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EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

MEETING REPORT

Epidemic intelligence in the EU
Stockholm, 18 – 19 January 2006

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Meeting Report | Stockholm, 18 – 19 January 2006

Epidemic intelligence in the EU

TABLE OF CONTENTS

Introduction 2

Objectives of the consultation 2

Objective 1: To agree on the role of EI in Europe 2

Objective 2: To review the terminology and methods framework for epidemic intelligence. 3

Objective 3: To define the added value of ECDC in supporting MS 3

Process 4

Conclusions 5

Objective 1 5

Objective 2 6

Objective 3 6

Next steps 6

Annex 1: Participant list 7

Annex 2: Programme of the consultation 9

Annex 3: Questionnaire to heads of communicable disease surveillance and response on epidemic intelligence activities 10

Annex 4: Survey regarding epidemic intelligence activities – methods and results 13

Methods 13

Results 13

Standard Operating Procedures (SOP) 13

Sources of information 13

Units – Operators for EI 14

Coordination 14

Output 14

ECDC Role - Communication 14

ECDC Role - Tools, Guidance 14

References 14

Annex 5: Survey regarding epidemic intelligence activities – focal points for epidemic intelligence in MS + EFTA 15

INTRODUCTION

Epidemic intelligence can be defined as all the activities related to early identification of potential health threats, their verification, assessment and investigation in order to recommend public health measures to control them.

Epidemic intelligence has gained increasing attention in recent years because of emerging threats such as SARS or the importance of rapidly detecting first clusters of human-to-human transmission of a new influenza virus with pandemic potential. The revised international health regulations (IHR 2005), once adopted, will also have an impact on epidemic intelligence activities because they require countries to strengthen and maintain capacity to detect, assess, notify and report events that may constitute a public health emergency of international concern.

Disease surveillance systems are providing information on potential threats by identifying abnormal events in the temporal distribution of known disease indicators routinely collected (number of cases, rates), including changing laboratory characteristics. New approaches have been developed to enhance the capacity of surveillance systems in detecting 'previously unknown' threats, such as monitoring of syndromes (syndromic surveillance), death rates, utilization of health services (e.g. emergency room admissions, drug prescriptions), behaviours, and exposure to risks related to the environment, food or animals.

More recently, surveillance institutions are actively searching for information pertaining to health threats using Internet scanning tools, distribution lists or networks that complement the early warning function of routine surveillance systems. Primary information can be reported by individuals, the media or information scanning tools (e.g. GPhin, MedISys), and may be further processed and summarized by specific distribution lists or networks (e.g. Promed, WHO outbreak verification list). While these approaches have proved successful in complementing surveillance systems for the detection of emerging threats at international level, few countries have developed standard operating procedures and integrated these processes into their early warning activities.

Chief medical officers and heads of communicable disease surveillance and response from the European Union Member States and EFTA states, experts from the European Commission, WHO EURO and headquarters, and representatives from other international organizations met at the invitation of the European Centre for Disease Prevention and Control (ECDC) in Stockholm to discuss future developments of epidemic intelligence in Europe.

OBJECTIVES OF THE CONSULTATION

Objective 1: To agree on the role of EI in Europe

Despite improved hygiene and more advanced health care systems, emerging diseases and health threats from accidental or deliberate release of pathogens pose a larger risk today

than ever before in human history. Reasons include globalization with substantially increased travel and trade activities but shorter travel times, loss of common knowledge on how to deal with large communicable disease outbreaks, and limited capacity in many countries to control emerging diseases early because of economic or political instability. Given these issues, there is a need to review the role of EI in providing information through early warning and response systems and informal channels outside of such systems. Only rapidly available EI information will allow identifying and assessing emerging threats to human health from communicable diseases in an efficient and timely manner.

Expected output: Statement about the role of EI in Europe, in collaboration between MS, ECDC and other partners.

Objective 2: To review the terminology and methods framework for epidemic intelligence

MS have acquired a long-standing experience on EI, in terms of organisational models, sources of information used and verification mechanisms. The revised International Health Regulations (IHR), once adopted, will require MS to follow regulations of preparedness and response to events that may constitute a public health emergency of international concern, including strengthening and maintaining capacity to detect, assess, notify and report events. Currently, structures and level of integration and standardization of EI may vary across MS. Some MS may have a public health alert unit, while others may collect information through different surveillance systems. MS may have EI officers at the peripheral (regional, district) level, or may have media officers that systematically screen media sources. EI activities may be based on standard operating procedures, or being conducted on an ad-hoc basis. MS may prioritize international rather than domestic EI activities. Information may be collected passively, reacting to events brought to their knowledge, while other MS may have developed an active approach, searching for information pertaining to potential alerts. Given these issues, there may be a need to agree on a common terminology (Figure 1) and a set of epidemic intelligence components and processes that could be used by MS to conduct an assessment of their EI activities.

Expected output: Agreement on a common terminology and a set of epidemic intelligence components and processes that could be used by MS to conduct an assessment of their EI activities.

Objective 3: To define the added value of ECDC in supporting MS

The founding regulation of the European Centre for Disease Prevention and Control (ECDC) specifies the mandate of ECDC regarding risk identification and risk assessment. The Centre's tasks under this regulation include identifying and assessing emerging threats to human health from communicable diseases, and establishing, in cooperation with the MS, procedures for systematically searching for, collecting, collating and analysing information and data with a view to the identification of emerging health threats which may have mental as well as physical health consequences and which could affect the Community.

In order to fulfil the mandate, ECDC has started to monitor potential public health threats from a European perspective, under the principle of subsidiarity. ECDC has developed a threat tracking tool to facilitate the capture, verification and assessment of public health events of relevance. The main output of the tool is a weekly bulletin, for distribution internally and to the European Commission. The distribution of the bulletin will be extended to MS after discussion with the EWRS MS representatives. Procedures for communication on public health threats with the European Commission have been defined, including a weekly teleconference with the health threat unit of the European Commission to review current threats and jointly prepare the EI weekly bulletin for the Commissioner. Another EI source is the journal Eurosurveillance Weekly. ECDC is now part of the editorial board and will produce the journal from Stockholm by 2007. Eurosurveillance Weekly includes an e-alert section used by Member State epidemiologists to disseminate rapid information about on-going threats that require wide dissemination of information to public health officers in the MS.

While ECDC has a mandate to further develop EI at European level, it remains the prerogative of MS. The added value of ECDC may include facilitating exchange of information among MS and support assessments and standardization of EI systems in MS. ECDC's activities in filtering, processing and summarizing information from international sources may also allow MS to reduce their activities in this area and focus on regional threats, or on countries with whom they have heavy travel and trade relations.

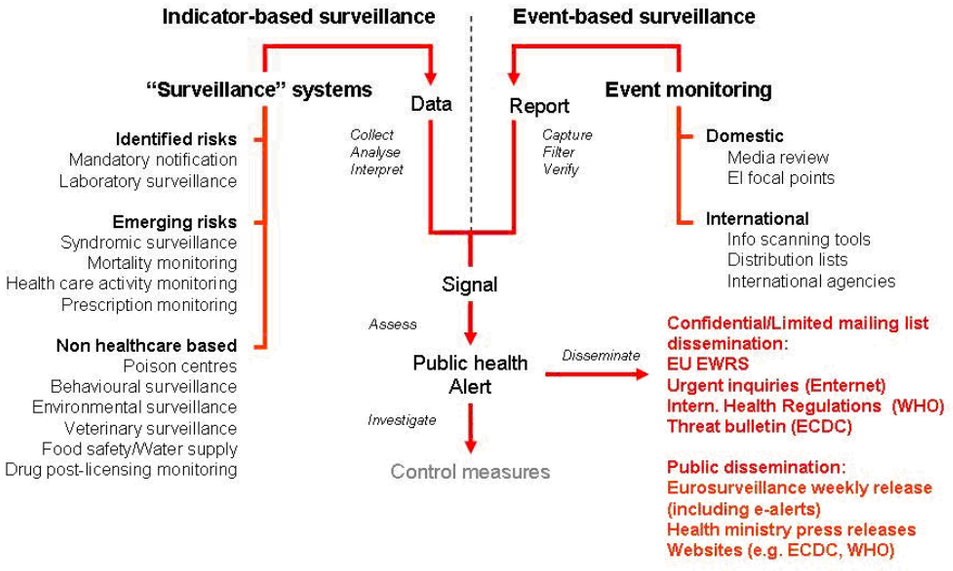
Expected output: a) List of tools and outputs to be produced by ECDC for MS, b) set of communication procedures between MS and ECDC and among MS.

PROCESS

Fifty-four chief medical officers and heads of communicable disease surveillance and response or their representatives participated in the consultation (see Annex 1: participant list).

Denis Coulombier (ECDC) gave an overview of epidemic intelligence history and recent developments, and introduced a methods framework suggested by ECDC that was later modified following the discussions in the meeting session 4 (Figure 1).

Figure 1: Framework for epidemic intelligence



During sessions 2 and 3, international information scanning tools, threat distribution lists and networks, and selected countries (Poland, France, UK) presented their epidemic intelligence activities. These sessions helped define the role of epidemic intelligence in Europe (meeting objective 1).

The consultation ended with a feedback discussion and final conclusions (see next section). Questionnaire and results of a MS and EFTA country survey about epidemic intelligence activities and ECDC's role are presented in Annexes 3–5. The questionnaires had been distributed before the consultation.

CONCLUSIONS

Objective 1

- The participants recognized the importance of event-based surveillance, which has in the past proven effective in detecting SARS and other emerging health threats, and the need to encourage epidemic intelligence in their countries;
- The IHR can be used as a leverage for advocacy and improvement of epidemic intelligence activities and early warning systems;
- Strengthening human and communication networks will help to build a culture of timely reporting of potential health threats.

Objective 2

- The framework (Figure 1) is a simplified draft model of epidemic intelligence that is useful to separate evolving methods to identify previously unknown health threats from more traditional routine surveillance systems, and to refer to for the general terms used in the epidemic intelligence process. All components of the framework, including the designated surveillance networks, are important contributors to the epidemic intelligence process;
- Sensitivities have to be addressed with regard to a potential negative understanding of the terms 'epidemic intelligence' and 'reporting culture'. The term epidemic intelligence is currently not used in some of the countries present at the meeting, and may cause confusion when translated into other languages. However, participants also suggested keeping the term unless a useful alternative is found.

Objective 3

- Countries should strengthen their own epidemic intelligence activities. ECDC is prepared to assist by providing a weekly communicable disease threat bulletin. Guidelines for epidemic intelligence should be developed together with the Member States;
- ECDC is collaborating closely with WHO EURO on epidemic intelligence, in particular regarding the integration of the revised IHR requirements into the alert notification process;
- ECDC will propose specific technical objectives for follow-up meetings annually or bi-annually.

NEXT STEPS

- A first follow-up meeting was conducted by ECDC on March 16, 2006 with a small group of experts to review ECDC's threat tracking tool and procedures. Specific objectives were to decide on criteria for the different decision-making steps, review information entered into the database for documentation, verification, investigation, and reporting, discuss the use of the tool, and give recommendations for reporting and audiences;
- As part of the collaboration with WHO, ECDC will help reviewing the event management system that WHO is implementing worldwide;
- ECDC will draft a guideline for epidemic intelligence in Europe in 2006 and share the draft with the MS;
- ECDC will host the next meeting in November 2006;
- A weekly communicable disease threat bulletin with restricted access has been recently posted on the ECDC website.

ANNEX 1: PARTICIPANT LIST

Name	Country	Affiliation
Aavitsland Preben	Norway	Directorate of Health and Social Affairs, Oslo
Alessandro Annunziato	Italy	Joint Research Centre, Ispra
Avdicova Maria	Slovakia	
Bakasenas Vytautas	Italy	
Bohumir Kriz	Czech Republic	CEM-NIPH, Prague
Boubaker Karim	Switzerland	
Brewer Timothy	Canada	Promed-mail
Briem Haraldum	Iceland	
Chaieb Amina	WHO	
Ciotti Massimo	EC	DG-SANCO, Luxembourg
Coulon Sylvie	EC	RASFF, Luxembourg
D'ancona Fortunato	Italy	
Desenclos Jean Claude	France	Institut de Veille Sanitaire, Saint Maurice
Fisher Ian	United Kingdom	Health Protection Agency Centre for Infections, London
Freitas Graça	Portugal	Directorate General of Health, Lisbon
Groeve De Tom	EC	
Halldorsson Matthias	Iceland	Directorate of Health, Reykjavik
Hardiman Max	WHO	WHO, Geneva
Hau, Patrick	Luxemburg	
Inicki Michal	Poland	National Institute of Hygiene, Warsaw
Joseph Carol	United Kingdom	Health Protection Agency Centre for Infections, London
Marija Seljak	Slovenia	
Kutsar Kuulo	Estonia	
Linde Annika	Sweden	Swedish Institute for Infectious Diseases, Stockholm
Maes Sophie	Belgium	Scientific Institute of Public Health, Brussels
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Mawudeku Abla	Canada	GPHIN, Health Canada, Ottawa
Mazick Anne	Denmark	National Board of Health, Copenhagen
Miklosi Mario	Slovakia	
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Smate Inga	Latvia	State Agency "Public Health Agency", Riga
Smith Else	Denmark	National Board of Health, Copenhagen
Sodano Luisa	Italy	Istituto Superiore di Sanità, Rome
Spala Georgia	Greece	Centre for Disease Prevention and Control, Athens
Starl Klaus	Germany	Robert Koch Institute, Berlin
Steenbergen van J.E	The Netherlands	RIVM, Bilthoven
Thinus Germain	EC	DG-SANCO, Luxembourg
Vasconcelos Paula	Portugal	Directorate General of Health, Lisbon
Zielinski Andrzej	Poland	National Institute of Hygiene, Warsaw
Ganter Bernardus	WHO	WHO EURO, Copenhagen
Anders Tegnell	Sweden	National Board of Health, Stockholm, Stockholm
Johan Carlson	Sweden	Swedish Institute for Infectious Diseases, Stockholm
Johan Struwe	Sweden	Swedish Institute for Infectious Diseases, Stockholm

ANNEX 2: PROGRAMME OF THE CONSULTATION

Day 1 – Wednesday, 18 January

12:00–13:00	Lunch
13:00–14:00	Registration
14:00–15:00	Opening (ECDC Director, Zsuzsanna Jakab; Head of Unit of Preparedness and Response, Denis Coulombier)
	Session 1: Presentation: Setting the stage: Epidemic intelligence - history, methods framework, recent developments (Denis Coulombier)
15:00–15:30	Coffee break
15:30–17:00	Session 2: Presentations chaired by Christophe Paquet GPHIN: The Public Health Agency of Canada's early warning system – Abla Mawudeku Promed: the programme for monitoring emerging diseases - Timothy Brewer Medisys: the European tool for epidemic intelligence - Germain Thinus WHO experience in epidemic intelligence: outbreak verification procedures - Amina Chaieb Detection of public health concerns of international concern: the new IHR paradigm - Max Hardiman
17:00–17:30	Discussion + Introduction of working groups, chaired by Denis Coulombier and Reinhard Kaiser
17:30	End of day 1
18:00	Dinner at the Royal Viking Hotel

Day 2 – Thursday, 19 January

09:00–10:30	Session 3: Presentations chaired by Bernardus Ganter Epidemic intelligence activities in various countries Poland – Andrzej Zielinski UK – Dilys Morgan France - Christophe Paquet
10:30–11:00	Coffee
11:00–12:30	Session 4 Working group: Terminology and methods framework for epidemic intelligence (3 groups)
12:30–13:30	Lunch
13:30–15:00	Session 5 Working group: Collaboration and communication between ECDC and member states and among member states (3 groups)
15:00–15:30	Coffee
15:30–16:30	Feedback discussion chaired by Denis Coulombier and Reinhard Kaiser
16:30–17:00	Final comments and closure by Denis Coulombier
17:00	End of meeting

ANNEX 3: QUESTIONNAIRE TO HEADS OF COMMUNICABLE DISEASE SURVEILLANCE AND RESPONSE ON EPIDEMIC INTELLIGENCE ACTIVITIES

Instructions for completion: This is a qualitative questionnaire that we ask you to kindly complete in preparation for our epidemic intelligence meeting on January 18/19, 2006, and return to ECDC (Reinhard.Kaiser@ecdc.eu.int). We understand epidemic intelligence activities mainly as the collection of qualitative information about unknown health threats. These activities complement traditional surveillance systems, but require different methods and approaches. Therefore, we will not focus in this questionnaire on routine surveillance systems.

In the respective 'Response' fields please describe how epidemic intelligence activities are conducted in your country; what the sources, units and programmes for epidemic intelligence are; how those components are integrated to coordinate steps from receiving the information to initiating outbreak responses and informing risk managers; and what the output of your activities is. The last questions address collaboration on epidemic intelligence between Member States and between ECDC and Member States. Please type your detailed answers on the computer directly into the fields and return the questionnaire by email by January 18, 2006.

Country: _____

Questionnaire completed by (if other than head of communicable disease surveillance and response)

Name: _____

Address: _____

_____

Phone: _____ Fax: _____

E-mail: _____

Contact person for epidemic intelligence activities with ECDC (if other than head of communicable disease surveillance and response)

Name: _____

Address: _____

Phone: _____ Fax: _____

E-mail: _____

Structure and procedures of epidemic intelligence activities in Member States

1) Activities based on standard operating procedures (SOP).
Questions: Are standard operating procedures used to verify information, assess signals, and investigate outbreaks?
Response:

2) Sources of epidemic intelligence.
Questions: What types of sources are you using? Media reports, news agencies, press reviews? Regional contact with regional units? International agencies, mailing lists, or web sites? Are the sources used domestic or international or both?
Response:

3) Units/operators conducting epidemic intelligence.
Questions: Are these disease specific groups or programmes? Are they focusing on international health or travel medicine? Do you have a special 'alert unit'? Do you have media officers as part of epidemic intelligence activities? Please list all units/bodies that are involved in collection, processing and reporting of information, and their location (e.g. Ministry of Health, Public Health Institute, general emergency preparedness).
Response:

4) Coordination.
Questions: Is there a transversal linkage and coordination between different units/bodies? Is there a link to outbreak investigation capacity? Please provide a coordination/information flow-chart of the system, if available.
Response:

5) Output.
Questions: Are any alerts, other rapid messages or a weekly bulletin issued? If yes, please list the types of alerts/summaries. Which unit/body is issuing them? How are the alerts/summaries circulated? Who are the recipients? *Please note: 'bulletin' is not a weekly surveillance bulletin here, but a specific health threats bulletin.*
Response:

Future collaboration on epidemic intelligence between Member States and between ECDC and Member States

6) Communication procedures.
Questions: Which communication procedures would you like to see established between Member States and between ECDC and Member States? These may include an informal communication mechanism, regular telephone conferences organized by ECDC, provision of a weekly bulletin by ECDC that allows reducing part of epidemic intelligence activities in the Member States.
Response:

7) Tools/Guidance by ECDC.
Questions: Which tools, guidance or other outputs on epidemic intelligence would you like to be provided by ECDC? For example, these may include guidelines for epidemic intelligence models that countries can use to assess their system.
Response:

ANNEX 4: SURVEY REGARDING EPIDEMIC INTELLIGENCE ACTIVITIES – METHODS AND RESULTS

In preparation for a consultation meeting, ECDC sent a questionnaire (Annex 3) to the countries to collect information on epidemic intelligence activities and the role of ECDC in supporting those activities.

Methods

A semi-structured questionnaire was distributed to the heads of communicable disease surveillance and response regarding epidemic intelligence activities in the MS and EFTA countries. Recipients were asked to self-report about standard operating procedures, sources, units and operators, coordination, and output of their activities. The questionnaire also asked about ECDC's role on epidemic intelligence communication, tools, and guidance.

Results

The following countries responded (n=23):

Austria	Lithuania
Belgium	Luxembourg
Czech Republic	Malta
Cyprus	Netherlands
Denmark	Norway
Estonia	Poland
Finland	Portugal
Germany	Spain
Iceland	Sweden
Ireland	Switzerland
Italy	UK
Latvia	

EI activities are conducted by the Ministry of Health in ten countries, the National Surveillance Institute or Institute for Public Health in 12 countries, and one country said that both institutions are responsible. Almost all countries are conducting EI regularly on a national and international level.

Standard Operating Procedures (SOP)

Fifteen countries responded that they have SOPs for EI, six said they did not, and two said to some degree. However, responses indicated that some of the SOPs mentioned were for indicator-based (surveillance) activities rather than event-based activities (1), or were legal documents or regulations for early warning activities.

Sources of information

The following sources were given for national EI activities: specific early warning systems, routine surveillance systems including laboratory reporting, ambulance activity monitoring,

emergency room monitoring, mortality monitoring, medical and non-medical services, network of state and local public health offices, informal networking, national call centres, media reviews, and web sites. A variety of information scanning tools, threat distribution lists and networks are used for international EI activities. Some countries mentioned only one or two international sources, such as Promed-mail or the European Commission's Medical Information System, MedISys, and indicated that only limited personnel are available for these tasks.

Units – Operators for EI

Among the 23 countries, only three stated that they have a special alert unit. Five countries said that response capacity was available through a national crisis or emergency centre. In most countries, various departments or units within the responsible institution conduct EI activities.

Coordination

Coordination varies between strong transversal linkage with daily or weekly early warning meetings or weekly teleconferences, and no coordination at all or identified needs for improvement. Eleven countries mentioned links with outbreak investigation capacity.

Output

Eleven countries said that they do not have a bulletin for EI reporting. Six countries stated that they report early warning information as part of the weekly surveillance bulletin. Two countries circulate minutes of a weekly early warning meeting, and one country distributes a monthly early warning summary. The majority of countries issue messages via telephone, fax, email, SMS or a web site as needed.

ECDC Role – Communication

A weekly ECDC early warning bulletin was the communication tool that most countries would find helpful (n=12). Four countries mentioned ECDC's role in a revision of the Early Warning and Response System. Six countries would like ECDC to develop an informal communication system, such as secure website for reading and posting updates. Other suggestions included regular teleconferences, meetings, an ECDC-moderated e-mail list, web-based short reports, and notifications in Eurosurveillance. Some countries were concerned about an overload of their capacities and suggested integrating ECDC activities within existing and established systems.

ECDC Role – Tools, Guidance

Among the 23 countries, fourteen said that ECDC should develop EI guidelines. Three countries would find EI training helpful. Other suggestions included advice about the usefulness of EI tools and syndromic surveillance, software for countries similar to ECDC's threat tracking tool, EI research, and outbreak detection algorithms for surveillance data.

References

1. Kaiser R, Coulombier D, Baldari M, Morgan D, Paquet C. What is epidemic intelligence, and how is it being improved in Europe? Eurosurveillance 2006;11(1):02-02, at http://www.eurosurveillance.org/ew/2006/060202.asp

ANNEX 5: SURVEY REGARDING EPIDEMIC INTELLIGENCE ACTIVITIES – FOCAL POINTS FOR EPIDEMIC INTELLIGENCE IN MS + EFTA

Country	Name	Affiliation
Austria	Reinhild Strauss	Generaldirektion Öffentliche Gesundheit BM für Gesundheit und Frauen, Vienna
Belgium	Sophie Quoilin Sophie Maes Carl Suetens	Scientific Institute of Public Health, Brussels
Czech Republic	Bohumir Kriz	CEM-NIPH, Prague
Cyprus	Chrystalla Hadjianastassiou	Department of Medical and Public Health Services
Denmark	Dr Jens Kristian Götrik Kåre Møbak	National Board of Health, Copenhagen Statens Serum Institut, Copenhagen
Estonia	Irina Dontsenko	
Finland	Kimmo Leppo Petri Ruutu	Ministry of Social Affairs and Health Health Department, Helsinki Department of Infectious Disease Epidemiology, National Public Health Institute, Helsinki
Germany	Gérard Krause	Department of Infectious Disease Epidemiology, Robert Koch Institute, Berlin
Iceland	Sigurdur Gudmundsson	Directorate of Health, Reykjavik
Ireland	Darina O'Flanagan	HPSC, Dublin
Italy	Stefania Salmaso	Istituto Superiore di Sanità, Rome
Latvia	Olita Kravcenko	State Agency "Public Health Agency", Riga
Lithuania	Vytautas Bakasenas	
Luxembourg	P.Huberty-Krau	
Malta	Dr Malcolm Micallef	Department of Public Health, Valletta
Netherlands	Jim van Steenbergen	RIVM, Bilthoven
Norway	Björn-Inge Larsen Preben Aavitsland	Directorate of Health and Social Affairs, Oslo
Poland	Dr Andrzej Trybusz Andrzej Zielinski	 Department of Epidemiology National Institute of Hygiene, Warsaw
Portugal	Maria da Graça Freitas	Directorate General of Health, Lisbon
Spain	Odorina Tello Fernando	Centro Nacional de Epidemiología

	Simón	Instituto de Salud Carlos III, Madrid
Sweden	Anders Tegnell	Communicable Disease Prevention and Control, SoS, National Board of Health and Welfare Stockholm Sweden
	Annika Linde (1) Johan Struwe	Dept of Epidemiology, Centre for Microbiological Preparedness, Swedish Institute for Infectious Diseases, Stockholm
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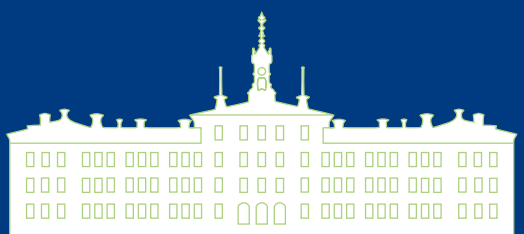

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