## MTC - MAIN TRAINING COURSE

### MTC 01
**Trends and specific aspects of HPV driven cancer (cervix, anus, vulva, penile, oropharynx)**
8:15 - 9:45
Chair: S. Franceschi (Italy), A. Giuliano (USA)

The Opening Session will set the pace of what is happening to cancer types related to HPV infection in an era of big changes in prevention strategies for these tumours. Presentations will tackle the evolution of burden of cases and deaths from HPV-related cancers and highlight substantial differences by world region and cancer site. There will be room to compare cancer trends with changes in sexual behaviour and to revisit the natural history of HPV carcinogenesis, that is exquisitely dependent from the type of epithelium infected.

- International trends in incidence and survival of HPV-related cancers
- Epidemiology of HPV infection
- Current knowledge on HPV transmission, sexual behaviour messages
- Carcinogenesis differ by epithelial sites
- Discussion

M. Shiels (USA)  
A. Giuliano (USA)  
A. D’Souza (USA)  
J. Doorbar (UK)

### MTC 02
**Revisiting the progress, practices and implementation of HPV based screening**
10:15 - 11:45
Chair: J. Cuzick (UK), W. Kinney (USA)

Implementation of HPV based screening programs comes with its own set of problems and opportunities. Experts will share their experience and recommendations in this session.

- HPV based screening strategies
- Developing useful biomarkers for screening and triage
- Implementation experiences of HPV based screening
- Screening in vaccinated women
- Self-screening programs – current experience
- Discussion

J. Cuzick (UK)  
D. Jenkins (UK)  
S. Van Dijk (Netherlands)  
J. Dillner (Sweden)  
H. Berkhof (Netherlands)

### MTC 03
**Updating HPV immunization worldwide, the state of the art and new challenges**
13:30- 15:00
Chair: P. Bonanni (Italy), J. Brotherton (Australia)

Prophylactic HPV vaccines have proven to be remarkably safe and effective in population use. In this course, we review the impacts so far, and examine future possibilities in considering the evidence relating to extension of vaccine programs to males, to women post treatment, to immunosuppressed populations, and to adults.

- Public health impact of HPV vaccines
- Vaccination of boys: the rationale
- Individual impact of HPV immunization in adults – new developments
- Post-conization
- Immunosuppression
- Adult protection
- Discussion

J. Brotherton (Australia)  
P. Bonanni (Italy)  
TBD  
E. Joura (Austria)  
J. Palefsky (USA)  
X. Bosch (Spain)
**MSS - MAIN SCIENTIFIC SESSIONS**

**MSS 01  Ecology of HPV in post-vaccination era**
Chair: E. Franco (Canada), M. Lehtinen (Finland)  
8:00 - 9:30

This session seeks to help understand the new population biology between oncogenic human papillomaviruses and their human hosts following the strong selective pressure of prophylactic HPV vaccination. The plenary lecture of Melanie Drolet on the pre-requisites of anticipated changes in HPV ecology is followed by presentations by David Mesher, Joe Tota and Penelope Gray of respectively observational, individually randomized and community-randomized studies on HPV type-replacement in vaccinated populations, vaccinated individuals and unvaccinated individuals, who are under substantial herd effect. The empirical data will be compared for modeling predictions of Irene Man and Ville Pimenoff about estimating changes in the HPV type and subtype distributions in the post vaccination era.

- Population-level impact of HPV vaccination programs on vaccine and non-vaccine HPV type sets the stage for changes in HPV ecosystem
- Systematic and country-wise analyses of HPV type-replacement following vaccination programs
- Evaluation of HPV type-replacement in HPV vaccination trials
- HPV type-replacement in populations following girls-only and gender-neutral vaccination
- Mathematical modelling of HPV type-replacement
- Differential HPV diversity and distribution in the pre- and post-vaccination era
- Discussion

**MSS 02  New triage approaches for HPV-positive women - what is the evidence?**
Chair: J. Dillner (Sweden), N. Wentzensen (USA)  
9:30 - 11:00

Primary HPV screening is being widely introduced world-wide. While a negative HPV test provides great reassurance against cervical precancer and cancer, a positive HPV test requires additional triage to decide who needs to be referred for diagnostic evaluation and treatment. Current triage strategies include genotyping for HPV16/18 and cytology, but several new technologies are being evaluated that can improve the clinical performance compared to current standards. This session will summarize the most important novel triage strategies and show the latest data and developments.

- Extended HPV genotyping
- Viral methylation
- Host methylation and miRNA
- Automated Dual Stain
- New visual approaches
- Discussion
### MSS 03 
**PRO / CON Session - Hot topics**  
Chair: E. Franco (Canada), T. Wright (USA)  
14:00 - 15:30

Point/Counterpoint or Pro/Con debates have been a popular type of scientific session in EUROGIN congresses since the 1990’s. They capture the arguments on opposing sides of controversial or hot topics in HPV science and its practical aspects, such as vaccination, cervical cancer screening, and disease etiology. The session in 2019 will showcase debates between camps on five key areas: (I) elimination of cervical cancer, (II) the future of cytology, (III) the meaning of HPV-negative cervical cancers, (IV) age to exit cervical cancer screening, and (V) earliest observation of the impact of vaccination on cervical cancer incidence.

- Can we eliminate cervical cancer?  
  - Yes  
  - No  
  A. Giuliano (USA) - J. Tota (USA)

- Will cytology eventually go to the dustbin of cervical cancer history?  
  - Yes  
  - No  
  C. Meijer (Netherlands) - T. Wright (USA)

- HPV-negative cervical cancers: are they worse clinically?  
  - Yes  
  - No  
  D. Jenkins (UK) - L. Alemany (Spain)

- Should women over 65 exit cervical cancer screening?  
  - Yes  
  - No  
  T. Malagon (Canada) - A. Rositch (USA)

- Has vaccination already reduced cervical cancer incidence?  
  - Yes  
  - No  
  X. Bosch (Spain) - M. Lehtinen (Finland)

- Discussion

### MSS 04 
**Vaccinating adult women and men - a new challenge for populations at risk**  
Chair: X. Bosch (Spain), P. Gravitt (USA)  
16:00 - 17:30

Primary HPV screening is being widely introduced world-wide. While a negative HPV test provides great reassurance against cervical precancer and cancer, a positive HPV test requires additional triage to decide who needs to be referred for diagnostic evaluation and treatment. Current triage strategies include genotyping for HPV16/18 and cytology, but several new technologies are being evaluated that can improve the clinical performance compared to current standards. This session will summarize the most important novel triage strategies and show the latest data and developments.

- Review evidence from clinical efficacy trials  
- Review evidence from population effectiveness studies of CIN2+ incidence by age at vaccination  
- Review evidence for effectiveness of post-CIN treatment vaccination  
- Review evidence from modeling  
- Review evidence from % of new HPV detection resulting from acquisition/re-infection VS recurrent detection/reactivation  
- Trends in sexual behaviour in the British population: insights from the National Surveys of Sexual Attitudes and Lifestyles (NATSAL)  
- Discussion

- S. Garland (Australia)  
- M. Silverberg (USA)  
- E. Joura (Austria)  
- C. Van Schalkwyk (South Africa)  
- P. Gravitt (USA)  
- P. Sonnenberg (UK)
### MSS 05  
**Methylation: from molecular biology to clinical practice**  
17:30 - 19:00  

**Part A: The role of viral genome methylation in the normal life cycle control and the pathogenesis of HPV**  
Chair: J. Doorbar (UK), M. Von Knebel-Döberitz (Germany)

- Epigenetics in HPV caused cancers  
- Viral epigenome and its implication in viral gene expression regulation  
- Therapeutic implications of demethylation drugs  

R. Steenbergen (Netherlands)  
M. Von Knebel Döberitz (Germany)  
E. Prigge (Australia)

**Part B: DNA methylation for screening and triage of ano-genital cancers**  
Chair: A. Lorincz (UK)

A general characteristic of progressing epithelial precancers is increasingly diverse and large changes in methylation. DNA methylation biomarker panels are highly reproducible and easy to measure from biopsies, exfoliated cells and body fluids. For HPV-related diseases methylation tests show very good performance and have many advantages versus other triage methods, providing simultaneous information on both diagnosis and prognosis. This session will explore progress in the biology of DNA methylation, the growing impetus for methylation-based triage algorithms and prospects for routine commercial methylation tests.

- Performance of a cocktail HPV DNA methylation test with 12 or more types  
- Routine DNA methylation testing in Colombia, is it feasible?  
- Results of the Qiasure DNA methylation test in routine use  
- Performance of the GYNTECT methylation assay in triage of HPV positive women  
- Is the S5 DNA methylation test useful as a predictor of CIN3 and cancer in HPV-infected women?  
- HPV triage – longitudinal studies  
- Discussion  

M. Clarke (USA)  
G. Sanchez (Colombia)  
C. Meijer (Netherlands)  
M. Dürst (Germany)  
A. Lorincz (UK)  
D. Heideman (Netherlands)

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### MSS 06  
**Towards cervical cancer elimination: what do we need to know?**  
8:00 - 9:30  

Chair: M. Brisson (Canada), M. Jit (UK)

The Director-General of the World Health Organization Director-General has issued a call for action to eliminate cervical cancer as a public health problem. Since then, there has been widespread consultation, debate and analysis around the topic. This session brings together speakers who are at the heart of the discussion around cervical cancer elimination about the rationale, feasibility, action required and timeline to achieve elimination.

- Elimination of HPV related cancers: ambitious but achievable, examples of success  
- Why did WHO call for cervical cancer elimination? The motivation and the evidence  
- Elimination and eradication: do the differences matter?  
- How soon can we eliminate cervical cancer: Comparative modelling of vaccine and screening options  
- What do we know about cervical cancer incidence in the world today?  
- Which will be the first country to eliminate cervical cancer?  
- Discussion  

A. Giuliano (USA)  
M. Broutet (Germany)  
M. Jit (UK)  
M. Brisson (Canada)  
F. Bray (France)  
K. Canfell (Australia)
### MSS 07

**Artificial intelligence: digital pathology and machine learning applications for precision prevention of cervical cancer**

Chair: J. Monsonego (France), N. Wentzensen (USA)

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<thead>
<tr>
<th>Time</th>
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<tr>
<td>10:00-11:30</td>
<td>• Digital pathology</td>
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<td>• Machine learning</td>
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<tr>
<td></td>
<td>• Radiology / other imaging</td>
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<td>• AI applications for cervical cancer screening</td>
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<td>• Discussion</td>
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**Speakers**
- N. Grabe (Germany)
- S. Antani (USA)
- TBD
- N. Wentzensen (USA)

### MSS 08

**Challenges for HPV self-sampling as primary screening tool in organized cervical screening**

Chair: M. Elfström (Sweden), S. Van Dijk (Netherlands)

HPV tests on self-samples were introduced for non-responders of the national screening program. Now, the Netherlands are exploring options of a wider use of self-sampling in the Dutch cervical cancer screening program. There are quite some challenges to overcome before self-sampling can be a primary screening tool, like validation of HPV tests on self-samples and triage on self-samples. That's what this session will be about.

- Experiences and challenges for self-sampling in Denmark
- Challenges for primary self-sampling in the Netherlands
- Clinical validation of HPV tests on self-sampling (HPV tests/brushes/medium etcetera)
- Challenges for triage
- Discussion

**Speakers**
- J. Bonde (Denmark)
- S. Van Dijk (Netherlands)
- M. Arbyn (Belgium)
- D. Heideman (Netherlands)

### MSS 09

**Cervical screening programs from a flow-chart point of view**

Chair: J. Bonde (Denmark), A. Tropé (Norway)

How to best utilize HPV screening with the many new options this technology offers? In this session, screening algorithms from different countries will be presented along with the reasons for the choices made showing how HPV, genotyping, cytology and other methods are combined to provide better cervical cancer screening.

- The Swedish screening program
- The Norwegian screening program
- The Dutch screening program
- The Danish screening program
- The Scottish screening program
- US cervical screening
- The Australian cervical screening program
- Discussion

**Speakers**
- J. Dillner (Sweden)
- A. Tropé (Norway)
- S. Van Dijk (Netherlands)
- J. Bonde (Denmark)
- T. Palmer (UK)
- TBD
- J. Brotherton (Australia)
### MSS - MAIN SCIENTIFIC SESSIONS

**MSS 10**  
**Risk-based HPV screening: from one-size-fits-all to personalized screening programs**  
Chair: H. Berkhof (Netherlands), G. Ogilvie (Canada)  

Molecular based screening for cervical cancer is now well established as offering improved detection and greater protection for women for pre-cancerous lesions. However, significant unanswered questions remain as to how to optimize screening programs for women with different risk profiles. In this session, leaders in the field will provide reflections on the current thinking on risk based screening with molecular testing for HPV.

- E-health and M-health platforms to facilitate risk-based cervical screening  
- Towards fully molecular risk stratification  
- Risk based screening - the US experience  
- When to start screening after vaccination? Intermediate results of a Finnish randomized trial  
- Epimetheos - an open source platform for risk-based modeling  
- Discussion

### SS - SCIENTIFIC SESSIONS

**SS**  
**Updating triage methods in HPV based screening**  
Chair: M. Arbyn (Belgium), J. Cuzick (UK)  

### SS

**HPV and molecular testing of self-collected samples**  
Chair: A. Lorincz (UK), C. Meijer (Netherlands)  

**HPV vaccination in sexually active persons (I)**  
Chair: TBD

### SS - SCIENTIFIC SESSIONS

**SS**  
**Wider use of HPV self-sampling in screening programs: current practice**  
Chair: H. Berkhof (Netherlands), D. Heideman (Netherlands)  

**Cervical cancer screening and immunization in low and middle income countries**  
Chair: JP Bogers (Belgium), J. Smith (USA)
### SS - SCIENTIFIC SESSIONS

#### THURSDAY, DEC. 5

<table>
<thead>
<tr>
<th>SS</th>
<th>Title</th>
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<tr>
<td>SS</td>
<td>Total protection and durability of the HPV vaccines</td>
<td>A. Kreimer (USA), P.L. Lopalco (Italy)</td>
<td>9:30 - 11:00</td>
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<td>SS</td>
<td>First-void urine as a potential biomarker for triage of HPV and vaccine program follow-up</td>
<td>R. Steenbergen (Netherlands), A. Vorsters (Belgium)</td>
<td>9:30 - 11:00</td>
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<td>SS</td>
<td>HPV vaccination in sexually active persons (II)</td>
<td>TBD</td>
<td>14:00 - 15:30</td>
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<td>SS</td>
<td>HPV vaccination update</td>
<td>TBD</td>
<td>16:00 - 17:30</td>
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<tr>
<td>SS</td>
<td>Effect of HIV on HPV and related cancers</td>
<td>A. D’Souza (USA), M. Shiels (USA)</td>
<td>17:30 - 19:00</td>
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#### FRIDAY, DEC. 6

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<tr>
<td>SS</td>
<td>Screening for anal cancer precursors in women</td>
<td>J. Palefsky (USA), L. Abramowitz (France)</td>
<td>8:00 - 9:30</td>
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<tr>
<td>SS</td>
<td>Cervical screening of vaccinated birth cohorts</td>
<td>J. Bonde (Denmark), C. Cuschieri (UK)</td>
<td>10:00 - 11:30</td>
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<td>SS</td>
<td>Control of high-risk HPV transmission - disinfection issues in clinical practice</td>
<td>J. Doorbar (UK)</td>
<td>14:15 - 15:45</td>
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### SS - SCIENTIFIC SESSIONS

**FRI DAY, DEC. 6**

| SS | Therapeutic options for low-risk HPV infection and disease  
|    | Chair: S. Best (USA), C. Lacey (UK) | 16:15 - 17:45 |
| SS | Esophageal cancer and HPV: a peculiar geographic risk profile  
|    | Chair: K. Syrjänen (Finland) |
| SS | Immune responses to HPV infection  
|    | Chair: M. Stanley (UK), S. Syrjänen (Finland) | 17:45 - 19:15 |

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### SS - SCIENTIFIC SESSIONS

**SATURDAY, DEC. 7**

| SS | HPV based screening for cervical cancer  
|    | Chair: K. Canfell (Australia), P. Georgi Rossi (Italy) | 8:00 - 9:30 |
| SS | Validation of HPV assays for primary screening  
|    | Chair: M. Arbyn (Belgium), F. Carozzi (Italy) | 9:30 - 11:00 |
| SS | Update on next generation sequencing research  
|    | Chair: T. Lftner (USA), L. Mirabello (USA) | 11:00 - 12:30 |

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### CS - CLINICAL SESSIONS

**THURSDAY, DEC. 5**

| CS 01 | Best strategies to prevent and follow women after conization for CIN3  
|       | Chair: S. Garland (Australia), J. Paavonen (Finland) | 8:00 - 9:30 |
| CS 02 | Risk and prevention of cervical cancer in post-menopausal women  
|       | Chair: C. Bouchard (Canada), P. Gravitt (USA) | 9:30 - 11:00 |
CS - CLINICAL SESSIONS

THURSDAY, DEC. 5

CS 03 LLETZ
Chair: Pekka Nieminen (Finland), C. Redman (UK) 14:00 - 15:30

CS 04 HPV assays - from practice to research development
Chair: M. Poljak (Slovenia) 16:00 - 17:30

CS 05 Age to start and stop screening and how it will change with HPV
Chair: P. Georgi Rossi (Italy) 17:30 - 19:00

CS - CLINICAL SESSIONS

FRIDAY, DEC. 6

CS 06 HPV vaccination and use of new technologies in women at high risk of cervical disease
Chair: J. Dillner (Sweden), M. Kyrgiou (UK) 8:00 - 9:30

CS 07 Cervical neoplasia - stump the expert (interactive session)
Chair: J. Bornstein (Israel), E. Paraskavaidis (UK), A. Singer (UK) 10:00 - 11:30
The approach to diagnosing, classifying and treating cervical intraepithelial neoplasia has changed with recent advances. This time, we will present contemporary cases to a panel of experts. The experts’ diagnosis and management will be questioned by the moderators and the audience.

CS 08 Management / Colposcopy
Chair: J. Bornstein (Israel), D. Jenkins (UK) 13:00 - 14:15
This session will critically examine the traditional approach to diagnosis and management of cervical abnormalities at the colposcopy clinic and discuss the appropriate integration of HPV genotyping and biomarkers’ use in different clinical situations, and the way they are reflected in the different guidelines.

CS 09 Treatment of anal cancer precursors
Chair: A. Nyitray (USA), M. Einstein (USA) 14:15 - 15:45

CS 10 Microbiome
Chair: B. Moscicki (USA) 16:15 - 17:45
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<tr>
<td>CS 11</td>
<td>How to act against fake news, anti-vaccination movements and manipulation of public opinion</td>
<td>E. Karafillakis (UK), M. Nygard (Norway)</td>
<td>17:45 - 19:15</td>
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**HN - HPV & HEAD AND NECK CANCERS**

**WEDNESDAY, DEC. 4**

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<th>Code</th>
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<tr>
<td>HN 01</td>
<td>HPV and head &amp; neck cancer - Treatment</td>
<td>P. Bossi (Italy)</td>
<td>8:15 - 9:45</td>
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<tr>
<td>HN 02</td>
<td>Screening for HPV (I)</td>
<td>A. Giuliano (USA)</td>
<td>10:30 - 12:00</td>
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<tr>
<td>HN 03</td>
<td>Screening for HPV (II)</td>
<td>A. D’Souza (USA)</td>
<td>13:30 - 15:00</td>
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<tr>
<td>HN 04</td>
<td>HPV and head and neck cancer - Submitted papers</td>
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<td>15:30 - 17:00</td>
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**THURSDAY, DEC. 5**

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<tr>
<td>HN 05</td>
<td>Surveillance for recurrent HPV</td>
<td>H. Mirghani (France)</td>
<td>8:00 - 9:30</td>
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<tr>
<td>HN 06</td>
<td>Molecular characterization / emerging biomarkers of HPV positive OPSCC</td>
<td>J. Zevallos (USA)</td>
<td>9:30 - 11:00</td>
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<tr>
<td>HN 07</td>
<td>HPV and RRP (recurrent respiratory papillomatosis)</td>
<td>S. Best (USA)</td>
<td>14:00 - 15:30</td>
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<tr>
<td>HN 08</td>
<td>HPV and head and neck cancer - Submitted papers</td>
<td>TBD</td>
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WS 01  Workshop on HPV immunization
Chair: P.L. Lopalco (Italy), P. Van Damme (Belgium)

- Introduction
- One-dose HPV schedule: a future option?
- Vaccination of sexually active women: an indication?
- HPV vaccine introduction in Asia
- Follow-up studies with bi-valent and quadrivalent vaccines in Europe: impact on cervical diseases and elimination
- Impact of HPV vaccination on the incidence of cervical cancer
- The HPV vaccination program in the UK: preparation and implementation
- Discussion

P. Van Damme (Belgium)
M. Stanley (UK)
E. Franco (Canada)
S. Hanley (Canada)
K. Pollock (UK)
M. Arbyn (Belgium)
J. Yarwood (UK)

WS 02  Cervical Cancer Screening Quality Assurance
Chair: S. Lönnberg, N. Segnan

Screening and prevention of cervical cancer is undergoing major changes with the deployment of new screening methods and immunization programmes. However, screening coverage remains an important determinant for the success of population-based cancer prevention efforts. Many programmes still struggle with suboptimal attendance or adherence to the guidelines. This workshop aims to assess the recommendations from the current European guidelines and explore available strategies to improve screening coverage among hard to reach of women, discuss barriers to implementation of the quality assured screening strategies and look for possible solutions.

Part 1

- Opening - What do we mean with quality assurance and quality improvement?
- Recommended QA and organization of cervical cancer screening
- Barriers in attendance and access to quality assured screening
- Screening and importance of primary prevention
- How to enroll actively in a cohort never or inadequately screened women
- Implementation and findings of primary HPV testing based on screening statistics
- Discussion

S. Lönnberg (Finland) - N. Segnan (Italy)
S. Lönnberg (Finland)
D. Rezeberga (Latvia)
P. Armaroli (Italy)
N. Segnan (Italy)
M. Elfström (Sweden)
Part 2: Interactive session with selected papers

Interactive part with presentations from conference participants. Focus: resolving barriers for effective screening, e.g. on poor coverage or attendance, problems with adherence to guidelines – also in the management of women tested positive – or lack of necessary evaluation research and monitoring. Five presentations with discussion with the faculty and audience. The interactive part can cover:

- Efforts to improve organization and fail-safe
- Improving coverage and impact in hard-to-reach population by conventional or new methods, and informed participation
- Plans and results on improving equity
- Efforts to improve organization and fail-safe
- Synergies with screening and HPV vaccination

Summary and Close

WS - SPECIALIZED WORKSHOP included in congress registration WEDNESDAY, DEC. 4

WS 03 Workshop Vulvar and Anal Diseases 13:30 - 18:00

Part 1: Vulvovaginal syndromes
Chair: G. Donders (Belgium), J. Paavonen (Finland)

- Localized provoked vulvodynia: conservative management or surgery?
- Vulvar dermatoses: natural history and risk for malignancy
- Bacterial vaginosis
- Aerobic vaginitis
- Selected case presentations
- Discussion

Part 2: Stump the expert: Vulvovaginal and anal neoplasia - what is your diagnosis?
Chair: J. Bornstein (Israel)

The approach to diagnosing, classifying and treating a vulvar and anal condition has always been complicated. In the case of HPV-associated lesions and intraepithelial neoplasia, it may be controversial. This time, our course will discuss the approach to vulvar disease by presenting cases with vulvar lesions to a panel of experts. The expert’s diagnosis and management will be questioned by the moderators and the audience.

- Case presentations: Vulvar intraepithelial neoplasia
- Case presentations: Vaginal intraepithelial neoplasia
- Case presentations: Anal intraepithelial neoplasia
- Case presentations: Vulvodyna
- Discussion and Close
Colposcopy Course - Organized in conjunction with the European Federation for Colposcopy (EFC)

Coordination: A. Singer (UK)

14:15 - 17:45

Welcome

14:20
Part 1: The normal cervix and the colposcopy examination
Chair: A. Singer (UK)

Colposcopy is the visual examination of the epithelial cervix using either uni or binocular vision. Specific abnormalities associated with both squamous and glandular precancer can be identified especially after the application of a 5% acetic acid solution. After this application the abnormalities become visible as a result to changes in the epithelium and blood vessels in the stroma. These changes occur within an area of the cervix called the transformation zone, an area bounded by the junction of vaginal epithelium and the glandular epithelium arising from the endocervix (canal). Within this area a change occurs in which and glandular epithelium changes to squamous by a process of transformation, called metaplasia. The upper border of this metaplastic change is called the new squamo columnar junction. The inability to see this junction means that abnormality may exist higher up in the endo cervix.

A sample of any abnormality within the transformation zone can be taken by a simple punch biopsy. Abnormality extending into the endocervix above the new squama columnar junction will need a limited surgical excision of the endocervix.

Colposcopy is an essential part of the diagnosis and treatment of cervical precancer. It is indicated in the presence of abnormal cytology or in the finding of a positive HPV report and also when there are clinical symptoms and signs of the early invasive cancer.

• Discussion

14:45
Part 2: Update of pathology and cytology for colposcopists
Chair: C. Bergeron (France)

As molecular evidence increased and was carefully correlated with epidemiologic studies, it is now clear that CIN 1 (e.g. mild dysplasia, usually with koilocytes) represents the histologic correlate for productive HPV infection, while CIN2 (at least for some) but definitely CIN3/CIS are identified as a morphologic indication of HPV oncogeneinduced cell transformation. This understanding leads to the return of a binary risk-based managerial approach to cervical pathology: CIN1 lesions are considered low-grade squamous intraepithelial lesions (LSIL) and managed with observation, whereas CIN2/CIN3/CIS lesions are lumped together as high-grade squamous intraepithelial lesions (HSIL) and warranted resection.

This two-tiered risk schema informed the Bethesda Classification System for Cervical Cytology, first introduced in 1988 and refined 3 times, most recently in 2014. In 2012, the Lower Anogenital Squamous Terminology (LAST) project further advocated for the use of LSIL/HSIL terminology not only in the uterine cervix, but also elsewhere in the male and female genital tracts, as did the 4th edition of the World Health Organization’s text on gynaecologic neoplasia. Thus today, we have a unified, biologically based terminology for both cytology and histology that extends to the whole spectrum of cervical neoplasia and helps to guide management.

• Discussion
**Part 3: Colposcopy of the “abnormal” cervix**

Chair: A. Singer (UK)

The epithelium containing squamous precancer within the transformation zone has certain characteristics. These reside within the epithelium or in the presence of blood vessels penetrating the epithelium and existing in the underlying stroma. The epithelium when painted with a solution of 5% acetic acid takes on a white appearance due to the obstruction of reflected light from the underlying stroma due to the cellularity of the epithelium. This epithelium is now called aceto-white epithelium and has all degrees of whiteness from a partially translucent appearance to one with extreme white denseness. The blood vessels can appear as red spots on the white epithelial background and this change is called punctuation. Likewise a mosaic appearance in the epithelium is also associated with abnormality and is called mosaic change. Both changes are as a result of increasing epithelial vascularity. An extreme form of this vascularity is called atypical vessel formation where the previous regularity in the blood vessels (punctuation and mosaic) now becomes extreme in structure and adopts a marked irregularity, usually is indicative of possibly early invasive cancer (microinvasion).

- Discussion

**Part 4: The accuracy of colposcopy: how can we make it better?**

Chair: C. Redman (UK)

A fundamental role of activity in women with abnormal screening results is to make an accurate assessment of the cervix. A number of studies, both cross-sectional and prospective, indicate that whilst colposcopic performance compares favourably with other diagnostic tests, it lacks sensitivity and specificity. It is evident that that a number of factors have to be considered: the number of biopsies taken, the prevalence of high grade disease in group being studied and the quality of training. These aspects are reviewed and strategies to improve performance are discussed.

- Discussion

**Part 5: The value of biomarkers in colposcopy practice**

Chair: C. Bergeron (France)

p16 immunohistochemistry is the most widely enlisted biomarker in the uterine cervix and in the HPV-related neoplasia in general. Biologically high grade lesions, e.g. true precancers are virtually always p16 positive. The LAST recommendations therefore advocate for p16 application in all cases of suspected CIN2 as a way of minimizing CIN2 cases as well as cases with a differential diagnosis of CIN3 vs. benign (atrophy, squamous metaplasia, etc.). Although the diagnostic value of p16 immunohistochemistry in the uterine cervix is well-established in these scenarios, p16 falters when it comes to prognostication and is not considered a reliable prognostic marker in LSIL histological cases.

Using a combination of antibodies to detect p16 and the cell cycle marker Ki67 identifies HPV-transformed cervical cells. The clinical performance of this approach has been evaluated in the triage of ASC-US and LSIL cytology results and more recently in HPV-primary screening. Cytology informed of HPV positivity is more expected to perform better than predicted by trials and could possibly allow longer intervals before retesting HPV-positive women with normal cytology. Alternative triage strategies like combining genotyping (16/18 only vs extended genotyping) with cytology, p16/Ki67 dual stain ICC or methylation analyses are all under active evaluation for optimization of the balance between immediate referral vs deferred assessment of HPV positive women. Sensitive than blind cytology. Screening programs with informed cytology triage are expected to perform better than predicted by trials and could possibly allow longer intervals before retesting HPV-positive women with normal cytology. Alternative triage strategies like combining genotyping (16/18 only vs extended genotyping) with cytology, p16/Ki67 dual stain ICC or methylation analyses are all under active evaluation for optimization of the balance between immediate referral vs deferred assessment of HPV positive women.

- Discussion