visual inspection with acetic acid and Lugol's iodine (VIA/VILI). **Sample size**: 174 **Setting**: Maternal and Child Health Hospital. China.
Index tests	Self-sampled test: HPV DNA. Qiagen cervical sampler brush (Qiagen, Gaithersburg, MD, USA) and a Whatman indicating FTA elute cartridge (GE Healthcare, Buckinghamshire, UK) **Instructions**: Participants were given written and verbal instructions for self-collection. The instructions were given in Chinese and each step was also supplemented with descriptive figures. Instructions were also posted in the self-collection room for reference. **Sample collection**: The women performed the self-collections in a private room near the clinician's office before the clinical examination and collection. **Sampling device and storage medium**: Cervical sampler brush and dry stored swab - Qiagen cervical sampler brush (Qiagen, Gaithersburg,

	MD, USA) and a Whatman indicating FTA elute cartridge (GE Healthcare, Buckinghamshire, UK)
Comparator test	Clinician-sampled HPV tests: HPV DNA, Qiagen cervical sampler brush (Qiagen, Gaithersburg, MD, USA) and a Whatman indicating FTA elute cartridge (GE Healthcare, Buckinghamshire, UK) **Sample collection:** The clinician performed a sample collection using a speculum and cervical sampler brush. **Sampling device and storage medium**: Cervical sampler brush and dry stored swab - Qiagen cervical sampler brush (Qiagen, Gaithersburg, MD, USA) and a Whatman indicating FTA elute cartridge (GE Healthcare, Buckinghamshire, UK)
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives (13 carcinogenic HPV-variants)** clinician-collected sample: 44/174 (25.3%) self-collected dry swab: 42/174 (24.1%) **HPV detection agreement: Kappa (95% CI)** clinician-collected sample vs self-collected dry swab: 0.75 (0.64–0.87)
Risk of bias	Unclear

Haguenoer 2014

Patient sampling	**Design**: Multicentre cross-sectional study **Inclusion/exclusion**: Eligible if they were 20 to 65 years old, self-reported not a virgin, not pregnant, not vaccinated against HPV, not menstruating, had had no Pap smear for at least 2 years and had no prior hysterectomy
Patient characteristics and setting	**Population**: Women who were due for a routine screening Pap smear. **Sample size**: 722 **Setting**: A family-planning clinic and a gynaecology consultation centre in the University Hospital, France.
Index tests	Self-sampled test: HPV DNA **Instructions**: Women were given a self-collection kit that included 1) a leaflet designed in collaboration with a medical illustrator with written

	and cartoon instructions detailing how to perform the 2 vaginal self-collections **Sample collection**: The women performed the self-collections in the clinician's office or near the clinician's office before the clinical examination and collection. **Sampling device and storage medium**: for DRY samples, an envelope containing a nylon flocked swab in a non-breakable sterile tube (53080C, Copan, Brescia, Italy); and for Liqiud samples, an envelope containing a nylon flocked swab with a molded breakpoint on the swab shaft that was enclosed in a sterile peel pouch (509CS01, Copan, Brescia, Italy) and a 12 × 80-mmscrew cap tube containing 2 mL transport and preservation liquid medium (610C, CyMol, Copan, Brescia, Italy).
Comparator test	Clinician-sampled HPV tests: HPV DNA **Sample collection:** The clinician performed a pelvic and speculum examination during which a cervical specimen was collected **Sampling device and storage medium**: Ectocervical and endocervical cells were collected with use of a Cervexbrush (Rovers Medical Devices B.V., Oss, The Netherlands) and were resuspended in a specimen transport liquid medium (Thinprep Paptest, Presercyt solution, Hologic, Bedford, MA, USA).
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives n/N (%)** clinician-collected sample: 177/722 (24.5%) self-collected dry swab: 151/722 (20.9%) self-collected swab in a transport liquid medium: 184/722 (25.5%) **HPV detection agreement: Kappa (95% CI)** clinician-collected sample vs self-collected dry swab: 0.76 (0.71–0.82) clinician-collected sample vs self-collected swab in a transport liquid medium: 0.72 (0.66–0.78)
Risk of bias	Low

Jentschke 2016

Patient sampling	**Design:** Pilot cross-sectional **Inclusion/exclusion**: Not pregnant and no history of hysterectomy. Women aged 17 to 78 years.
Patient characteristics and setting	**Population**: Study participants were recruited among the patients referred for abnormal cervical screening results or general gynecological diseases.

	Sample size: 146 **Setting**: At a colposcopy clinic and the gynecological outpatient clinic of a medical school. Germany.
Index tests	Self-sampled test: HPV DNA, Abbott RealTime High Risk HPV test **Instructions**: At first, all participants were given the two sampling devices (alternating order in every patient), written and illustrated instructions as provided by the manufacturers (translated to German). **Sample collection**: The women performed the self-collections in a separate room at the clinic, without assistance by hospital staff, before the clinical examination and collection. **Sampling device and storage medium**: Dry stored swab – 1. Evalyn Brush (Rovers Medical Devices) 2. Qvintip (Aprovix)
Comparator test	Clinician-sampled HPV tests: HPV DNA, Abbott RealTime High Risk HPV test **Sample collection:** The clinician performed a pelvic and speculum examination during which a liquid-based cervical cytology smear was taken with a broom-like device. **Sampling device and storage medium**: Broom-like device in liquid – (Hologic, Marlborough, MA)
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: 75/136 self-collected dry swab, Evalyn: 73/136 self-collected dry swab, Qvintip: 68/136 **HPV detection agreement: Kappa (95% CI)** clinician-collected sample vs self-collected dry swab Evalyn: 0.822 (0.726–0.918) clinician-collected sample vs self-collected dry swab Qvintip: 0.779 (0.674–0.885)
Risk of bias	Unclear

Ketelaars 2017

Patient sampling	**Design**: Cross-sectional study

	Inclusion/exclusion: Women aged 30-60 years
Patient characteristics and setting	**Population**: Women invited at 5-year intervals for a cervical smear, generally taken by their physician. **Sample size**: 2049 **Setting**: A family-planning clinic and a gynecology consultation center in the University Hospital, France.
Index tests	Self-sampled test: Cobas 4800 HPV test **Instructions**: The participants received a self-sampling kit including a self-sampling device, an explanatory letter, an informed consent form, user instructions (written and drawn), and a return envelope with the address of the laboratory. **Sample collection**: Women self-collected a cervicovaginal sample at home or in the physician's practice, in either case after the physician collected sample was taken **Sampling device and storage medium**: A dry brush: the Evalyn Brush, Rovers Medical Devices B.V., Oss, Netherlands
Comparator test	Clinician-sampled HPV tests: Cobas 4800 HPV test **Sample collection:** A regular cervical smear taken by their physician as part of the nationwide program. **Sampling device and storage medium**: liquid-based cytology sample using a Rovers Cervex-Brush (Rovers Medical Devices B.V., Oss, Netherlands). The Cervex-Brush was rinsed in ThinPrep medium (Hologic, Marlborough, MA) in the Nijmegen region and in SurePath medium (Klinipath BV, Duiven, Netherlands)
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives n/N (%)** clinician-collected sample: 163/2046 (8.0%) self-collected: 204/2046 (10.0%) **HPV detection agreement: %** clinician-collected vs self-collected sample: 96.8%
Risk of bias	Unclear

Leeman 2017

Patient sampling	**Design**: Cross-sectional single-center study. **Inclusion/exclusion**: Women included were aged 18 years or older and had been referred for colposcopy to the Hospital Clinic because of abnormal cervical cytology.
Patient characteristics and setting	**Population**: A cohort of 113 women referred for colposcopy after an abnormal Pap smear. **Sample size**: 113 **Setting**: A colposcopy outpatient clinic in Spain.
Index tests	Self-sampled test: HPV DNA (SPF10-DEIA-LiPA25 assay and GP5+/6+-EIA-LMNX.) **Instructions**: Not described **Sample collection**: At the outpatient clinic, women were asked to perform a brush-based self-sample of cervicovaginal cells **Sampling device and storage medium**: Dry stored swab Evalyn brush™ (Rovers Medical Devices B.V., Oss, the Netherlands).
Comparator test	Clinician-sampled HPV tests: HPV DNA (SPF10-DEIA-LiPA25 assay and GP5+/6+-EIA-LMNX.) **Sample collection:** The clinician performed a pelvic and speculum examination during which a cervical specimen was collected. **Sampling device and storage medium**: Cervex-brush in liquid - Cervex-Brush (Rovers Medical Devices B.V., Oss, the Netherlands) in PreservCyt solution (Hologic Corp, Marlborough, MA, USA).
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** SPF10 clinician-collected sample: 68/91 self-collected dry swab: 66/91 GP5+/6+ clinician-collected sample: 62/91 self-collected dry swab: 59/91 **HPV detection agreement: Kappa (95% CI)** SPF10

	clinician-collected sample vs self-collected dry swab: 0.92 (0.822–1.01) GP5+/6+ clinician-collected sample vs self-collected dry swab: 0.80 (0.68–0.93)
Risk of bias	Unclear

Leinonen 2018

Patient sampling	**Design**: Multicenter cross-sectional study **Inclusion/exclusion**: They contacted patients referred for treatment for premalignant lesions to Østfold Hospital Trust (ØHT) or Oslo University Hospital (OUH), Ullevål, and patients with confirmed cervical carcinoma or carcinoma suspicion starting treatment at the Norwegian Radium Hospital. They assessed samples that were returned with informed consent.
Patient characteristics and setting	**Population**: High risk population. The recruited study population consisted of 249 patients with cervical premalignant lesions and 61 women with carcinoma diagnosis or carcinoma suspicion. Patients referred for treatment of premalignant lesions were recruited from the Østfold Hospital Trust (ØHT) and Oslo University Hospital (OUH), Ullevål. Patients with confirmed cervical carcinoma or carcinoma suspicion were recruited at the Norwegian Radium Hospital. **Sample size**: 310 (232 had complete data for all detection tests) **Setting**: Self-collection was done at home, and physician-collection was done in conjunction with normally scheduled consultations, presumably at the clinics where the women were recruited
Index tests	Self-sampled test: HPV DNA (Evalyn dry brush and FLOQSwabs dry swabs /3 real-time PCR assays: Anyplex™ II HPV28, Cobas® 4800 HP, and Xpert HPV) **Instructions:** The women received self-collection devices with written instructions by mail. **Sample collection**: Participants performed self-collection at home using two sampling devices the day before their appointment. **Sampling device and storage medium**: Sampling done with (1) dry brush (Evalyn®Brush, Rovers Medical Devices, Lekstraat, The Netherlands) and (2) a dry swab (FLOQSwabs™, COPAN, Brescia, Italy). The brushes were stored dry until they were processed.
Comparator test	Physician-sampled HPV tests: HPV DNA (a brush / 3 real-time PCR assay: Anyplex™ II HPV28, Cobas® 4800 HP, and Xpert HPV)

	Sample collection: Before the gynecologic procedure, a physician took a cervical specimen using a brush. **Sampling device and storage medium**: Sampling with a brush. The specimen was rinsed directly into PreservCyt® buffer (Hologic, Inc., Marlborough, MA)
Flow and timing	**Time interval between index and comparator tests:** Self-collected samples were taken first at home the day before their scheduled appointment. The order of the device use was randomized, and clearly indicated on the study instructions. Women brought self-collected specimens to their appointment from where they were transported to the CRN. The devices were then re-labelled and sent dry to the laboratory of ØHT at room temperature. The time interval between specimen-collection and shipment to the laboratory ranged from four to 194 days, median time being 23 days. At the laboratory, Evalyn®Brush and FLOQSwabs™ heads were suspended with 4.6 ml ThinPrep medium. Aliquots of 1 ml were refrigerated or stored at -20 °C until analysis. No details provided on how the physician-collected samples were handled after the specimens were rinsed into the buffer. 3 real-time PCR tests used for detection: Anyplex™ II HPV28 Detection (Seegene Inc., Seoul, Korea) simultaneously detects and sequences 28 HPV types. The 14 hrHPV types plus 14 possibly carcinogenic or non-cancer-causing types. Cobas® 4800 HPV Test simultaneously detects and sequences the 14 hrHPV types. Xpert®HPV simultaneously detects and sequences the 14 hrHPV types,
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** <u>Anyplex II HPV28</u> Clinician-collected cervical specimen: 207/232 (89%) Self-collected with **Evalyn Brush**: 209/232 (90%) Self-collected with **FLOQSwabs**: 193/232 (83%) <u>Cobas 4800</u> Clinician-collected cervical specimen: 200/232 (86%) Self-collected with **Evalyn Brush**: 196/232 (84%) Self-collected with **FLOQSwabs**: 185/232 (80%) <u>Xpert HPV</u> Clinician-collected cervical specimen: 199/232 (86%) Self-collected with **Evalyn Brush**: 197/232 (85%) Self-collected with **FLOQSwabs**: 188/232 (81%)

	HR-HPV detection agreement: Kappa (95% CI) Self-collected vs. clinician-collected samples: Anyplex™ II HPV28 Self-collected with **Evalyn Brush** vs. Clinician-collected sample Kappa 0.68 (0.52–0.83) Agreement 94.0% Self-collected with **FLOQSwabs** vs. Clinician-collected sample Kappa 0.50 (0.33–0.64) Agreement 87.9% Cobas 4800 Self-collected with **Evalyn Brush** vs. Clinician-collected sample Kappa 0.64 (0.49–0.77) Agreement 91.0% Self-collected with **FLOQSwabs** vs. Clinician-collected sample Kappa 0.60 (0.44–0.73) 0.60 Agreement 88.4% Xpert HPV Self-collected with **Evalyn Brush** vs. Clinician-collected sample Kappa 0.66 (0.52–0.80) 0.66 Agreement 91.4% Self-collected with **FLOQSwabs** vs. Clinician-collected sample Kappa 0.60 (0.45–0.73) 0.60 Agreement 88.8%
Risk of bias	Unclear

Onuma 2020

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: Patients who had previously tested negative for intraepithelial lesions or malignancy/HPV-positive, and patients with atypical squamous cells of undetermined significance or worse (ASCUS+) cytology were eligible. Exclusion criteria included patients who had undergone hysterectomy, were pregnant, or who had received chemotherapy.
Patient characteristics and setting	**Population**: Selected population (1) outpatients with abnormal cytology and requiring colposcopy and biopsy and (2) NILM/HPV-positive patients in the Fukui Cervical Cancer Study (FCCS – investigated combined screening with liquid-based cytology; women who had tested NILM/HPV-positive in the baseline phase were followed up for 3 years; yearly physician-collected HPV testing, cytology, and colposcopy) **Sample size**: 100 (number with both tests) **Setting**: University of Fukui Hospital from January 2019 to July 2019

Index tests	Self-sampled test: HPV DNA (Evalyn brush /Cobas 4800 PCR-based HPV testing) **Instructions**: Participants received instruction on how to submit samples after HPV self-sampling but not details concerning use of the Evalyn brush for sample collection. Participants were instructed to read the instructions describing use of the Evalyn brush before self-sampling, with these instructions created under supervision of the Japan Cancer Society. These instructions were verified that Japanese people could read and understand before this study. **Sample collection**: Participants performed HPV self-sampling in the bathroom at the hospital, immediately placing the brushes in provided ThinPrep vials. HPV infection was confirmed using a PCR-based Cobas 4800 HPV DNA test. **Sampling device and storage medium**: The Evalyn brush heads were stored at room temperature in ThinPrep vials (Hologic, Marlborough, MA, USA). The samples were stored at room temperature and transferred to the Fukui Health Care Association on a fixed day of the week.
Comparator test	Clinician-sampled HPV tests: HPV DNA (Rovers Cervex brush, Rovers Medical Devices, Oss, The Netherlands / Cobas 4800 PCR-based HPV testing) **Sample collection:** The physician performed HPV and cell sampling using an endocervical brush and immediately stored the brush heads in ThinPrep vials. HPV infection was confirmed using a PCR-based Cobas 4800 HPV DNA test. **Sampling device and storage medium**: The Cervex brush was immediately placed in ThinPrep vials. The samples were stored at room temperature and transferred to the Fukui Health Care Association on a fixed day of the week.
Flow and timing	Time interval between index and comparator tests: consecutive, self-sampling first, physician sampling immediately after
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** Physician-collected sample: HPV all types: 51/100 (51%) Self-collected sample:

	HPV all types: 50/100 (50%) **HR-HPV detection agreement: Kappa (95% CI)** Self-collected compared to clinician-collected samples HPV perfect match[2] all types concordance: kappa 0.76 [0.63–0.89) Agreement: 88%
Risk of bias	Unclear

Phoolcharoen 2018

Patient sampling	**Design**: Cross-sectional study **Inclusion/exclusion**: Eligible women were aged 30–70 years, had no history of cervical cancer, had not undergone a hysterectomy, and were currently not pregnant.
Patient characteristics and setting	**Population**: Selected population. Women who visited a colposcopy Clinic for any indication (e.g. abnormal cytology, screened positive for HPV). **Sample size**: 247 **Setting**: colposcopy clinic at Chulabhorn Hospital, Bangkok, Thailand
Index tests	Self-sampled test: HPV DNA (Evalyn Brush dry vaginal brush from Rovers Medical Devices B.V., Oss, The Netherlands / Cobas4800 HPV PCR test) **Instructions**: The women received instructions by video made by research project's staffs to explain how to use the vaginal self-sampling brush, verbal and illustrations for vaginal self-sampling. **Sample collection**: presumably at the clinic, samples were analysed with Cobas4800 HPV test (Roche Molecular Diagnostics, Pleasanton, CA, USA) within 1 week after collection. **Sampling device and storage medium**: Evalyn Brush (dry vaginal brush, Rovers Medical Devices B.V., Oss, The Netherlands), stored in 10 ml transport medium, SurePath Preservative Fluid (Becton, Dickinson and Company, USA).
Comparator test	Clinician-sampled HPV tests: HPV DNA (Cervex-Brush from Rovers Medical Devices / Cobas4800 HPV PCR test) **Sample collection:** endocervical sample collected by a gynecological oncologist, Samples were analyzed with Cobas4800 HPV test (Roche Molecular Diagnostics, Pleasanton, CA, USA) within 1 week after collection.

	Sampling device and storage medium: Cervex-Brush (Rovers Medical Devices) 10 ml transport medium, SurePath Preservative Fluid (Becton, Dickinson and Company, USA)
Flow and timing	Time interval between index and comparator tests: consecutive, self-sampling first
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests (in a transport liquid medium) **Detection of HR-HPV positives** Physician-collected sample: 89/247 (36%) Self-collected sample: 102/247 (41.3%) **HR-HPV detection agreement: Kappa (95% CI)** Self-collected vs. physician-collected samples: Kappa[1] 0.46 (hrHPV) Agreement 74.5%
Risk of bias	Unclear

Reisner 2018

Patient sampling	**Design**: cross-sectional study **Inclusion/exclusion**: Trans masculine people (i.e. people were assigned female sex at birth and now have a masculine spectrum gender identity) between 21 and 64 years old, have a cervix, have been sexually active within the past 3 years (sexual partner(s) of any gender); (5) able to speak and understand English; (6) willing and able to provide informed consent. Prior HPV vaccination was not grounds for exclusion from the study.
Patient characteristics and setting	**Population**: Screening of a sub-population: trans masculine volunteers recruited broadly from the community. **Sample size**: 131 **Setting**: a federally qualified community health center that serves the LGBT community in Boston, Massachusetts (Fenway Health)
Index tests	Self-sampled test: HPV DNA (Polyester-tipped swab from Puritan Medical Products Company / DNA Hybridization Assay) **Instructions**: Trained study staff provided all participants with a written instruction sheet and detailed verbal instructions on self-collection and packaging of specimens. **Sample collection**: Participants were provided with a hand mirror and latex gloves. Self-collection of vaginal specimens occurred alone in a private exam room or single-stall bathroom, based on participant preference. Sterile polyester-tipped swabs were inserted approximately two inches into the vaginal canal and rotated in a circular motion for 10±30 seconds.

	Samples were tested for hrHPV by Quest Diagnostics, Marlborough, MA, USA using DNA Hybridization Assay via digene Hybrid Capture II technology (Qiagen, Gaithersburg, Inc., Gaithersburg, MD, USA). **Sampling device and storage medium**: Polyester-tipped swab from Puritan Medical Products Company LLC, Guilford, ME, USA, stored in a Cytyc ThinPrep solution canister directly after sampling.
Comparator test	Clinician-sampled HPV tests: HPV DNA (Cytobrush Plus from Cooper Surgical, Trumbull, CT, USA / DNA Hybridization Assay) **Sample collection:** Cervical samples were collected from all participants. A physician or nurse practitioner collected cervical specimens using a Medscand Pap-Perfect Spatula and Cytobrush Plus A vaginal sample was also collected from the last 53 participants. A clinician collected vaginal specimens using a fresh sterile polyester-tipped swab from inserted approximately two inches into the vaginal canal and rotated in a circular motion for 10±30 seconds (the same equipment and instructions as used in self-testing); this specimen was collected with the speculum in place. Samples were tested for hrHPV by Quest Diagnostics, Marlborough, MA, USA using DNA Hybridization Assay via digene Hybrid Capture II technology (Qiagen, Gaithersburg, Inc., Gaithersburg, MD, USA). **Sampling device and storage medium**: All participants: Cytobrush Plus (Cooper Surgical, Trumbull, CT, USA) that were deposited into a Cytyc ThinPrep solution. Last 53 participants: Cytobrush Plus as above plus polyester-tipped swab from Puritan Medical Products Company LLC, Guilford, ME, USA). Both samples were stored in a Cytyc ThinPrep solution canister.
Flow and timing	Time interval between index and comparator tests: All specimens were collected at the single study visit. The order of specimen collection (self- or provider-collected first) was randomized. For participants self-collecting after provider collection, providers removed excess lubricant using an additional cotton swab with ring forceps while withdrawing the speculum.
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** Clinician-collected sample (cervical sample with Cytobrush): 21/131 (16.0%) Self-collected sample (vaginal sample with Puritan swab): 17/131 (13.0%)

	HR-HPV detection agreement: Kappa (95% CI) Self-collected vs clinician collected sample (cervical sample with Cytobrush): 0.75 (0.59 to 0.92)
Risk of bias	Unclear

Rohner 2020

Patient sampling	**Design**: Multicenter cross-sectional study **Inclusion/exclusion**: Recruited women ages 25–65 years attending colposcopy clinics at either the University of North Carolina (UNC) Women's Hospital (Chapel Hill, NC) or Duke University Hospital (Durham, NC) for one of the following reasons: (i) abnormal cytology results, (ii) infection with HPV-16 or 18, (iii) persistent infection with other hr-HPV genotypes, or (iv) treatment for CIN2þ. In addition, we invited women to participate in the study if they were NILM on cytology, but positive for hr-HPV genotypes other than 16 or 18 at their routine screening ("research only" group). Women were excluded from participation if they were pregnant or had their cervix removed; additionally, women in the "research only" group were excluded if they were taking blood thinners or if the enrollment date was not within 3 months of their original hr-HPV diagnosis. Women were not asked to abstain from sexual intercourse before the study visit.
Patient characteristics and setting	**Population**: Selected[1]. Women attending colposcopy clinics to follow-up test results indicating an increased risk for HPV infections (see inclusion criteria). **Sample size**: 314 **Setting**: Colposcopy clinics at either the University of North Carolina (UNC) Women's Hospital (Chapel Hill, NC) or Duke University Hospital (Durham, NC)
Index tests	Self-sampled test: HPV DNA (Viba-Brush / PCR and nucleic acid hybridization testing, Onclarity Assay) Instructions: participating women received detailed verbal and written instructions concerning the study procedures in either English or Spanish. **Sample collection**: Women self-collected a cervico-vaginal sample at the clinic by inserting a Viba-Brush to the top of the vaginal canal, rotating five times, removing it, and releasing the brush head into a vial prefilled with 6 mL of preservative liquid–based Cytology Media.

	Sampling device and storage medium: Sampling with Viba-Brush (Rovers Medical Devices BV); stored in vial prefilled with 6 mL of preservative liquid–based Cytology Media (ThinPrep, Hologic Inc.). Samples were stored in a cooler within 10 minutes of collection, processed same day, and then stored at -20° in HPV diluent buffer until it was shipped to BD (Becton Dickinson) for hr-HPV[1] testing with the Onclarity Assay (BD).
Comparator test	Clinician-sampled HPV tests: HPV DNA (Wallach Papette / PCR and nucleic acid hybridization testing, Onclarity Assay) **Sample collection:** During a pelvic examination, the clinician collected a cervical scraping with two 360° turns in a clockwise fashion of a brush-like cervical cell collector. The clinician-collected cervical sample was preserved in a standard 20 mL vial of ThinPrep media for subsequent hr-HPV testing. Immediately stored in a cooler, processed same day then stored at -20° until it was shipped to BD (Becton Dickinson) for hr-HPV testing. **Sampling device and storage medium**: Sampling with a brush-like cervical cell collector (Wallach Papette, Wallach Surgical Devices); stored in a standard 20 mL vial of ThinPrep media (ThinPrep, Hologic Inc.). Samples were stored in a cooler within 10 minutes of collection, processed same day, and then stored at -20° in HPV diluent buffer until it was shipped to BD (Becton Dickinson) for hr-HPV[2] testing with the Onclarity Assay (BD).
Flow and timing	Time interval between index and comparator tests: consecutive during a visit to the clinic, self-collection first
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of any HR-HPV positives** Clinician-collected cervical sample: 220/314 (70%) Self-collected cervical-vaginal brush: 239/314 (76%) **HR-HPV detection agreement: Kappa (95% CI)** self-collected vs. clinician-collected samples: Kappa = 0.57 (0.47 to 0.67) 83% agreement
Risk of bias	Unclear

Saidu 2021

Patient sampling	**Design**: Cross-sectional study (prospective observational study) **Inclusion/exclusion**: not reported Half of each group was HIV-positive by design, no details on selection provided.

	Screening: Any woman who wanted to be tested for HRP and had proof of HIV status (HIV testing was available at the clinic for those who did not have it) was eligible. Referral: Presumably any woman who had been referred for abnormal HPV results
Patient characteristics and setting	**Population**: Both screening and selected populations included. Half of the study population was HIV-positive (n=535). Most (80%) of the HIV-positive women were on antiretroviral therapy. Screening: Women from the general population seeking primary screening. Recruited through a large public clinic that serves a disadvantaged population. Referral: Women referred to the clinic because of abnormal screening results. Recruited through the routine colposcopy services at a university hospital. **Sample size**: 1121 Screening: 715 (HIV-positive: N=330; HIV-negative: N=375) Referral: 406 (HIV-positive: N=200; HIV-negative: N=202) **Setting**: Screening: Samples were collected at Khayelitsha Site B Primary Health Care Clinic, a large public clinic serving a disadvantaged population resident in this community on the outskirts of Cape Town, South Africa. Referral: No information provided
Index tests	Self-sampled test: HPV DNA (Puritan swab / PCR-based Xpert HPV (CE-IVD) test) **Instructions:** "Instructions were given to them by a community health worker." **Sample collection**: Women performed the self-collection in a private clinical examination room (vaginal sample) **Sampling device and storage medium**: Sampled with a standard flock tip swab (Puritan, Guilford, ME) Stored in 5-mL vial (Globe Scientific, Paramus, NJ) containing 4 mL of PreservCyt solution (Hologic, Bedford, MA)
Comparator test	Physician-sampled HPV tests: HPV DNA (2 cervical samples taken with plastic spatula and endocervical cytobrush / PCR-based Xpert HPV (CE-IVD) test) **Sample collection:** Two cervical samples were collected during a pelvic exam, after visualization of the cervix with a speculum. **Sampling device and storage medium**: 2 samples were taken from each woman 1- Extended tip plastic spatula (Medscand, Berlin, Germany)

	2- Endocervical cytobrush (Medscand, Berlin, Germany) The cervical samples were placed in 2 separate ThinPrep vials (Hologic) each filled with 20 mL of PreservCyt solution. Both clinician-collected samples and self-collected samples were tested with the PCR-based Xpert HPV (CE-IVD) test using the GeneXpert instrument system (Cepheid, Sunnyvale, CA) at the Khayelitsha site. The test detects the presence of HR-HPV variants in 5 subgroups: HPV 16; HPV 18 and/or 45; HPV 31, 33, 35, 52, and/or 58; HPV 51 and/or 59; and HPV 39, 56, 66, and/or 68.
Flow and timing	**Time interval between index and comparator tests:** Consecutive, self-collected samples were taken first
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** Screening: Clinician-collected cervical sample: 220/705 (31%) Self-collected vaginal samples: 297/705 (42%) Referral: Clinician-collected cervical sample: data not provided Self-collected vaginal samples: data not provided **HR-HPV detection agreement: Kappa (95% CI)** Screening: Self-collected vs. clinician-collected samples: Kappa 0.72 (0.669 to 0.771) Agreement 86.8% Referral: Self-collected vs. clinician-collected samples: Kappa 0.62 (0.476 to 0.726) Agreement 89.3%
Risk of bias	Unclear

Satake 2020

Patient sampling	**Design**: Single center cross-sectional study **Inclusion/exclusion**: Women signing an informed consent at the study clinics.
Patient characteristics and setting	**Population**: Women visiting the study clinics. **Sample size**: 300 **Setting**: Three private obstetrics/gynecology clinics and hospitals in Sapporo city, Japan.

Index tests	Self-sampled test: HPV DNA Cobas® 4800 HPV system (Roche Diagnostics GmbH, Mannheim, Germany) **Instructions**: Women received complete instructions on how to use the self-sampling tool from a gynecologist/ obstetrician or a nurse, and then a self-sampling kit was handed over to them. (A cell sampling tool, Home Smear Set®, is a cylindrical and partially conical stick of approximately 20 cm in length, with a 7-cm-long tip portion that is purple in color to mark the insertion depth into the vagina. After the tip of the Home Smear Set® is inserted into the vagina, its white handle at the other end of the stick is inserted into the stick. Then, the spongy part is pushed out from the tip of the stick inserted into the vagina. Cervicovaginal cells are collected by rotating the spongy part. After collection of the cells, the white handle is pulled back so that the spongy part is put back into the stick, and the stick is drawn out of the vagina. Then, the spongy part is rinsed well in a tube (cell fixation container) containing the fixation fluid so that the cells are washed off into the fixation fluid in the tube.) **Sample collection**: Women collected cervicovaginal cells by themselves in a treatment room or a restroom prior to physician sampling. Specimens collected were temporally stored at ambient temperature together with a request form according to their routine procedures, and then specimens were retrieved on-site. **Sampling device and storage medium**: Home Smear Set® (ISK Co., Ltd., Tokyo, Japan). In this kit, both the self-sampling tool and the cell fixation container were enclosed, and cells collected by the self-sampling procedure were transferred into a cell fixation container (principal component is ethanol).
Comparator test	Clinician-sampled HPV tests: HPV DNA Cobas® 4800 HPV system (Roche Diagnostics GmbH, Mannheim, Germany) **Sample collection:** A vaginal speculum was inserted to visualize the cervix uteri and the sample was collected. Specimens collected were temporally stored at ambient temperature together with a request form according to their routine procedures, and then specimens were retrieved on-site. **Sampling device and storage medium**: Cervex-Brush® (Rovers Medical Devices B.V., The Netherlands) was used as the sampling tool, and a SurePathTM vial (principal component is ethanol; Becton, Dickinson and Company, Franklin Lakes, NJ, USA) was used as the cell fixation container.
Flow and timing	Time interval between index and comparator tests: consecutive

Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: 41/300 13.7% self-collected sample: 44/300 14.7% **HR-HPV detection agreement: % (95% CI)** 96.3% (94–98%) **HPV detection agreement: Kappa (95% CI)** Not stated
Risk of bias	Unclear

Saville 2020

Patient sampling	**Design**: Single center cross-sectional study **Inclusion/exclusion**: Not stated
Patient characteristics and setting	**Population**: Women 18 years of age or older scheduled to undergo a colposcopy examination. **Sample size**: 303 (ranging from 291-302 depending on HPV assay) **Setting**: A tertiary referral centre – a Dysplasia Clinic at the Royal Women's Hospital in Melbourne, Australia.
Index tests	Self-sampled test: HPV DNA, 6 assays used: cobas 4800 and cobas (Roche Diagnostics, Basel, Switzerland), BD Onclarity HPV assay (BD Diagnostics, Sparks, MD, USA), Xpert HPV test (Cepheid, Inc., Sunnyvale, CA, USA), Anyplex II HPV HR Detection test (Seegene, Seoul, Korea) and Abbott Realtime HPV (Abbott Laboratories, Abbott Park, IL, USA). This study was conducted by VCS Pathology (VCS) **Instructions**: Participants were given written instructions on how to obtain a self-collected vaginal specimen using a flocked swab. **Sample collection**: In the clinic. After self-collection, participants returned the swab to the health practitioner. Self-collected flocked swabs were stored at ambient room temperature for a week before placing into 5 ml of PreservCyt solution (Hologic Marlborough, MA, USA), swirling for 20 seconds, before removing the swab. **Sampling device and storage medium**: Flocked swab (FLOQSwab 552C, Copan, Brescia, Italy). PreservCyt solution (Hologic Marlborough, MA, USA)

Comparator test	Clinician-sampled HPV tests: HPV DNA, 6 assays used: cobas 4800 and cobas (Roche Diagnostics, Basel, Switzerland), BD Onclarity HPV assay (BD Diagnostics, Sparks, MD, USA), Xpert HPV test (Cepheid, Inc., Sunnyvale, CA, USA), Anyplex II HPV HR Detection test (Seegene, Seoul, Korea) and Abbott Realtime HPV (Abbott Laboratories, Abbott Park, IL, USA). This study was conducted by VCS Pathology (VCS) **Sample collection:** A cervical specimen was collected by a practitioner as per usual practice, as part of a scheduled, colposcopic examination. Practitioner-collected samples were also stored at ambient temperature for one week before testing. **Sampling device and storage medium**: (Cervex-Brush, Rovers Medical Devices, Lekstraat, The Netherlands). Rinsed in 20 ml of PreservCyt solution (Hologic, Marlborough, MA, USA).
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: cobas 4800: 162/299 54.2% (48.3-59.9) cobas: 170/302 56.3% (50.5-62.0) Onclarity: 141/299 47.2% (41.4-53.0) Xpert: 149/302 49.3% (43.6-55.1) Anyplex II: 177/302 58.6% (52.8-64.2) Abbott: 151/299 50.5% (44.7-56.3) self-collected sample: cobas 4800: 195/295 66.1% (60.4-71.5) cobas: 194/293 66.2% (60.5-71.6) Onclarity: 162/300 54.0% (48.2-59.7) Xpert: 172/291 59.1% (53.2-64.8) Anyplex II: 186/296 62.8% (57.1-68.4) Abbott: 162/296 54.7% (48.9-60.5) **HR-HPV detection agreement: % (95% CI)** Cobas 4800: 242/292 82.9% (78.1-87.0) cobas: 248/292 84.9% (80.3-88.8) Onclarity: 240/296 81.1% (76.1-85.4) Xpert: 242/291 83.2% (78.4-87.3) Anyplex II: 257/296 86.8% (82.4-90.5) Abbott: 250/296 84.5% (79.8-88.4) **HPV detection agreement: Kappa (95% CI)** Not stated – calculated Gwet's AC1 coefficient instead

Risk of bias	Unclear

Senkomago 2018

Patient sampling	**Design**: Prospective longitudinal study **Inclusion/exclusion**: 18–50 years. Women were at least 18 years, were not in the second or third trimester of pregnancy and had an intact cervix.
Patient characteristics and setting	**Population**: Female sex workers **Sample size**: 350 (344 complete samples at baseline) **Setting**: Study-associated clinic in Korogocho, Nairobi, Kenya.
Index tests	Self-sampled test: Aptima HPV assay (Hologic, USA) **Instructions**: Participating women self-collected a cervico-vaginal specimen for hrHPV-RNA testing in accordance with simple pictorial instructions. **Sample collection**: In the clinic. **Sampling device and storage medium**: Aptima Cervical Specimen Collection and Transport cytobrush (Hologic, Marlborough, MA, USA).
Comparator test	Clinician-sampled HPV tests: Aptima HPV assay (Hologic, USA) **Sample collection:** The physician collected one cervical specimen for a conventional cervical smear test and a second cervical specimen for hrHPV-RNA testing. **Sampling device and storage medium**: Cervex-Brush (Rovers Medical Devices, Oss, The Netherlands) in PreservCyt medium (Hologic).
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: Baseline: 103/344 3 months: 84/300 6 months: 74/269 9 months: 58/258 12 months: 70/273

	15 months: 68/267 18 months: 56/254 21 months: 56/257 24 months: 53/218 self-collected sample: Baseline: 98/344 3 months: 94/300 6 months: 92/269 9 months: 76/258 12 months: 91/273 15 months: 78/267 18 months: 62/254 21 months: 57/257 24 months: 53/218 **HR-HPV detection agreement: % (95% CI)** Baseline: 82.8 (78.9–86.8) 3 months: 81.3 (76.9–85.7) 6 months: 82.2 (77.6–86.7) 9 months: 82.9 (78.4–87.5) 12 months: 86.4 (82.4–90.5) 15 months: 85.0 (80.7–89.3) 18 months: 85.0 (80.7–89.4) 21 months: 92.6 (89.4–95.) 24 months: 93.6 (90.3–96.8) **HPV detection agreement: Kappa (95% CI)** Baseline: 0.55 (0.45–0.65) 3 months: 0.55 (0.45–0.66) 6 months: 0.57 (0.47–0.68) 9 months: 0.56 (0.45–0.67) 12 months: 0.68 (0.59–0.77) 15 months: 0.62 (0.53–0.73) 18 months: 0.60 (0.48–0.69) 21 months: 0.78 (0.69–0.88) 24 months: 0.83 (0.74–0.91)
Risk of bias	Unclear

Stanczuk 2015

Patient sampling	**Design**: Single centre cross-sectional study **Inclusion/exclusion**: Not stated
Patient characteristics and setting	**Population**: Women with abnormal cytology referred to Colposcopy Clinic **Sample size**: 109 enrolled (100 complete samples)

	Setting: National Health Service (NHS) Colposcopy Clinic (Dumfries and Galloway Royal Infirmary), Scotland, UK.
Index tests	Self-sampled test: HPV DNA, Cobas 4800 HPV Test (Roche Molecular Systems, California, USA) **Instructions**: Women were advised to insert the brush into the vagina and slowly rotate it a few times. **Sample collection**: In the clinic. **Sampling device and storage medium**: Rovers Cervex-Brush (Oss, The Netherlands). The brush was subsequently suspended in 5 mL of ThinPrep, PreservCyt Solution (Hologic, UK).
Comparator test	Clinician-sampled HPV tests: HPV DNA, Cobas 4800 HPV Test (Roche Molecular Systems, California, USA) **Sample collection:** Prior to undertaking colposcopy, the clinician collected an LBC sample. **Sampling device and storage medium**: Cervexbrush in liquid, liquid based cytology (LBC).
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected sample: 92/100 self-collected sample: 91/100 **HR-HPV detection agreement: % (95% CI)** 94% (87 to 98) **HPV detection agreement: Kappa (95% CI)** Not stated
Risk of bias	Unclear

Stanczuk 2016

Patient sampling	**Design**: Multicenter cross-sectional study **Inclusion/exclusion**: All women, 20-60 years, other than those previously diagnosed with CIN2+, presenting for routine cervical screening.

Patient characteristics and setting	**Population**: Women attending routine cervical screening in primary care. **Sample size**: 5318 enrolled (5299 clinician-collected samples, 5208 self-collected samples) **Setting**: 40 general practice clinics serving 160 000 inhabitants in the region of Dumfries and Galloway in Scotland, UK.
Index tests	Self-sampled test: HPV DNA. Cobas 4800 DNA HPV test. **Instructions**: Women were advised to follow instructions printed on the collection kit. **Sample collection**: Women self-collected a vaginal sample prior to a routine cervical sample being collected by the clinician. **Sampling device and storage medium**: Cobas PCR female swab sample packets (Roche Molecular Systems), validated for chlamydia/gonorrhea (CT/NG) self-vaginal sampling. Liquid stored swab. Swabs were immediately immersed in tubes containing Roche PCR media. In an early pilot phase, 200 patients used two swabs together for sampling, one immersed immediately in buffer as above, the other left dry for 28 days before immersion in the laboratory immediately prior to assay.
Comparator test	Clinician-sampled HPV tests: HPV DNA. Cobas 4800 DNA HPV test. **Sample collection:** Cervical liquid-based cytology (LBC) samples were clinician collected. Three milliliter of LBC sample was aliquoted into a separate tube for HPV testing. **Sampling device and storage medium**: Rovers Cervex-Brush (Oss, the Netherlands) and suspended in 20ml of ThinPrep solution (PreservCyt Solution, Hologic, UK).
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled HPV tests and clinician-sampled HPV tests **Detection of HR-HPV positives** clinician-collected cervical sample: 787/5299 self-collected vaginal sample: 867/5208 **HR-HPV detection agreement: % (95% CI)** Not stated **HPV detection agreement: Kappa (95% CI) N**ot stated

Risk of bias	Unclear

Ting 2013

Patient sampling	**Design**: Single centre cross-sectional study **Inclusion/exclusion:** Women were excluded if they had undergone hysterectomy or were in the second trimester of pregnancy or later.
Patient characteristics and setting	**Population**: Female sex workers, aged 18 to 49 **Sample size**: 344; 350 originally enrolled **Setting**: Clinic in Nairobi slum area
Index tests	Self-sampled HPV test: Aptima hrHPV mRNA (AHPV; Hologic/Gen-Probe Incorporated, San Diego, CA, USA) **Instructions**: Pictoral instructions **Sample collection**: Self-collected cervicovaginal specimen. Collected at clinic, exact location not specified. **Sampling device and storage medium**: Aptima Cervical Specimen Collection and Transport cytobrush (Hologic/Gen-Probe Incorporated, San Diego, CA, USA). Brush swirled in Aptima specimen transport medium.
Comparator test	Clinician-sampled HPV tests: Aptima hrHPV mRNA (AHPV; Hologic/Gen-Probe Incorporated, San Diego, CA, USA) **Sample collection:** Physician collected two cervical samples; one for Aptima test, one for conventional Pap test. **Sampling device and storage medium**: Cervex-Brush (Rovers Medical Devices, Oss, the Netherlands). Brush swirled in PreservCyt (Hologic Corporation, Marlborough, MA, USA).
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between AHPV physician testing and self-testing **hrHPV positive rate, AHPV** Physician collection: 103/344 (29.9%) Self-collection: 98/344 (28.5%) **AHPV detection agreement: Kappa (95% CI)**

	Physician collected vs self-testing: 0.59 (0.49-0.68)
Risk of bias	Unclear

Toliman 2019

Patient sampling	**Design**: Multicentre cross-sectional study **Inclusion/exclusion**: Women in target age group for cervical screening.
Patient characteristics and setting	**Population**: Women aged 30-54 years (target age group for cervical screening in Papua New Guinea). **Sample size**: 1 005 women enrolled. Total 985 vaginal + cervical samples tested for any hrHPV using Xpert, Cobas 4800 and Aptima. **Setting**: Two clinics for women located in the Highlands region of Papua New Guinea.
Index tests	Self-sampled HPV test: Xpert HPV; Cobas 4800; Aptima **Instructions**: Oral instructions and pictoral guide. **Sample collection**: Vaginal sample. Self-collection was conducted in a private room in each participating clinic, device then returned to laboratory technician. **Sampling device and storage medium**: Cytobrush, placed by laboratory technician in ThinPrep PreservCyt (Hologic, Marlborough, MA, USA)
Comparator test	Clinician-sampled HPV tests: Xpert HPV; Cobas 4800; Aptima **Sample collection:** Endocervical sample collected by clinician during gynecological examination. **Sampling device and storage medium**: Cytobrush, same type as self-sample. Immediately placed in PreservCyt.
Flow and timing	Time interval between index and comparator tests: Consecutive
Outcomes	Agreement between Self-collected samples and clinician-collected samples **hrHPV positive rate** Self-samples: 14.4% (clinic 1) / 15.5% (clinic 2) Clinician-collected samples: 10.8% (clinic 1) / 12.9% (clinic 2) **hrHPV detection agreement: Kappa (95% CI)**

	Self-sample (vaginal) Xpert vs clinician-collected (cervical) Xpert: 0.74 (0.70-0.79) Self-sample (vaginal) Xpert vs clinician-collected (cervical) Cobas 4800: 0.73 (0.70-0.76) Self-sample (vaginal) Xpert vs clinician-collected (cervical) Aptima: 0.59 (0.53-0.65) Self-sample (vaginal) Cobas 4800 vs clinician-collected (cervical) Xpert: 0.76 (0.70-0.82) Self-sample (vaginal) Cobas 4800 vs clinician-collected (cervical) Cobas 4800: 0.77 (0.70-0.83) Self-sample (vaginal) Cobas 4800 vs clinician-collected (cervical) Aptima: 0.61 (0.55-0.67) Self-sample (vaginal) Aptima vs clinician-collected (cervical) Xpert: 0.65 (0.59-0.71) Self-sample (vaginal) Aptima vs clinician-collected (cervical) Cobas 4800: 0.69 (0.63-0.75) Self-sample (vaginal) Aptima vs clinician-collected (cervical) Aptima: 0.63 (0.57-0.69) Most comparisons demonstrated that V (vaginal) specimen results had substantial (kappa 0.6 – 0.8) to almost perfect (kappa 0.8 – 1.0) agreement with C (cervical) specimens, particularly for the detection of HPV 16.
Risk of bias	Unclear

Tranberg 2018

Patient sampling	**Design**: Multicentre cross-sectional study **Inclusion/exclusion**:
Patient characteristics and setting	**Population**: 30 to 59-year-old women diagnosed with low-grade cytological lesions within the screening program. **Sample size**: 213. 1110 women were eligible, 216 returned a self-sample. Three self-samples excluded. **Setting**: Home / GP clinic
Index tests	Self-sampled HPV test: HPV DNA Cobas 4800 (Roche Diagnostics, Switzerland) **Instructions**: Written and picture-based user instructions sent together with sampling device. **Sample collection**: Self-sample at home

	Sampling device and storage medium: Dry-stored brush - Evalyn brush (Rovers Medical Devices B.V., Oss, Netherlands). Resuspended in SurePath medium (BD Diagnostics, Burlington, NC) upon arrival in laboratory.
Comparator test	Clinician-sampled HPV tests: HPV DNA Cobas 4800 (Roche Diagnostics, Switzerland) **Sample collection:** Physician took sample from cervix. **Sampling device and storage medium**: Cervical brush. Brush head placed in SurePath medium (BD Diagnostics, Burlington, NC) and mailed to laboratory.
Flow and timing	Time interval between index and comparator tests: Median number of days between samples: 43 days (IQR: 34-53 days, range: 13-95 days)
Outcomes	Agreement between Self-collected samples and GP-collected samples **hrHPV positive rate, HPV DNA** Self-samples: 52/213 (24.4%) GP-collected samples: 47/213 (22.1%) **hrHPV detection agreement: Kappa (95% CI)** Self-sample vs GP-collected samples: 0.70 (0.58-0.81)
Risk of bias	Unclear

Twu 2010

Patient sampling	**Design**: Multicenter cross-sectional study **Inclusion/exclusion**: Women who had not received a Pap smear in the previous three years were included in this study. Exclusion criteria included acute cervicitis or vaginitis, pregnancy, menstruating period, or sexual intercourse within two days before the study.
Patient characteristics and setting	**Population**: Women due for Pap smear test, screening **Sample size**: 1 717 **Setting**: Clinic
Index tests	Self-sampled HPV test: HPV Blot test (EasyChip, King Car, YiLan, Taiwan) **Instructions**: Not specified, probably oral instructions by physicians. **Sample collection**: Vagina sample. The patients were instructed to introduce the cytobrush into the vagina till they met with resistance, and

	then rotate the brush 3-5 times to take specimens for HPV typing. The women performed the self-collections at clinic before the clinical collection. Exact location not specified. **Sampling device and storage medium**: Cytobrush. Specimens smeared onto clear slides, cells remaining on cell sampling instruments placed in tube containing 10 mM Tris-HCl, 1mM EDTA, pH7.5 solution.
Comparator test	Clinician-sampled HPV tests: HPV Blot test (EasyChip, King Car, YiLan, Taiwan) **Sample collection:** Physician took sample from cervix and the endocervical canal. **Sampling device and storage medium**: Ayre's spatula and endocervical cytobrush. Specimens smeared onto clear slides, cells remaining on cell sampling instruments placed in tube containing 10 mM Tris-HCl, 1mM EDTA, pH7.5 solution.
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between vaginal samples and cervical samples **hrHPV positive rate, HPV Blot** Vaginal samples: 15.9% Cervical samples: 23.8% **HPV detection agreement: Kappa (95% CI)** Vaginal vs Cervical specimens: 0.37 (0.25-0.50)
Risk of bias	Unclear

Van Baars 2012

Patient sampling	**Design**: Multicentre cross-sectional study **Inclusion/exclusion**: Women were included if they visited one of two participating gynecological outpatient clinics for colposcopic evaluation due to an abnormal Pap smear or for a follow-up visit after an abnormal Pap smear.
Patient characteristics and setting	**Population**: Women 18 years and above visiting gynecological outpatient clinics due to abnormal Pap smear. **Sample size**: 134 **Setting**: Gynecological outpatient clinics, Netherlands.

Index tests	Self-sampled test: HPV DNA (HPV SPF10-LiPA25, version 1; Labo Bio-medical Products B.V., Rijswijk, Netherlands / GP5/6 primer-mediated PCR assay; Diassay, Rijswijk, Netherlands). **Instructions**: Women were given verbal and written instructions with illustrations. **Sample collection**: The women performed the self-collections at clinic before the clinical collection. Exact location not specified. **Sampling device and storage medium**: Dry-stored brush - Evalyn brush (Rovers Medical Devices B.V., Oss, Netherlands). Resuspended in Thinprep (Hologic, Marlborough MA, USA) upon arrival in laboratory.
Comparator test	Clinician-sampled HPV tests: HPV DNA (HPV SPF10-LiPA25, version 1; Labo Bio-medical Products B.V., Rijswijk, Netherlands / GP5/6 primer-mediated PCR assay; Diassay, Rijswijk, Netherlands). **Sample collection:** The physician obtained a liquid-based cytology sample. **Sampling device and storage medium**: Cervexbrush in liquid (Rovers medical Devices B.V., Oss, Netherlands). ThinPrep medium (Hologic, Marlborough, MA, USA) or SurePath medium (Klinipath BV, Duiven, Netherlands).
Flow and timing	Time interval between index and comparator tests: consecutive
Outcomes	Agreement between self-sampled dry brush and physician-sampled liquid-based sample. **Detection of hrHPV positives, SPF10 PCR-DEIA-LiPA25 system** Physician-collected sample: 72/134 (54%) Dry brush self-collected sample: 71/134 (53%) **Detection of hrHPV positives, GP5+/6+-LQ** Physician-collected sample: 58/134 (43%) Dry brush self-collected sample: 56/134 (42%) **HPV detection agreement: Kappa (95% CI)** Clinician-collected sample vs self-collected sample, SPF10 PCR-DEIA-LiPA25: 0.691 (0.617-0.766) Clinician-collected sample vs self-collected sample, GP5+/6+-LQ: 0.725 (0.607–0.843)
Risk of bias	Unclear

Frågeställning 4

Kitchener 2009

Clinical setting and study design	**Design: Randomized control study** **Trial name:** ARTISTIC **Inclusion/exclusion:** not stated **Allocation:** All women had both cytology and HPV testing and were randomly assigned at a ratio of 3:1 to have the HPV result reported and acted on (revealed group) or concealed from the woman and her doctor (concealed group).
Patient characteristics	**Population**: Women aged 20 to 64 years **Sample size**: 24 510 eligible women at entry (18 386 in the revealed group), For 20 to 29 years in the revealed group, n=3879. **Setting**: Women attending after receiving a routine invitation for screening within the National Health Service Cervical Screening Programme (NHSCSP) were recruited in general practice and family-planning clinics in Greater Manchester.
Index and comparator tests	**Index test (self-collected sample):** Testing for high-risk HPV DNA was done according to manufacturer's instructions using the Digene Hybrid Capture 2 (HC2, Qiagen; Crawley, UK) test. **Comparator text (clinician collected sample):** Slides were prepared from LBC samples on a ThinPrep T3000 processor (Hologic; Crawley, UK). Cytolgy was reported using the classification of the British Society of Cervical Cytology.
Reference standard	**Histologically confirmed CIN2+:** Colposcopy was done for women with a single high-grade (moderate or severe) cytological abnormality. Women with a low-grade (borderline or mild) cytological abnormality were referred for colposcopy after two consecutives mild dyskaryosis or three consecutive borderline results. Biopsy samples were taken in the presence of an abnormality; random punch biopsy samples were not taken in cases of negative, satisfactory colposcopy. High-grade cytology required a biopsy, and if not a punch biopsy, a loop excision of the transformation zone was done.
Screening pathway	
Outcomes	Women aged 20–29 years (n=3879; 236 CIN2+) **Relative[1] sensitivity:** (% [95% CI]) Cytology with HPV triage of borderline lesions: 88.6% (83.8–92.3) HPV with cytology triage: 86.9 (81.9–90.9) **Relative1 specificity:** (% [95% CI])

	Cytology with HPV triage of borderline lesions: 86.9 (81.9–90.9) HPV with cytology triage: 87.9 (86.8–89.0) [1]From the revealed group, we have analysed different combinations of cytology and HPV testing in primary screening and triage with respect to their sensitivities and specificities (relative to the combined testing of the revealed group).
Risk of bias	Unclear
Notes	