

# Setting-up a Blood Pressure and Vascular Protection Clinic: Requirements of the European Society of Hypertension

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Journal of Hypertension 2010, 28:1780–1781

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## Introduction

The European Society of Hypertension (ESH) has certified 'ESH Centres of Excellence', which consist of teams of ESH hypertension specialists based on tertiary institutions/hospitals and are identified by their high quality expert scientific activity in research and clinical management, including facilities to diagnose secondary hypertension.

The 'ESH Blood Pressure and Vascular Protection Clinics' (ESH BP-VP Clinics) consist of individuals or groups of ESH hypertension specialists working in medical practice (primary care or institutions/hospitals) who have special interest and expertise in hypertension.

ESH BP-VP Clinics are linked to the ESH Centres of Excellence. One Centre of Excellence can be associated with several BP-VP Clinics with European recognition. The Centres of Excellence and the BP-VP Clinics allow the organization of a network aiming to improve the accuracy of diagnosis and management of hypertension and to be involved in multicentre clinical research activities.

## Purpose of an ESH BP-VP clinic

The main purpose of a BP-VP Clinic is to provide expert medical advice and care for patients with hypertension. However, there are clearly quite a number of other objectives of a blood pressure service delivered through a clinic, which are important to the healthcare system. The final shape and organisation/structure of a BP-VP Clinic may depend on the objectives which may differ among clinics, different local health care systems and change with time. Good BP-VP Clinics may not necessarily address all the possible purposes described below.

ESH BP-VP Clinics should: (i) provide high level of expertise and facilities for blood pressure measurement, (ii) have the ability to estimate total cardiovascular risk by assessing established indices of organ damage, (iii) be involved in clinical research, (iv) be affiliated with local

ESH Centres of Excellence. The preparation of a written protocol presenting the purpose, structure and function of each BP-VP Clinic is highly recommended.

The objectives of an ESH BP-VP Clinic and the services provided include the following:

- (1) Medical service: To deliver optimal integrated and coordinated clinic care including assessment, investigation, treatment, ongoing monitoring and auditing of therapeutic response and outcomes.
- (2) Education: To provide structured training facilities for doctors, nurses and other health professionals. Patients' education aiming to improve understanding of relevant health issues to aid long-term compliance with treatment is an additional important objective.
- (3) Referral centre: To act as a centre that receives patients with difficult, secondary, complicated hypertension referred by primary care physicians.
- (4) Research: To recruit patients into clinical trials and facilitate follow up of patients in long-term trials, in collaboration with ESH Centres of Excellence.

## Specific aspects/requirements of an ESH BP-VP clinic

- (1) Blood pressure assessment: (i) standardized office blood pressure measurements, nurses, electronic devices, hybrid devices, self-measurements in the clinic, bluetooth; (ii) standardized out-of-office blood pressure measurement methods; controlled and unbiased ambulatory and home blood pressure monitoring.
  - Mercury sphygmomanometers: still an option in some countries; require annual standardization of observers (British Hypertension Society protocol).
  - Professional automated oscillometric arm devices:
    - preferred in countries where mercury devices are banned and/or large numbers of staff measuring blood pressure;
    - device validation required using established protocols (European Society of Hypertension International protocol, British Hypertension Society protocol, American Association for the Advancement of Medical Instrumentation);
    - validated devices lists at [www.dableducational.org](http://www.dableducational.org), [www.bhsoc.org](http://www.bhsoc.org);
    - probably the standard in the near future;
    - new technology provides automated repeated measurements and averaging, bluetooth com-

- munication, simultaneous both arms measurements, etc.
- Nurse taken blood pressure measurements: preferred to physicians, if available.
  - Automated office BP measurements: BpTRU concept (office measurements taken by automated devices while patients are alone in the office/examination room).
  - Ambulatory blood pressure monitoring: device validation required using established protocols (European Society of Hypertension International protocol, British Hypertension Society protocol, American Association for the Advancement of Medical Instrumentation); validated devices lists at [www.dableducational.org](http://www.dableducational.org), [www.bhsoc.org](http://www.bhsoc.org)).
- (2) Evaluation of target organ damage:
- Electrocardiography
  - Echocardiography
  - Fundoscopy
  - Urine dipstick
  - Microalbuminuria (spot urine for albumine:creatinine ratio)
  - Ankle brachial index (ABI)
  - Carotid wall thickening (where available)
  - Pulse wave velocity (PWV) (where available)
- (3) Investigation for secondary hypertension: Direct access to ESH Centres of Excellence or other hospitals or labs to perform appropriate tests to exclude endocrine, renal or renovascular hypertension.
- (4) Lifestyle modification and other risk factors: Integrated treatment plan to include consultation and follow up of non-pharmacological intervention (diet, exercise); lipid lowering or other medication; need for a multidisciplinary team to deliver these treatments.
- (5) Follow up monitoring: including audit and review of individual cases and the overall blood pressure control in the patients attending the clinic. Ideally linked to outcomes and cardiovascular events in the population being treated.
- (6) Communication and optimised transfer of information between the clinic and the patient and primary care, ESH Centres of Excellence, and other specialist medical teams.
- Telemedicine to improve compliance, e.g. home blood pressure monitoring; patients' memo and appointments; communication for unattended appointments.
  - Development of other models of continuing care such as "shared care" with general practice or "intermediate care" with specialist nurse teams for blood pressure, diabetes, lipids etc.
- (7) Patients' records organisation: Establishment of a database management system and computer software designed to collect, store and retrieve patients' data in a structured way. The system should be designed to:
- facilitate prompt monitoring of all cardiovascular risk factors and target organ damage;
  - implement and interpret office and out-of-office blood pressure measurements;
  - calculate total cardiovascular risk annually;
  - highlight major problems of individual patients;
  - aid communication with patients, primary care and other relevant services;
  - audit of drug use, effectiveness and outcomes.