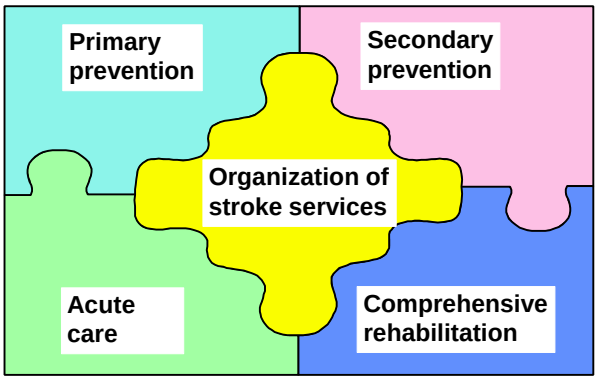
World Health Organization
Council
Regional Office for Europe

European Stroke

Pan European Consensus Meeting on Stroke Management

Helsingborg, Sweden

8 - 10 November 1995



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Report on

Pan European Consensus Meeting On Stroke Management

Helsingborg, Sweden

8 - 10 November 1995

Arranged by

WHO Regional Office for Europe
and
The European Stroke Council

in collaboration with

European Federation of Neurological Societies
International Stroke Society
World Confederation for Physical Therapy
World Federation of Occupational Therapists

EUR/HFA Target 9

TARGET 9
REDUCING CARDIOVASCULAR DISEASE

By the year 2000, mortality from diseases of the circulatory system should be reduced, in the case of people under 65 years by at least 15%, and there should be progress in improving the quality of life of all people suffering from cardiovascular disease.

ABSTRACT

Stroke is a leading cause of death and disability in Europe. Standards of care vary widely. It has been shown that improving the organisation of care for people with stroke significantly improves outcome.

In order to improve stroke management in Europe, a consensus meeting took place in Helsingborg, Sweden. The meeting was arranged by the WHO Regional Office for Europe and the European Stroke Council in collaboration with the European Federation of Neurological Societies, International Stroke Society, World Confederation of Physical Therapy-Europe and the World Federation of Occupational Therapists.

The participants defined the most cost-effective strategies available for stroke care, rehabilitation and secondary prevention and discussed partnership. The meeting adopted the Helsingborg Declaration on Stroke Management in Europe. Principles were formulated for interventions and the organization of stroke care services. Quality of care indicators and targets on stroke management were agreed upon. Research areas were identified.

KEY WORDS

Stroke management
Stroke rehabilitation
Acute stroke care
Stroke

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FOREWORD

Stroke is one of the leading causes of death in Europe. It leads to high levels of permanent disability and absorbs a considerable proportion of health care budgets. As the populations in Europe age, the number of individuals afflicted by stroke and the burden of the disease on society will increase.

To reduce the burden of stroke on the individual, the family and society, presents a significant challenge to the health care system and the scientific community. Although primary prevention is crucial and will remain the cornerstone of efforts to reduce the burden of disability due to stroke, there is compelling evidence that improved, systematic, stroke management including rehabilitation can also reduce mortality and morbidity.

SCOPE AND PURPOSE

A consensus meeting arranged by the WHO Regional Office for Europe and the European Stroke Council, in collaboration with the European Federation of Neurological Societies, the International Stroke Society, the World Confederation of Physical Therapy-Europe and the World Federation of Occupational Therapists, took place between 8 and 10 November 1995 in Helsingborg, Sweden. Representatives of Government Health Departments of the Member States of the WHO European Region, scientists, health decision makers, interdisciplinary stroke management experts, stroke patients and their organizations examined the latest evidence-based knowledge in the management of stroke and agreed upon a plan of action to implement this knowledge to enhance the quality of care for people with stroke.

Five main aspects of stroke management were covered:

- management of acute stroke;
- rehabilitation;
- secondary prevention;
- evaluation of stroke outcomes and quality assessment;
- organisation of stroke services.

Method of work

At the opening ceremony addresses were given by:

Dr M. Danzon, Director, Health Promotion and Disease Prevention on behalf of Dr J.E Asvall, Director, WHO Regional Office for Europe;
Mr L. Rekke, Undersecretary of State, Ministry of Health and Social Affairs of Sweden;
Mr B. Holgersson, President of the Swedish Federation of County Councils and the Malmöhus County Council;
Ms I. Anderson Sjöstedt, Chairwoman of the Helsingborg City Council;
Professor K. Asplund, Chairman, European Stroke Council.

For each of the five main aspects of stroke management, the state-of-the-art was presented in an introductory lecture, followed by a plenary discussion with invited discussants, providing the

opportunity for all participants to interact. An outline of the consensus statement was presented. A poster session was arranged.

All participants were assigned to working groups where proposals were discussed in detail. After reports from the working groups, a consensus panel was convened to work on the final consensus document. The consensus panel included representatives from all parties involved in stroke management, including patients' organizations (see Annex). Their conclusions and suggested plan of action were presented, discussed and agreed during the final plenary session. At the final plenary session, the participants adopted the Helsingborg Declaration on Stroke Management in Europe, a broad statement of the overall aims and goals of stroke management to be achieved by the year 2005.

This report presents the Helsingborg Declaration, the Consensus Statement on Stroke Mangement and the suggested plan of action to implement the Helsingborg Declaration.

THE HELSINGBORG DECLARATION ON STROKE MANAGEMENT IN EUROPE

Essential Principles for Good Practice

1. The interests and needs of patients with stroke and their families should remain the principal concern of all professionals. Support by self-help groups and voluntary patients' associations should be encouraged.

2. Progress in acute stroke management will only be achieved if stroke is considered a medical emergency.

3. Stroke patients should receive immediate evaluation at hospital.

4. All current and future pharmacotherapy and surgical treatment in patients with stroke should be based on scientific evidence. Other treatments should be evaluated scientifically. Treatments of unproved value should not be used routinely in patients with stroke.

5. Management of all aspects of disability should be planned in close collaboration with patients and their families and be sensitive to their needs.

6. Collaboration in stroke research, including prevention, acute management, nursing care and rehabilitation, and education should be promoted at local, national and international levels taking into account the needs and contributions of all professional groups and patient associations.

Targets for the Year 2005

1. All Member States should have established a system of organised management of acute stroke in order to reduce the proportion of patients dying within the first month to below 20%.

2. In patients surviving the acute phase, the incidence of recurrent fatal and non fatal stroke during the first two years should be reduced to below 20%. Death due to vascular disease should be below 40%.

3. More than 70% of surviving patients should be independent in their daily activities three months after onset of stroke.

4. All patients should have access to appropriate secondary prevention measures.

5. All patients after acute stroke should have easy access to early specialised assessment and treatment from stroke units if available and continuing as long as benefit to the patient and family exists or is likely.

6. Rehabilitation services should be provided by an interdisciplinary team which is trained in stroke management.

7. All Member States should establish quality assessment for evaluating stroke management.

CONSENSUS STATEMENT ON STROKE MANAGEMENT

Introduction

Stroke is one of the leading causes of death in the European Region of WHO. It leads to high levels of permanent disability and absorbs a considerable proportion of health care budgets. Stroke is moreover a significant component of the east-west mortality gap.

Although primary prevention is crucial and will remain the cornerstone of efforts to reduce the burden of disability due to stroke, there is compelling evidence that improved, systematic, stroke management including rehabilitation can also reduce mortality and morbidity. This document presents guidelines on improved stroke management including acute care, secondary prevention, rehabilitation, and on a more systematic organization and evaluation of stroke services in order to enhance the quality of care for people with stroke.

Practice in the provision of health care, including community-based support for people with stroke, varies widely across Europe. Therefore, the goals set and recommendations made in this document, which concerns the management of stroke in all of WHO's European Member States, are, by necessity, broad and general.

Exclusions

This document is not concerned with aspects of the primary prevention of stroke, with the management of patients with subarachnoid haemorrhage or with uncommon causes of stroke. The specific management of patients with transient ischaemic attacks is considered only within the context of stroke as a whole.

Methods

The document is divided into five sections representing the five main components of stroke care, each containing component-specific guidelines:

- organization of services;
- evaluation of stroke outcomes and quality assessment;
- management of acute stroke;
- rehabilitation after stroke;
- secondary prevention.

Statements and recommendations are based, wherever possible, on evidence from large randomized trials and systematic reviews. It is recognised that some Member States will be ahead of others in their approach to stroke and Member States may wish to set extended goals.

Organization of stroke services

Goal for 2005	• In Europe all patients with acute stroke should have access to care in specialized stroke units or from stroke teams.
Basic requirements	• Organized services providing care for patients with stroke should exist both in the community and in hospitals. • The precise structure of the services should be adapted to meet local requirements. • An individual responsible for the coordination of stroke services should be identified for each geographical area or population served. • Within each hospital one single department should be responsible for managing stroke services**.**
Acute care	• Stroke is a medical emergency and all patients should be evaluated in hospital, preferably within 6 hours. • Patients with persisting impairments should receive a diagnosis, acute management including nursing care, and have their rehabilitation needs assessed and treated. • Home care should be used only in settings where it has been shown to provide the same quality of care as a hospital, or when hospital resources are inappropriate or inadequate.
Stroke units	• The outcome for patients managed in a dedicated, non-intensive, stroke unit or by a specialised stroke team has been shown to be superior compared to that of patients managed in general medical wards. • It is recommended that the care of patients with stroke should be undertaken in dedicated stroke units by trained teams of professionals. • Systematic care plans and performance indicators should be used in these units. • Until the benefits of intensive care stroke units have been evaluated their use cannot be recommended, though certain patients may benefit from the high level of expertise offered by this type of facility**.**

Rehabilitation in the first six months	• Rehabilitation is most effective when it is initiated very early after stroke. • All patients with stroke should have their rehabilitation needs assessed by an interdisciplinary team with medical, nursing, physiotherapy and occupational therapy skills. • When appropriate, patients should have access to communication therapists and to social and psychological interventions.
Rehabilitation after six months	• There is little evidence that rehabilitation beyond 6 months after stroke can improve speech impairments or motor or perceptual deficits. • To achieve optimal adaptation, patients with permanent impairments should receive medical and community support, as well as professional help, to adapt and cope with every day activities. • Patient care should be organized so that depression and any deterioration in ability to manage daily activities can be detected and treated, and appropriate measures taken to reduce the risk of stroke recurrence and other circulatory events.
Professional/client collaboration	• There is a need for broad-based professional and client (patient) collaboration locally and nationally to promote education in stroke for the general public, health care professionals and health policy makers. • Stroke units or teams should provide leadership in establishing self-help groups for patients and their families. • Continuity in rehabilitation and medical care after discharge from hospital is essential. Responsibility for this might rest either with the stroke unit or with the community health care services.
Research priorities	• Evaluation of benefits and costs of intensive care stroke units. • Evaluation of the effectiveness of hospital-based stroke units or teams as compared with community care.

Evaluation of stroke outcome and quality assessment

Goal for 2005	• All Member States should establish a system for routine collection of data needed to evaluate the quality of stroke management.
General principles	• For evaluation to be meaningful, both the process and the outcomes of stroke management need to be assessed. • Quality of care is concerned with efficacy, appropriateness, accessibility, effectiveness, acceptability and efficiency. • Variations in case-mix, (e.g. age, comorbidity) must be taken into account when comparisons are made over time or between services. • Not all domains can be assessed systematically.
Domains for evaluation[*] ***Diagnosis/assessment indicators***	• Proportion admitted to dedicated stroke service or assessed by stroke team. • Time to admission. • Proportion with access to an initial standardized interdisciplinary assessment. • Time to initial assessment. • Proportion undergoing brain imaging. • Time to brain imaging.
Acute care indicators	• Proportion in acute institutional care(*). • Case fatality at 1 month(*).
Complications' indicators	• Proportion with pressure sores, incontinence, frozen shoulder or pneumonia(*).
Late survival indicators	• Case fatality at 2 years(*).

[*] **Key indicators are marked with an asterisk.**

Rehabilitation indicators	• Proportion with access to interdisciplinary rehabilitation. • Time to start of active or passive rehabilitation. • Proportion in whom level of disability, goal setting, and regular reviews is recorded. • Personal and instrumental activities of daily living measured at 3 months(*). • Personal and instrumental activities of daily living measured at 12 months(*). • Place of residence at 3 and 12 months or number of days in post-acute institutional care(*).
Community indicators	• Proportion obtaining appropriate access to long-term care. • Proportion receiving appropriate secondary prevention measures. • Proportion obtaining appropriate access to aids/appliances. • Proportion obtaining appropriate access to home care support. • Proportion obtaining appropriate access to institutional care, if needed. • Subjective perception of quality of life**.**
Indicators of quality of care: patients	• Proportion of patients satisfied with care received(*). • Proportion of patients satisfied with information received. • Proportion of patients with whom goals are discussed. • Proportion of patients notes in which are recorded impairments, disabilities and handicaps. • Number and content of complaints received.
Indicators of quality o care: carers and family	• Proportion of carers or families satisfied with information given. • Adequacy of written information concerning patients roles and rights. • Proportion of carers or families satisfied with support received. • Proportion of carers or families satisfied with training received. • Proportion of carers or families receiving assessment of the emotional effects of caring.
Routine information at the macro-level	• Population-based monitoring of incidence, case fatality, mortality and disability (*).
Research priorities	• Development of overall index of outcome. • Development of appropriate instruments for measurement of indicators. • Definition of the content of minimum data set.

Management of acute stroke

Goals for 2005	• Fewer than 20% of patients with stroke should die within the first month after stroke. • More than 70% of surviving patients should be independent in their personal activities of daily living three months after the onset of stroke.
Awareness	• Stroke must be regarded and treated as a medical emergency. • Member States should ensure that both the general public and heath care professionals are made aware of the significance of symptoms of stroke to ensure early referral of patients.
Diagnosis	• Correct management requires accurate diagnosis. • Where resources are available, all patients who present with symptoms suggestive of stroke require early computerised tomography (CT) to distinguish between intracranial haemorrhage and cerebral ischaemia and to identify diagnoses other than stroke. If CT is unavailable, and only in the absence of contraindications, cerebrospinal fluid should be examined in patients in whom anticoagulant treatment is thought necessary, e.g. those with deep venous thrombosis (DVT) or pulmonary embolism. • Ultrasound or other non-invasive tests should be available for the diagnosis of carotid and vertebral artery stenosis and occlusion. • Angiography is indicated only when required in therapeutic decision making.
Basic care	• Skilled basic care should meet the needs of patients with stroke and reduce the risk of complications and second stroke. • Neurological impairments and consciousness should be monitored at regular intervals. • In the acute phase after stroke, blood pressure should be lowered only in special circumstances. • Rehabilitation should start as soon as the medical condition permits.

Drug treatment	• No specific drug treatments have been proven effective in acute stroke; however new therapies, such as thrombolysis and neuroprotective drugs, are under investigation and may prove to be of use. • Immediate anticoagulation with heparin is often used in patients with stroke of cardiac origin**,** repeated transient ischaemic attacks and progressing stroke. There is, however, no evidence from randomised controlled trials to support this practice. • Evidence would suggest that treatment with steroids, haemodilution, calcium antagonists, glycerol, theophylline and some other drugs, is of no proven benefit to patients with acute ischaemic stroke.
Surgical treatment	• Compressive infarction or haemorrhage of the cerebellum may require urgent surgical intervention. • There is a view that emergency surgical evacuation of supratentorial intracerebral haemorrhage should be undertaken on selected patients. This consensus statement expresses no opinion on this subject but notes that there is no evidence from randomised controlled trials to support this practice.
Systematic venous thromboembolism	• Immobile patients with stroke are at risk of DVT and pulmonary embolus. • To reduce this risk, in the absence of any contraindication, patients should be mobilised early and given anti-embolism stockings, and/or anticoagulants (low-dose heparin or low molecular weight heparin).
Confusion and depression	• Confusion may occur as a direct result of the stroke, or because of medical complications or prolonged immobilisation. • Health care professionals should be alert to this and offer early and appropriate treatment. • All patients suffering from depression after stroke should have access to specialised evaluation and appropriate treatment.
Evidence-based therapy	• No specific medical or surgical treatment has unequivocally been shown to be of benefit to patients with stroke. • The principles of evidence-based medicine should be applied to the treatment of acute stroke. • No medical or surgical intervention should be given routinely to patients with acute stroke unless its effectiveness has been demonstrated in randomised controlled trials.

Clinical trials	• Patients should, whenever possible, in addition to receiving basic medical and nursing care, be invited to participate in clinical trials. • Denying patients with stroke access to randomised controlled trials should be considered unethical.
Research priorities	• Scientific evaluation of the value of nursing and supportive care for patients with stroke. • Determination of the risks and benefits of early evacuation of supratentorial cerebral haematoma. • Placebo controlled trials of the risks and benefits of neuroprotective and other drug treatments in cerebral ischaemia and haemorrhage.

Rehabilitation after stroke

Goal for 2005	• More than 70% of the surviving patients should be independent in activities of daily living three months after the onset of stroke.
At the start of rehabilitation, every patient should:	• have access to rehabilitation services without prior selection. • have his/her disability needs assessed as soon as possible by a properly trained health professional. • when awake and medically stable, be assessed by at least two different professionals using a standard check-list to identify initial problems. • during the following week, take part in a goal planning meeting involving all rehabilitation professionals and family. • receive rehabilitation treatment according to his/her needs, be reassessed regularly and take part in goal planning meetings when needed.
The patient and family	• Rehabilitation should be centred on the patient's own goals. • Rehabilitation should be planned in close collaboration with the patient and family members who are recognised as important contributors to the rehabilitation process.
Interdisciplinary rehabilitation team	• To be most effective, rehabilitation requires the intervention of an interdisciplinary team consisting of, for example, a physician, a nurse knowledgeable in stroke rehabilitation, a physiotherapist, an occupational therapist, and a speech therapist. Some patients will also require the intervention of a social worker and a psychologist, both of whom are trained in stroke rehabilitation. • Limited resources and local conditions may require that the same person fulfil more than one of these roles.
Training the patient	• Formal training sessions with the interdisciplinary team should be supplemented by training by family members and volunteers as directed by health care professionals.
Rehabilitation treatments	• Any technique used in the management of disability should be specified, targeted, intensive and patient-centred. • No recommendation can be made on specific techniques which might be used.

Environment	• Most available information would suggest that a positive and stimulating environment, both physically and emotionally, is likely to enhance the effects of rehabilitation treatment. • The patients' environments should be as personalised and home-like as possible and should enable them to carry out all relevant tasks and functions at all times.
Unbroken chain of care	• The patient should be part of an unbroken chain of care from the moment the stroke occurs. • Successful rehabilitation requires close coordination between medical and community-based social services. • A community liaison team is recommended. • Long-term follow-up is the responsibility of local services and should ensure easy re-access to the rehabilitation service.
Patient organizations	• The formation of local associations of patients with stroke and their families should be encouraged because: • They provide support to patients and their relatives. • They contribute to the coordination of local, regional and national efforts to promote better rehabilitation and social support for people with stroke.
Research priorities	• Because few specific rehabilitation interventions have been evaluated in clinical trials, most guidelines are tentative and the effectiveness of rehabilitation techniques and strategies requires scientific evaluation. • Research methodology should be developed and resources made available for randomized trials of components of rehabilitation which can be easily isolated. • Outcome measures that focus on social role functioning, satisfaction with rehabilitation services and life satisfaction need to be improved. • The cost-effectiveness of the use of volunteers and families in rehabilitation after stroke should be evaluated.

Secondary prevention

Goals for 2005	• To put in place measures which, in patients surviving the acute phase, will reduce the death rate from recurrent vascular events, including myocardial infarction, to less than 40% in the first 2 years after stroke. • To identify patients at risk of second stroke and to reduce mortality and morbidity from second stroke to less than 20% during the first two years by specific interventions. • To ensure that secondary prevention measures are cost-effective.
Lifestyle interventions	• Risk factor modification has rarely been studied in patients with stroke and recommendations are based on experience from primary prevention studies and from other groups of patients with vascular disease. • Lifestyle changes which would be expected to reduce incidence of stroke are recommended. Such changes should include smoking cessation and moderation of alcohol intake, diet and physical activity.
Medical interventions	• Medical interventions should include the monitoring and control of blood pressure, blood lipids and diabetes.
Specific interventions: ***Antiplatelet treatment***	• To prevent recurrent stroke and other vascular events, patients should receive an antiplatelet drug. • Low dose aspirin is the drug of choice until other antiplatelet agents have been shown to be superior in direct, randomized comparative studies. • Patients intolerant of aspirin should receive alternative antiplatelet treatments.

Patients with atrial fibrillation	• Anticoagulants have been shown to reduce the risk of stroke in patients with non-valvular atrial fibrillation, though their role in other cardiac diseases is less well-established. • Patients with atrial fibrillation remain at risk of stroke and should use anticoagulants long term unless contraindications develop. • Educational programmes should be developed to increase the awareness of and confidence in the effectiveness of oral anticoagulants in patients with atrial fibrillation. • The use of anticoagulants requires rigorous quality assurance. The therapeutic range for the prothrombin time should be equivalent to a standard INR of 2.0 to 3.5. • Patients in whom anticoagulants are inappropriate should be given aspirin. • The balance of risk versus benefit in using anticoagulants immediately after stroke in patients with atrial fibrillation has not been established.
Patients with carotid stenosis	• Carotid endarterectomy is effective and recommended for patients with transient ischaemic attack (TIA) and ischaemic non disabling stroke in whom the diameter of the ipsilateral carotid artery is reduced by > 70% provided that: 1. surgery is undertaken early after the acute phase; 2. the combined death and stroke rate associated with angiography and surgery is no more than 5%; 3. in addition, all patients, receive best medical treatment, including antiplatelet drugs.
Research priorities	• The relationship between nutritional state and second vascular events. • The health gain associated with risk factor modification. • The effect of long-term lowering of blood pressure and lipids in patients with stroke. • The effectiveness of alternative antiplatelet agents in direct comparison with aspirin in patients with completed stroke. • The duration of treatment with anticoagulants in symptomatic patients with nonvalvular atrial fibrillation. • The optimal timing of carotid surgery after stroke.

PLAN OF ACTION

The following plan of action to implement and further develop the Helsingborg Declaration on Stroke Management in Europe was agreed.

- Dissemination of the consensus document.
- Further development and implementation of stroke management policy.
- Establishment of working groups to develop guidelines.
- Quality assessment and monitoring of goals.
- Networking.
- Making use of available knowledge about stroke through professionals, the public, and patients.

Dissemintion of the consensus document

The conclusions of this report will be published in the Journal of Internal Medicine and disseminated as a WHO report to Ministries of Health, and professional and lay organisations in all Member States of the WHO European Region. It is anticipated that the contents will be accepted and disseminated by the sponsoring organisations at their annual conferences, and that the conclusions will also be presented at major international and national stroke conferences. The use of the Internet and national journals will be considered.

Further development and implementation of stroke management policy

It was agreed that mechanisms should be established by WHO and the European Stroke Council to accelerate the implementation of the plan of action. To this end, a steering group will be established by the WHO Regional Office for Europe and the European Stroke Council in collaboration with the European Federation of Neurological Societies, the International Society of Internal Medicine, the International Stroke Council, the World Confederation of Physical Therapy - Europe, and the World Federation of Occupational Therapists, to stimulate, facilitate, and coordinate the implementation and further development of the Helsingborg Declaration. A process of developing and implementing national, regional and local policy programmes to improve stroke management will be initiated.

Establishment of working groups to develop guidelines

Working groups, which should include interdisciplinary stroke management specialists, and representatives of patients and carers, will be established to produce in-depth guidelines. The guidelines will be based on the Helsingborg Declaration and on national, regional and local guidelines which are already available in several countries. The guidelines will be elaborated in the following areas:

- acute medical and surgical management;
- secondary prevention;
- nursing in stroke care;
- guidelines on the organization of a stroke unit and a multidisciplinary stroke team;
- rehabilitation;
- evaluation of outcome and quality assessment;
- organization of stroke services in the community;
- family education and involvement;
- rights and role of patients.

These common guidelines should then be adapted to each country or region.

Quality assessment and monitoring of goals

Monitoring of key quality assessment indicators in European countries will be established. An attempt will be made to elaborate computer-compatible information systems. Comparative data will be produced regularly.

Networking

A network of national liaison people throughout the WHO European Region will be established as well as European networks (and bilateral collaboration) of stroke experts, multidisciplinary stroke teams and patient organizations. Professional education networks should be used to facilitate improvements in training at all levels for members of the stroke team.

Making use of available knowledge about stroke through professionals, the public and patients

Educational activities of professional and other organizations should be supported. Such programmes should be developed for the public, for patients (and their families) and for health care professionals. A reference network of high-quality stroke units and stroke teams ("centres of excellence") for study visits and consultations will be established and promoted. Epidemiological data on stroke registered in European countries should be compiled and disseminated to key health care decision-makers and to professional and layman organizations.

ACKNOWLEDGEMENTS

This meeting has received financial support and grants from:

The City of Helsingborg;

The Foundation of ISIM-90, Sweden;

The Journal of Internal Medicine Foundation;

Malmöhus County Council;

Malmöhus County Council, District of Helsingborg;

The Ministry of Health and Social Affairs of Sweden;

Boehringer Ingelheim International GmbH;

Bristol-Myers Squibb AB, Sweden;

Hässle Läkemedel AB;

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Ramlösa AB;

Sanofi Winthrop;

UCB S.A.;

Upjohn.

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Chief, Department Neurology, Faculty for Advancec Medical Training, Dnipropetrovsk Medical Academy, Kiev

Professor S. Vinnichuk
Ukrainian State Medical University, Kiev

United Kingdom

Dr M. Dennis
Neurosciences Trials Unit, Department of Clinical Neurosciences. Western General Hospital Edinburgh, United Kingdom

Ms P. Enderby
Speech Therapist, Speech and Language Therapy Research Unit, Frenchbay Hospital, Bristol, United Kingdom

WHO Temporary Advisers

Dr I. Aboderin
Bristol, United Kingdom

Dr P. Bath
Department of Health Care for Elderly People, Northern General Hospital, Sheffield, United Kingdom

Ms V. Gunnarsdottir
Copenhagen, Denmark

Professor C. Marincek
WHO Collaborating Centre for Rehabilitaiton, University Rehabilitation Institute, Ljubljana, Slovenia

Dr G. Venables
Neurology Department, Royal Hallamshire Hospital, Sheffield, United Kingdom

Representatives of collaborating organizations

European Federation of Neurological Societies

Professor M. Kaste
Department of Neurology, University of Helsinki, Helsinki, Finland

Professor J. Olesen
Department of Neurology, Glostrup Hospital, Copenhagen, Denmark

European Stroke Council

Professor K. Asplund
European Stroke council, Internist, Department of Medicine, University Hospital, Umeå, Sweden

International Stroke Society

Professor B. Johansson
Neurologiska Kliniken, Universitetssjukhuset, Lund, Sweden

World Confederation Of Physical Therapy - Europe

Ms J. Danziger
Ministry of Health, Tel-Aviv, Israel

World Federation Of Occupational Therapists

Dr A. Drummond
Occupational Therapist, Department of Health Care for the Elderly, Medical School, Medical Centre, Nottingham, United Kingdom

Speakers

Dr M. Britton

Department of Medicine, St Göran's Hospital, Stockholm, Sweden

Dr M. Dennis
Neurosciences Trials Unit, Department of Clinical Neurosciences. Western General Hospital Edinburgh, United Kingdom

Professor S. Ebrahim
Department of Public Health and Primary Care, Royal Free Hospital, London, United Kingdom

Professor B. Johansson
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Professor M. Kaste
Department of Neurology, University of Helsinki, Helsinki, Finland

Mr D. O'Kelly
Sir Walter Scott House, London, United Kingdom

Moderators and group discussion leaders

Management of acute stroke
Professor J.-M. Orgogozo
Institute de Cerveau, Université de Bordeaux II, Bordeaux, France

Secondary prevention
Professor A. Portera Sanchez
I Servicio de Neurologia, Hospital Universitario "12 de Octubre", Madrid, Spain

Organization of stroke services
Professor J. Olesen
Department of Neurology, Glostrup Hospital, Copenhagen, Denmark

Evaluation of stroke outcome and quality assessment
Dr M. Limburg
Department of Neurology, Academic Medical Center, Amsterdam, The Netherlands

Rehabilitation
Dr D. T. Wade
Rivermead Rehabilitation Centre, Oxford, United Kingdom

Invited discussants

Professor G. Boysen
Neurologist, Neuromedicinsk Afdeling, Hvidovre Hospital, Hvidovre, Denmark

Ms P. Enderby
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Dr C.A. Gatti
Carer, Rome, Italy

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Physiotherapist, Huddinge Sjuskhus, Neurologkliniken, Huddinge, Sweden

Dr B. Indredavik
Internist, Department of Medicine, University Hospital, Trondheim, Norway

Ms M. King
Nurse, Milan, Italy

Professor Z. Nagy
Neurologist, National Stroke Centre, Semmelweis University of Medicine, Budapest, Hungary

Professor M. Prencipe
Neurologist, Departimento di Scienze Neurologiche, Universita di Roma “La Sapienza”, Rome, Italy

Dr D. Rastenyte
Epidemiologist, Department of Epidemiology and Health Promotion, National Public Health Institute, Mannerheimintie, Helsinki, Finland

World Health Organization

Regional Office for Europe

Dr M. Danzon, Director, Health Promotion and Disease Prevention
Ms S. Drengsted-Nielsen, Secretary, Quality of Care and Technologies
Ms B. Havn, Programme Assistant, Chronic Diseases
Ms D. Ryan-Christensen, Secretary Chronic Diseases
Dr A. Shatchkute, Regional Adviser, Chronic Diseases
Dr K. Staehr-Johansen, Regional Adviser, Quality of Care and Technologies