Establishing a distance learning programme in blood safety: a guide for programme coordinators
Safe Blood and Blood Products

Establishing a distance learning programme in blood safety: a guide for programme coordinators
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This manual has been prepared for national blood programmes wishing to set up a distance learning programme in blood safety, using learning materials developed by the World Health Organization Blood Safety Unit (WHO/BLS) as part of its strategy to minimize the transmission of infectious agents, such as HIV, hepatitis viruses, syphilis and Chagas disease, through the supply of blood.

In 1994, WHO/BLS produced Safe Blood and Blood Products, a series of learning materials for staff who are responsible for blood donor recruitment and the collection, screening and issue of blood for transfusion, particularly those who would not otherwise have access to training. The materials can be used in conventional training programmes or for independent study, but were specifically developed for use in distance learning programmes to enable staff to undertake in-depth training without leaving their workplaces for long periods.

Additional learning materials have also being developed by WHO/BLS:

- The Clinical Use of Blood, for the prescribers of blood and blood products
- The Blood Cold Chain, for the managers and users of blood cold chain equipment.

Like Safe Blood and Blood Products, they can be used as resource materials in conventional training programmes, for self-directed learning or in distance learning programmes.

Distance learning is widely used in professional and vocational education throughout the world, but has not previously been used in the field of blood transfusion. WHO/BLS has included distance learning in its strategy to support training in blood safety because it offers blood transfusion services a cost-effective way of expanding their training activities when resources and facilities are limited. It is not meant to replace other approaches, but to be used in conjunction with existing training programmes.

Since the publication of Safe Blood and Blood Products, WHO/BLS has collaborated with all six of WHO’s Regional Offices to hold a series of regional and sub-regional workshops for over 250 senior blood transfusion service personnel from 95 countries to promote the establishment of national distance learning programmes in blood safety. Workshop participants were enthusiastic about this approach to training, but few had any prior experience of distance learning and most felt they needed more information and technical support. WHO/BLS has therefore produced this manual to provide a practical guide for the personnel responsible for setting up and managing a distance learning programme in blood safety.
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Introduction

The WHO learning materials, *Safe Blood and Blood Products* can be used as resource materials in conventional courses and in-service training programmes and can also be studied completely independently for individual updating. However, they were specifically designed for use in a distance learning programme in which learners receive tutorial support, including practical training, throughout their study of the materials.

This manual introduces the distance learning approach and focuses on the design and implementation of a distance learning programme in blood safety. It examines the following aspects of setting up a distance learning programme in blood safety:

1. How distance learning can expand access to training.
3. The structure of a distance learning programme in blood safety.
4. The role of key programme personnel:
   - the programme coordinator
   - trainers
   - supporters.
5. The learner support system.
7. Programme planning.
8. Programme monitoring and evaluation.

**DISCUSSION POINTS**

Discussion points, indicated by the symbol shown on the left, are included in the margin of the manual. They are designed to assist you to relate particular issues to your country’s specific needs and circumstances.

**THE TOOLKIT**

Accompanying the manual is a ‘Toolkit’, a set of resource materials to support you in starting a distance learning programme. For easy reference, symbols in the margin and a short description refer you to the items supplied in the Toolkit.
**Checklists**

The Toolkit contains ten checklists to assist in programme planning and evaluation which can also be photocopied for use as handouts in workshops or training sessions for programme personnel.

**Overhead projector transparencies**

The Toolkit also contains 35 ‘overheads’ which can be photocopied onto overhead projector transparencies. They provide a comprehensive summary of the main topics covered in the manual and are designed for use in workshops or training sessions.
Distance learning

The purpose of this section is to introduce you to distance learning and how it might help to meet your country’s training needs in blood safety.

TRAINING: NEEDS AND CONSTRAINTS

The global spread of transfusion-transmissible infections and, in particular, the human immunodeficiency virus (HIV), hepatitis B and hepatitis C, have focused increased attention on blood safety and there is now widespread awareness that safe and adequate supplies of blood can only be achieved through the following integrated strategy (see Annex 1: Aide-Memoire: Blood Safety. WHO 1998).

1. The collection of blood only from voluntary non-remunerated blood donors from low-risk populations.

2. The screening of all donated blood for transfusion-transmissible infections, using the most appropriate and effective tests, and good laboratory practice in blood grouping, compatibility testing, component preparation and the storage and transportation of blood and blood products.

3. Minimizing unnecessary transfusions through the effective clinical use of blood and blood products.

The effectiveness of this strategy will depend on a number of factors, but one of the most vital is the knowledge and skills of blood transfusion service staff. Throughout the world, the qualifications and experience required for entry into blood banking have generally risen to a much higher level than even ten years ago. In many countries, however, there are considerable variations in the quality of performance, especially among staff who received inadequate basic training in the past and have had no updating or further training. In addition, the knowledge and skills required for safe and efficient transfusion practice are constantly changing, particularly with the growing incidence and prevalence of transfusion-transmissible infections.

Training is fundamental to every aspect of blood safety. However, many countries face the following problems in providing adequate training for all staff who need it.
Section 1

1. Large numbers of staff require updating or further training.
2. There are wide variations in the training needs of staff working at different levels of the health care system.
3. Staff requiring training are spread out over a large geographical area and many are distant from training centres.
4. Few countries have an adequate budget for conventional training courses, particularly for travel and subsistence costs.
5. There is a shortage of suitable training facilities and residential accommodation.
6. There is an inadequate number of suitably qualified and experienced trainers.
7. Few training and reference materials are available.
8. Services face increased pressure when staff are absent for training.
9. Many staff are reluctant to leave their families for long periods of training.

Distance learning can play an important role in strengthening and expanding training programmes in blood safety because it offers a flexible, cost-effective means of overcoming some of these common problems.

What is Distance Learning?

Distance learning is a decentralized approach to delivering education and training in which much of the teaching–learning process takes place outside conventional training institutions. This flexible approach has the following characteristics:

1. Trainers and learners do not need to be in the same place and can be linked up over a wide geographical area.
2. Most of the teaching is delivered through specially-designed learning materials supplied directly to individual learners.
3. A learner support system is established to provide ongoing tutorial support, guidance and supervised practical training.
4. Learners can organize their own study to fit in with their work and personal commitments rather than having to follow a fixed timetable.
5. To some extent, the curriculum can be tailored to meet their individual learning needs.

The learner support system

Distance learning can be a very effective method of education and training as long as there is a well-organized system of tutorial support and practical supervision. In a distance learning programme in blood safety, this usually involves two categories of programme personnel.
1. A small number of trainers who are responsible for coordinating training and providing tutorial support for a group of learners in their locality through:
   - regular contact by mail, telephone, fax or e-mail
   - group meetings and tutorials
   - practical training sessions at designated study centres.

2. A network of supporters who provide individualized support, supervision and feedback in the learner’s own workplace.

Practical course work takes place in:

1. Study centres: blood transfusion centres, large hospital blood banks, reference laboratories and education and training institutions.

2. The learner’s own workplace, if a suitably qualified and experienced supervisor is available.

Sections 4 and 5 give further information on the roles of trainers and supporters and the learner support system.

A DISTANCE LEARNING PROGRAMME IN BLOOD SAFETY

A distance learning programme built around the WHO learning materials, Safe Blood and Blood Products, offers a number of benefits to national health authorities wishing to expand training in blood safety.

Benefits for health authorities

1. The combination of specialized learning materials and local expertise enables a comprehensive and in-depth training programme to be made widely available outside a specialist training institution.

2. A larger number of staff can be trained in a relatively short time as the programme is not dependent on access to suitable training facilities offering full-time courses.

3. Fewer trainers are needed because most of the teaching is provided through the learning materials. Trainers spend less time on direct teaching, focusing more on building systems at local level to support learners.

4. Distance learning is usually more cost-effective than conventional training because there is less need for:
   - residential course attendance, which normally involves high travel and subsistence costs
   - payment for replacement staff cover.

5. There is less disruption to services because staff do not have to leave their posts for long periods to attend a course at a training institution.

6. Staff receive uniformly high quality training, wherever they work, because they all use the same learning materials prepared by international experts.
7 The use of these learning materials throughout the country promotes the standardization of approaches and procedures.

8 The flexible work-based approach to training used in the learning materials is specifically designed to improve staff performance.

9 The learning materials can be used as a resource for conventional training courses and in-service training, as well as in a distance learning programme.

10 Senior staff responsible for training and supervision can use the materials for reference and revision.

Benefits for staff

The distance learning approach also offers the following benefits to individual staff requiring training.

1 More staff can have access to training, particularly those in remote areas. They do not need to be present in a lecture room or teaching laboratory throughout the programme because most of the training – in the form of the learning materials – comes directly to them.

2 They do not have to leave their work or their families for long periods of study on a residential course.

3 Although there is less face-to-face teaching, learners should not be disadvantaged in comparison with students on a conventional course. If there is an efficient learner support system, they should receive individualized support throughout their study from their supporter in their own workplace.

4 The modular structure of the learning materials accommodates variations in individuals’ knowledge, skills, experience and current work and means that the programme can be tailored to meet their particular training needs.

5 Learners have more control over the time, place and pace of their study. The timing of the training can be flexible because they do not need to attend a training institution and can study during their working day, at times mutually agreed with their supervisor. The period of time required for study can be adjusted to suit their needs and abilities, allowing those with less knowledge and experience to take more time than those who are more familiar with the subject.

6 The interactive learning materials build on individuals’ own experience and focus on the particular environment in which they currently work. In particular, they encourage learners to evaluate their current practice and, where appropriate, suggest ways of improving systems and procedures in their own workplace.

7 Learners can be assured of high quality teaching through the learning materials and can keep them for future reference and to share with their colleagues.
The distance learning materials

This section describes the WHO distance learning materials, Safe Blood and Blood Products, and outlines their main features. Other learning materials being developed by WHO/BLS have similar features.

THE MODULES

The distance learning materials, Safe Blood and Blood Products, were written by international subject experts and reviewed by transfusion medicine specialists from each of the six WHO Regions. They consist of four modules, accompanied by a Trainer’s Guide:

- Introductory Module: Guidelines and Principles for Safe Blood Transfusion Practice
- Module 1: Safe Blood Donation
- Module 2: Screening for HIV and Other Infectious Agents
- Module 3: Blood Group Serology

The audience

The modules were produced primarily for laboratory technical staff working in blood transfusion services and hospital blood banks who are involved in donor recruitment and the collection, screening, processing and issue of blood for transfusion. They were designed for staff who have completed an initial training programme and have some practical experience, particularly those who have been in service for some years and have had no further training. However, they can also be used as resource materials at basic or more advanced levels.

The Introductory Module: Guidelines and Principles for Safe Blood Transfusion Practice and Module 1: Safe Blood Donation will also be valuable for staff responsible for donor education, motivation, recruitment and retention, including those in non-governmental organizations such as national Red Cross or Red Crescent Societies and voluntary blood donor organizations.

The modules will also be a useful resource for:

- teaching staff in blood transfusion services, universities and other training institutions
Senior laboratory technical staff with responsibility for in-service training and supervision

medical, nursing and paramedical staff who wish to enhance their knowledge of blood transfusion practice.

Aims of the modules

The aims of the modules are:

1. To update learners’ knowledge and ensure it is accurate and comprehensive.
2. To improve their technical skills and performance.
3. To strengthen their understanding and ability to apply their knowledge and skills in their everyday work.
4. To encourage them to evaluate their own practice and identify ways of improving systems and procedures in their workplace.

Introductory Module: Guidelines and Principles for Safe Blood Transfusion Practice

The Introductory Module provides a foundation for the programme as a whole by explaining the distance learning approach and outlining the aims and structure of the modules. It also introduces some basic principles for safe and efficient practice. When they have worked through this module, learners should be able to achieve the following objectives.

1. Demonstrate a professional approach to their work.
2. Identify specific hazards in their workplace and contribute to the design and implementation of safe working procedures.
3. Contribute to the maintenance of a quality system in the workplace.
4. Develop and maintain a system for the safe storage and transportation of blood and plasma.
5. Efficiently maintain blood storage equipment and deal with unexpected problems.
6. Be competent in preparing four basic solutions commonly used in blood transfusion practice.
7. Manage stocks of consumables efficiently.

Module 1: Safe Blood Donation

Module 1 focuses on the recruitment and selection of low-risk blood donors and building up a panel of voluntary non-remunerated blood donors who give blood regularly. When they have worked through this module, learners should be able to achieve the following objectives.

1. Identify low-risk donor populations and encourage potentially unsafe donors to self-defer.
2 Estimate the number of donors needed to meet the blood requirements of their locality.
3 Develop an effective donor education, motivation, recruitment and retention campaign to increase the number of regular voluntary non-remunerated blood donors.
4 Plan and organize fixed and mobile donor clinic sessions.
5 Develop and maintain effective blood donor selection procedures.
6 Provide a high standard of care for donors before, during and after donation.
7 Maintain an efficient donor record-keeping system.
8 Develop an effective system for retaining regular voluntary non-remunerated donors.

Module 2: Screening for HIV and Other Infectious Agents
Module 2 deals in detail with screening for HIV and applies the same principles to screening for hepatitis viruses, syphilis, malaria and Chagas disease. When they have worked through this module, learners should be able to achieve the following objectives.

1 Explain the role of microorganisms as infectious agents in human disease and their significance for blood transfusion.
2 Describe HIV infection and the significance of infection for blood transfusion practice.
3 Outline the principles of the diagnostic assays most commonly used to detect anti-HIV and HIV-Ag and explain the differences between them.
4 Select the most suitable type of anti-HIV screening assay for use in their own laboratory.
5 Contribute to the development of an effective anti-HIV screening programme and maintain accurate records of the screening results.
6 Develop an appropriate quality system for their laboratory to maintain an effective screening programme.
7 Recognize the basic features of other infectious agents and their significance for blood transfusion practice.

Module 3: Blood Group Serology
Module 3 focuses on the ABO and Rhesus blood group systems and techniques for blood grouping and compatibility testing. When they have worked through this module, learners should be able to achieve the following objectives.

1 Explain the functions of the main components of blood and their importance in blood transfusion practice.
2 Explain the red cell antigen–antibody reaction and the factors that affect it.

3 Explain the ABO blood group system and use the results of cell and reverse ABO grouping tests to identify the blood groups of donors and patients.

4 Explain the Rh blood group system and identify when it is appropriate to use Rh D positive or Rh D negative blood and when to test for D⁺.

5 Explain the importance of compatibility testing and develop and maintain appropriate procedures and records for the safe request, selection and issue of blood under routine and emergency conditions.

6 Explain the principles of the main techniques used in blood grouping and compatibility testing and perform them safely and accurately.

FEATURES OF THE MODULES

The modules use a work-based approach which encourages learners to think carefully about what they do, how they do it and how they might improve the process. This emphasis on self-evaluation, a constant search for improvement and a willingness to innovate is an important means of strengthening individual staff performance. The modules are not only intended to extend and update learners’ knowledge but, in particular, to help them apply that knowledge effectively in their everyday work.

The modules contain the following features to promote this process of active learning:

- **Overall module objectives** outlining what learners should be able to do when they have completed each module
- **Learning objectives** which state what they should be able to do after working through each section of the modules
- **Study plans** to help them to identify their individual training priorities and organize their study
- **Summaries** of the key points in each section
- **Progress checks** at the end of each section to help them evaluate their own progress
- **Self-assessment questions and answers** to help them check their knowledge and understanding
- **Activities** to help them relate their learning directly to their current work and practise new skills
- **Action plans** to be prepared when they reach the end of each module to help them plan ways of improving systems and procedures in their own workplace
- **Appendices** containing reference material, examples of documentation and standard operating procedures
- **Laminated charts**: selected extracts from the modules that can be reproduced and displayed in the workplace.

**Using the modules to meet identified training needs**

How far do the learning objectives of the modules match identified training needs and priorities in your country?
These features of the learning materials are described in more detail in the Introductory Module: Guidelines and Principles for Safe Blood Transfusion Practice.

**USING THE MODULES**

The modules provide a comprehensive training package containing all the information that would normally be provided by a tutor in a conventional training programme. They are designed for self-directed learning, enabling learners to study them in their own workplace or at home, according to the individual study plan agreed with their supporter. Additional teaching and practical training are provided by the trainer and supporter. Section 3 describes the kind of organizational infrastructure needed to provide this support while Section 4 explores the role of the trainer and supporter in more depth.

It is important for learners to work through the Introductory Module before moving on to the other modules because it explains the distance learning approach and how to use the materials. It also includes core material which provides the basis for their study of the other modules. Once they become familiar with the approach used in the Introductory Module, they should feel confident about moving on to the more specialized material. The remaining modules follow a logical sequence, from blood donor recruitment through to the screening of blood and its issue for transfusion. However, because each module is self-contained, they can be studied in the order that best meets an individual’s agreed training needs and priorities.

Some modules may not be relevant to all staff requiring training. A laboratory technician in a provincial blood transfusion service, for example, may be responsible for screening blood for infectious agents, blood grouping and compatibility testing, but have no direct contact with blood donors. It may be agreed that he should start with Module 3: Blood Group Serology to revise his basic serological knowledge and skills and then to work through Module 2: Screening for HIV and Other Infectious Agents. If he is also involved in blood collection, however, it may be more appropriate for him to begin by studying Module 1: Safe Blood Donation, particularly if high priority is attached to increasing the number of voluntary non-remunerated donors.

**OBTAINING THE MODULES**

The modules have been produced by WHO in the following major languages:

- English
- French
- Spanish
- Chinese
- Portuguese (in preparation)
- Russian (in preparation)
- Arabic (in preparation).

Some countries have also translated the modules into their own national languages. Information on the reproduction, translation and adaptation of the modules is included in Annex 2.
ADDITIONAL MATERIALS

Study guide for learners

The modules are designed as a self-contained study package and the Introductory Module provides general guidance for learners on how to use them effectively. However, if they are studying them within a distance learning programme, they will also need more specific information on how the programme operates in your country.

While there may be some variations in the way the programme operates in different parts of the country or for different categories of staff, most of the information they need will apply to all learners. This should be provided during an orientation briefing, but they will also find it helpful to receive a written Study Guide that they can refer to at different stages of their study. Section 5 considers some of the information that might be included in a guide for learners.

Guide for trainers and supporters

A Trainer’s Guide has been produced by WHO/BLS to accompany the learning materials, Safe Blood and Blood Products. As with the modules, however, the Trainer’s Guide can only offer broad guidelines and trainers and supporters will need written guidance on their particular roles and responsibilities in the programme established in your country. Section 4 outlines some of the information that should be provided as part of their orientation and training.

Supplementary materials

It may also be necessary to produce some additional material to relate the modules more specifically to your national situation. There are almost certainly materials available in your country that are relevant to the modules and would be a useful resource for learners, such as national policies and epidemiological data.

The modules contain various standard operating procedures (SOPs) and documentation, such as donor records, a stock control card and a blood request form. These are simply examples which can be adapted for use in countries where none already exist. If SOPs and documentation of this kind have already been developed in your country, copies should be provided with the modules with instructions on how to use them.
Programme structure

This section outlines a simple structure for a distance learning programme in blood safety that can be adapted to the specific needs of each country.

COMPONENTS OF A DISTANCE LEARNING PROGRAMME

While the WHO learning materials are a key component of a distance learning programme in blood safety, building an effective programme involves more than simply selecting staff for further training, providing them with copies of the modules and assessing what they have learned. Distance learners should not be expected to study without support. A system is needed to ensure that all staff undertaking the programme, however geographically distant from a training centre, are given guidance and support throughout their study and practical work.

An organizational structure must therefore be established to manage the four key components of a distance learning programme in blood safety:

- delivery of the modules
- tutorial support provided by the trainers and supporters
- practical work in study centres or learners’ own workplaces
- assessment of learning.

The structure that is most appropriate for each country will depend on national needs and circumstances, but should be designed to make full use of the existing health service and training infrastructure at all levels.
The way in which a distance learning programme is structured will be determined by its purpose and the nature of the institution that has developed it. A national open university, for example, requires a complex structure in order to deliver a wide range of courses to large numbers of students. In contrast, the structure of a distance learning programme in blood safety will usually be comparatively simple. It will depend on a number of factors, including:

- the size and geography of the country
- the structure of the health service and the national blood programme
- the number and location of staff requiring training
- the availability and location of senior staff who can act as trainers and supporters
- the location of centres with suitable facilities to act as study centres, such as regional or provincial blood centres, reference laboratories and training institutions
- the efficiency and cost of the post, telecommunications and transport systems.

**RESPONSIBILITY FOR PROGRAMME COORDINATION**

World Health Assembly Resolution WHA 28.72 of 1975 recommended that governments, through Ministries of Health, are responsible for ensuring the safety and adequacy of national blood supplies. The responsibility for regulating training therefore normally rests with the Ministry of Health or another statutory authority.

In practice, the blood transfusion service is likely to be responsible for coordinating a distance learning programme in blood safety although, in some countries, the role may be delegated to an approved training institution or a professional body responsible for professional registration or licensing.

**A MODEL FOR THE STRUCTURE OF A DISTANCE LEARNING PROGRAMME**

In most countries, the most suitable structure for a distance learning programme in blood safety is one that operates at three levels, under the management of a national programme coordinator, as shown in the simple model below.
Programme Structure

The national programme coordinator, who is responsible for setting up and managing the programme, is likely to be based in the national blood transfusion service. Trainers are generally based in regional or provincial blood centres and training institutions. These centres act as study centres in which group tutorials and practical sessions are held. A network of supporters is established at local level to provide individual guidance and support to learners in the blood centres or hospital blood banks in which they work.

This simple model can be adapted to suit the particular needs of each country. In small countries, for example, where staff requiring training are located in a limited number of blood centres and hospital blood banks, the role of programme coordinator and trainer may be combined at national level. Learners are each allocated a supporter in the centres in which they work and the programme coordinator/trainer maintains regular contact with them by post, telephone or occasional visits. The national blood transfusion service acts as a study centre where regular tutorials and practical sessions are held.

In very large countries with a number of state, provincial or regional blood transfusion services and many hospital blood banks spread over a wide geographical area, the national programme coordinator has overall responsibility for setting up the programme and ensuring consistency in its operation, including the development of a standardized approach to the assessment of learning and programme monitoring and evaluation. The management of the programme is then delegated to state, provincial or regional coordinators who are responsible for the operation of the programme in their own areas.

Study Centres

Institutions designated as study centres should have the facilities and resources to hold periodic group tutorials and practical training sessions for learners participating in the programme in their region, including:

- adequate space and facilities for teaching and practical work, including appropriate equipment and reagents
- adequate communication links, including post, telephone and, if possible, fax and e-mail
- experienced, well-qualified senior staff able to act as trainers or resource people
- administrative support
- access to suitable, low-cost residential accommodation
- access to reference and resource materials.

Blood transfusion services, reference laboratories, universities, technical training institutions and well-resourced hospitals are likely to meet all these criteria and are obvious choices as study centres. However, practical training can take place in any centre where blood is routinely screened and tested as long as a trainer or suitably-qualified supporter is available for teaching and supervision. In some circumstances, it may be more appropriate or cost-effective for trainers to make periodic visits to the hospitals in which learners work for individual tutorials and practical work.
PARTICIPATING CENTRES

‘Participating centres’ are centres from which learners are selected to undertake the programme. The choice of participating centres will depend on national training priorities and the availability of funding, but the following criteria should be taken into account in their selection:

- recognition of the need for training for one or more nominated learners
- availability of a member of staff who is able and willing to act as a supporter
- willingness to allocate time for study and meetings between learners and their supporter
- willingness to encourage and respond positively to any realistic, appropriate proposals for change from learners as a result of their participation in the programme.

In a pilot project, it may be decided to begin with a small number of trainers and to focus on selected centres in the regions in which they are based. Alternatively, it may be more appropriate to select centres which are known to have senior staff who would be particularly suitable to act as supporters.

As the programme grows, the priority may be to focus on older staff who have received inadequate training in the past or those in small rural hospital blood banks who do not have easy access to training centres. In some countries, the most urgent need may be to concentrate on blood centres and hospitals where blood is routinely collected from paid or family/replacement donors and to train staff in the recruitment of voluntary non-remunerated donors.
Programme personnel

This section describes the roles of key personnel in a distance learning programme in blood safety: the programme coordinator, trainers and supporters.

THE PROGRAMME COORDINATOR

In most countries, the national blood transfusion service, or its equivalent, will be appointed as the authority with official responsibility for developing and managing the programme, although some functions and responsibilities may be delegated to another approved organization or institution, such as a university. The overall coordination of the programme will need to be undertaken by a senior member of staff at national level but, in large countries, it may also be necessary to appoint additional coordinators at state, regional or provincial level.

The role of the programme coordinator

The role of the programme coordinator will depend on the scale of the programme, but will involve a wide range of tasks from initial planning and negotiation with government and funding agencies to organizing the learner support system and developing the learning assessment scheme. The coordinator may also act as a trainer in some cases.

Planning

At the planning stage, the coordinator’s functions will include:

1. Identifying overall training needs and priorities.
2. Developing an initial plan for the development of the programme.
3. Identifying agencies, institutions and individuals who can assist in programme planning and development.
4. Establishing an Advisory Group to provide advocacy, advice and technical support.
5. Obtaining official approval and support for the programme from government and other relevant authorities.
6. Preparing a proposal and budget for a pilot project.
7. Securing funding for capital and recurrent costs.
Preparation
Systematic preparation will be required before the programme can begin, whether on a pilot basis or a wider scale. At this stage, the programme coordinator’s functions will include:

1. Designing the learner support system.
2. Designing the system for the assessment of learning.
3. Selecting institutions to act as study centres.
4. Selecting participating centres.
5. Selecting and training trainers.
7. Managing the selection and orientation of learners.
8. Preparing supplementary materials.
9. Organizing the delivery of materials to learners.
10. Designing record-keeping and reporting systems.
11. Developing a system for monitoring and evaluation.

Implementation
Once the programme has begun, the role of the coordinator will include:

1. Maintaining regular contact with trainers and, through them, with supporters.
2. Programme administration.
3. Financial management.
4. Managing the learner assessment system.
5. Programme monitoring and evaluation.
6. Reporting to government and funding agencies.
7. Organizing the wider implementation of the programme.

Selection
An effective programme coordinator is likely to be someone who has an established reputation in transfusion medicine and is respected among his or her peers. The person appointed should meet the following criteria:

- occupy a senior position
- appropriate qualifications and experience
- commitment to training and the distance learning approach
- good management and organizational skills
- strong interpersonal communication skills
- knowledge of national and local policies
- good contacts in the blood transfusion service at all levels
Selecting a programme coordinator

What criteria should be set for the selection of a programme coordinator at national level and, where applicable, at state, regional or provincial levels?

PROGRAMME PERSONNEL

- flexibility and a positive attitude towards change
- sufficient time to devote to the programme
- willingness to travel.

The amount of time required to coordinate and manage the programme will depend on the complexity of its organizational structure and the number of people and sites that are involved. Coordinators of pilot projects or small programmes may be able to manage them as part of their normal work, particularly if they already have responsibility for training. In large-scale programmes, however, the role of programme coordinator will probably need to be established as a part-time or full-time post with administrative or secretarial support.

THE TRAINER

The overall function of the trainer in a distance learning programme is to provide tutorial support to a group of learners and their supporters in a defined geographical area. Unlike a conventional tutor, however, the trainer has limited face-to-face contact with learners since most of the teaching is provided through the modules. The trainer becomes more of a training facilitator and manager who is responsible for a range of organizational as well as teaching functions. This does not mean that the role is any less important than that of a tutor in a conventional training programme, but that additional skills are required.

The role of the trainer

The trainer has a wide-ranging role concerned with the coordination and management of the programme, ensuring the learner support system works effectively at local level, as well as providing direct academic support and guidance to a group of learners in their locality.

Coordination and management

The coordination and management elements of the trainer’s role include:

1. Establishing and maintaining contact with centres that have been selected to participate in the programme.
2. Briefing managers in participating centres about the support they will be expected to provide for learners, including:
   - allocating time for study
   - designating a senior member of staff to act as a supporter for each learner
   - creating a positive learning environment in which learners are encouraged to apply what they learn and to suggest improvements, where appropriate.
3. Assisting in the selection of learners and their supporters.
4. Training supporters.
5. Maintaining regular contact with supporters to provide any assistance they need and to monitor learners’ progress.
Organizing the assessment of learning in their locality.
7 Reporting regularly to the programme coordinator.
8 Contributing to programme monitoring and evaluation.

**Tutorial support**
The trainer’s tutorial support role will include:

1 Providing orientation for learners about the programme.
2 Providing academic support at a distance by mail, fax, telephone or e-mail.
3 Organizing group tutorials at study centres.
4 Organizing practical training sessions at study centres.
5 Visiting learners for individual tuition and practical supervision, where required.
6 Assessing and providing feedback on learners’ work.

**Guidance and counselling**
The trainer’s guidance and counselling role will include:

1 Maintaining regular contact with learners to help prevent feelings of isolation.
2 Giving constructive feedback on their progress.
3 Providing individual guidance whenever they need any help that their supporter is unable to provide.
4 Encouraging learners to maintain contact with others who are also undertaking the programme.

**Selection**
The most suitable people to act as trainers are likely to be senior laboratory technical staff in blood transfusion centres, reference laboratories or large hospitals or teaching staff in training institutions. Wherever possible, they should meet the following criteria:

- occupy a senior position
- appropriate qualifications and experience
- experience and expertise in training and the assessment of learning
- flexible approach to training and a positive attitude towards distance learning
- good management and organizational skills
- strong interpersonal communication skills
- knowledge of national and local policies
- sufficient time to devote to the programme
- willingness to travel.
Personnel appointed as trainers will need the formal agreement of their employer, particularly if they undertake this role as part of their normal work. Consideration should be given to payment of an honorarium in recognition of the impact this may have on their other work or if it involves working additional hours.

Training

Even where the personnel appointed to act as trainers have previous experience of training, it is essential that they receive adequate preparation before they accept responsibility for a group of learners, particularly since they are unlikely to have any direct experience of the distance learning approach. The WHO/BLS Trainer’s Guide provides general guidance on the role of the trainer and suggests a range of activities to be undertaken before, during and at the completion of the course. However, since trainers play such a key role in the programme, they will also need more specific training, preferably in a workshop, to brief them on the following issues.

1. The organization of the programme.
2. Their roles and responsibilities as trainers.
3. Adult education approaches and the particular skills required to support learners at a distance, including:
   - monitoring learners’ progress
   - teaching and counselling by correspondence and telephone
   - providing feedback
   - supporting learners with particular learning needs or problems
   - monitoring and supporting supporters.
4. The content and organization of group tutorials and practical sessions.
5. The assessment system.
6. Record-keeping and reporting requirements.

The value of a training workshop rather than individual briefings is that it will give trainers an opportunity for in-depth discussion about the programme and their role in it. Since the learning materials provide the primary teaching input, it is an ineffective use of trainers’ time to re-teach the contents of the modules, except where learners are experiencing any difficulties in understanding any of the topics. One of the main points of discussion should therefore be how trainers might adapt their teaching skills to the particular requirements of a distance learning programme, including setting up an effective learner support system at local level and using group tutorials and practical sessions to complement learners’ individual study of the modules and their work with their supporters. A workshop will also provide a useful opportunity for training in the methods used for the assessment of learning and enable trainers to work on mock assessment tests under supervision.

Since trainers in a distance learning programme require special skills, it may be helpful to seek assistance in training from a specialized distance education institution or department of adult education.
The training of trainers should take place well before the start of the programme to enable them to make a practical input into the planning process. In order to maximize the cost-effectiveness of a workshop, trainers should receive a copy of the modules and *Trainer’s Guide* in advance and have time to work through them and note any problems or queries.

**Support**

Trainers will require continuing support throughout the implementation of the programme through regular contact with the coordinator and other trainers. Formal reports by trainers may not provide a complete picture of how well the programme is operating and informal contact is an important means of monitoring the programme, identifying any problems trainers may be experiencing and helping them to resolve them. The coordinator should arrange meetings with trainers on as regular a basis as possible, keep in touch with progress by telephone and encourage trainers to maintain informal contact with each other.

**THE SUPPORTER**

The distance learning approach necessarily means that learners will have to take more personal responsibility for their own learning than in conventional courses. They are not required to attend lectures at specific times, but instead are asked to work through the learning materials on their own. They are asked to undertake activities for which there are not necessarily any right or wrong answers and to review and suggest ways of improving systems and procedures in their own workplace. They are even expected to assess their own progress.

Some learners respond to this challenge enthusiastically, valuing the increased control over their own learning that it offers them. Others find it more difficult to adjust to little face-to-face contact with a trainer or to the increased self-discipline and motivation required for independent study. They may lack confidence in their ability to acquire new knowledge and skills, particularly if they completed their basic training several years ago and have not had any opportunities for further training. They may feel embarrassed about acknowledging any difficulties they are experiencing in understanding the material or studying independently. They may also be reluctant to evaluate current procedures and suggest improvements in case they are seen as being critical of established practices.

For this reason, it is essential that all learners have access to a supporter – someone within their own workplace who can provide ongoing support and assistance as they work through the learning materials. A supporter is also needed to monitor their progress, actively provide encouragement and reassurance and identify any problems that they are experiencing so that they can be resolved before the learner loses confidence and becomes demotivated.

**The role of the supporter**

The support needs of learners will vary considerably and it will take some time for the supporter to identify the particular kinds of assistance most needed by each individual learner. In general, however, the role of the supporter will involve:
1. Informing the learner about how the programme operates and advising on how to work through the modules and complete the activities and action plans.

2. Identifying the learner’s individual training needs and priorities.

3. Ensuring that adequate time has been allocated for study.

4. Meeting the learner on a regular basis to review their progress and providing any additional teaching that may be needed on topics they do not understand.

5. Supervising their practical work, where feasible.

6. Giving encouragement and constructive feedback on their progress to maintain interest and motivation and prevent any feelings of isolation.

7. Recognizing any worries or difficulties that the learner may be experiencing in adjusting to distance learning and helping them to overcome them.

8. Discussing the findings from their work on the activities, action list and action plan for each module.

9. Providing practical support for the implementation of any recommendations that are agreed to be realistic and feasible.

10. Reporting on the learner’s progress to their manager and trainer.

11. Contributing to programme monitoring and evaluation.

**Selection**

Since supporters play a crucial role in a distance learning programme, learners need to be able to build a good relationship with their supporter and feel comfortable about discussing their work with them. The motivation and interpersonal skills of the supporter will be as important as their technical expertise. Ideally, the supporter should be the learner’s supervisor or another senior colleague with more advanced qualifications and experience. They should also meet the following criteria:

- commitment to training and a positive attitude towards distance learning
- good management and organizational skills
- strong interpersonal communication skills
- knowledge of national and local policies
- easily accessible to the learner
- sufficient time to devote to their role as supporter.

Some learners undertaking this programme will have easy access to suitably qualified and experienced senior staff who can act as their supporter during their study, particularly in large centres such as a regional blood transfusion service where there may be a member of staff with specific responsibility for training or several senior staff who provide on-the-job training as part of their role. In many cases, however, there will be little choice about who should act as the supporter.
Many of the staff who most require training will work in small hospital blood banks under limited supervision. Even if there is no senior laboratory technician, it is not realistic to expect learners to undertake a period of prolonged study in relative isolation without access to someone who can provide assistance whenever they encounter any problems. In these circumstances, the need for a supporter becomes even greater and it will be necessary to arrange for another member of staff, such as the medical superintendent, to act as the supporter. Even though non-technical personnel may not be able to provide any additional teaching that may be needed or supervise the learner’s practical work, there are a number of other important aspects of the supporter’s role that do not require specialist expertise. In these cases, the trainer will need to provide a higher level of support and more frequent contact.

**Training**

Like trainers, supporters are unlikely to have previous experience of distance learning and will need to be thoroughly briefed on:

1. The organization of the programme.
2. Their roles and responsibilities as supporters.
3. Monitoring the learner’s progress.
4. Providing additional teaching and constructive feedback.
5. Supervising learners’ practical work.
6. Providing non-academic guidance and counselling.
7. The assessment system.
8. Record-keeping and reporting requirements.

A workshop is the preferred approach to the training of supporters since it provides an opportunity for discussion on how they might most effectively provide support to learners. However, a flexible approach will be needed as there may be considerable variations in their knowledge, skills and professional experience. Organizing training workshops for supporters may also present practical problems in terms of time and cost constraints, particularly for those who work in remote centres. If workshops are not feasible, trainers should visit participating centres in the areas for which they are responsible for individual briefing sessions with supporters and their managers, as well as with learners.

Where resources permit, each supporter should be given a copy of the learning materials before being trained so they can familiarize themselves with the content and approach and ensure that their own knowledge is up-to-date. If this is not possible, they should have an opportunity to read the modules before passing them on to the learner for whom they are responsible.

**Support**

Many supporters will have little experience of training and may lack confidence in their ability to support learners, particularly if they have had
no specialized training in blood banking or recent updating. They may be reluctant to reveal any deficiencies in their own knowledge or skills or be especially concerned about the non-academic aspects of their role. They will need reassurance that there is someone with whom they can discuss any problems or difficulties and ask for help or advice.

As well as clearly written guidelines on their role, supporters will need regular contact with the trainer or programme coordinator and contact with other supporters at periodic intervals. This will help to maintain their confidence, motivation and commitment, and strengthen their ability to provide effective support to learners. Trainers should be prepared to devote considerable time in the early stages of the programme to ensuring that supporters are working effectively and providing any further training or support that may be needed.
Supporting learners

Distance education institutions throughout the world have found that learners have a number of common needs that must be met by an appropriate support system if they are to study effectively. This section identifies some of these needs and considers various methods of learner support.

THE IMPORTANCE OF THE LEARNER SUPPORT SYSTEM

One of the concerns sometimes expressed about distance learning programmes is that they tend to have higher failure and drop-out rates than conventional courses. If this is true, it is most likely that there are weaknesses in either or both of the two key elements of a programme:

- the learning materials
- the learner support system.

The modules that comprise Safe Blood and Blood Products were written by subject experts and were thoroughly reviewed by international specialists in transfusion medicine during the developmental stages. You should therefore be able to feel confident about the quality of the learning materials, although they should be reviewed before use to ensure that they are consistent with national policies and procedures and to identify any supplementary materials that may be useful.

The modules were designed to provide learners with as much guidance and support as possible by encouraging them to:

- assess their knowledge, skills and experience in relation to the module objectives and identify their own learning priorities
- make a realistic study plan
- monitor their own progress through the progress checks, activity checklists and self-assessment questions and answers
- discuss their work on the modules with their supporter and other colleagues.

However, the modules alone can only provide support in a general sense. An effective system is needed to ensure that learners receive individualized guidance, feedback and support on a regular basis throughout their period of study.
LEARNERS’ SUPPORT NEEDS

Distance learners have a range of support needs. Some of these will be common to anyone undertaking a course of study, but others will relate specifically to the distance learning approach, especially if it is new to them.

In a conventional course, learners have many opportunities to get feedback on their progress, ask questions about anything they do not understand and talk to their tutor or other students about any problems they are experiencing. In a distance learning programme where direct contact with the trainer is limited, it is necessary to create different kinds of opportunities for dialogue and support. While distance learners’ needs for guidance and support vary between individuals and at different stages of their study, it is likely that they will need support in the following areas during the course of the programme.

Orientation

It is important that learners fully understand what the programme will entail, what support they can expect and how much work they will need to undertake on their own. In addition to a written Study Guide, all learners should receive an in-depth orientation on the programme before they start working through the modules and have an opportunity to ask questions about any aspect of the programme they are unsure about. Clear guidance should be provided about the following issues.

1. How the programme is organized.
2. What they can expect to gain from the programme, both personally and professionally.
3. What certification or accreditation the programme offers.
4. Whether any costs are involved.
5. The role of their trainer and supporter and how to use them effectively.
6. The time-scale for the programme and the frequency of meetings, tutorials and practical sessions.
7. How and when they will be assessed.

Where there are a number of learners in the same locality, it may be feasible for the trainer to hold a group orientation session. If this is not possible, orientation can be provided through individual visits by the trainer or by the learner’s own supporter.

In addition, it is recommended that the supporter or, where possible, the trainer works with each learner to:

- assess his or her individual learning priorities
- agree learning targets
- develop a study plan to meet those targets.

Section 4 of the Trainer’s Guide gives a more detailed breakdown of the preparation of learners, as well as an example of a study plan.
Maintaining motivation

The distance learning approach generally demands a higher level of commitment and self-discipline than conventional training because learners have to take more responsibility for organizing their own study. It is therefore important to identify the factors that may help to maintain their motivation. These may include:

- an awareness of their own training needs and the areas on which they particularly need to concentrate
- a commitment to continuous quality improvement in their work
- appreciation of the opportunity for further training, particularly for those in remote areas who currently have limited access to conventional training courses
- a qualification that will improve their chances of career advancement
- the support of their employer, supervisor, colleagues and family
- formal recognition of their involvement in the programme through the allocation of time for study
- encouragement from their senior colleagues to identify any weaknesses in systems and procedures and suggest ways of improving them
- opportunities to make contact with others studying the programme so that they can form peer support groups.

It is important to recognize how the organization of the national blood programme may have a direct effect on individuals’ motivation to continue their professional development. If there is no established career structure in blood transfusion and they have little control over whether they will be transferred out of blood banking or there is little prospect of promotion, motivation may be low because they can see no benefit from further training.

Many staff, particularly older employees, may lack confidence in their ability to acquire new knowledge and skills, particularly if they have had no further training or updating since completing their basic training. Some people find it difficult and even stressful to study without the structure provided by a timetable and regular, face-to-face contact with a tutor and other students. They will need a higher level of encouragement and reassurance through frequent contact with their supporter to monitor their progress, give feedback and provide practical help in dealing with any problems that affect their study. Problems are often personal and individual, and may include:

- insufficient time for study, perhaps because of conflicts arising from work or personal commitments
- poor study skills or techniques for studying independently
- problems in understanding certain topics in the modules
- a lack of support from their colleagues.

Regular and timely feedback from the supporter and trainer is essential, but it is important to recognize that feedback involves more than simply giving marks for tests or examinations. Trainers and supporters should comment on strengths as well as weaknesses and do so in a constructive way. Praise for good work, additional teaching on difficult or unfamiliar topics and help in overcoming problems are all vital in maintaining motivation.
Applying theory to practice

The modules emphasize the importance of the active application of knowledge to everyday practice. In order to achieve this, learners will need support in the following areas:

■ relating what they are learning to their everyday work through discussions with their supporter and other colleagues
■ developing and implementing realistic action plans
■ constructive discussion of their suggestions for improvements.

Assessment of learning

Formal assessment is likely to be a source of anxiety for learners, particularly where opportunities for promotion or a salary increase may depend on achieving good results. The modules all encourage self-assessment, but additional help may be necessary in the following areas:

■ making effective use of feedback from their supporter and trainer
■ preparing assignments and project work for assessment
■ preparing for examinations and workplace assessment.

Experience shows that the quality of support provided in all these areas directly affects motivation and the effectiveness of individual learning. Poor support systems are reflected in poor progress and high drop-out rates which demoralize individuals and reduce the cost-effectiveness of a distance learning programme.

METHODS OF LEARNER SUPPORT

The most viable methods of learner support will depend on a number of factors, such as the location of study centres, the transportation system and the cost and reliability of postal and telecommunications systems.

A combination of the following methods is likely to be needed to ensure that learners have regular contact with their trainer, as well as continuing support at local level.

1. Regular meetings between the learner and the supporter and supervised practice, where the supporter is qualified to provide this.

2. Correspondence between the trainer and the learner by mail, fax or e-mail to:
   ■ provide information
   ■ monitor progress
   ■ provide additional teaching, where required
   ■ provide feedback.

3. Scheduled telephone tutorials conducted by the trainer or telephone counselling to deal with any problems that may have arisen.

4. Individual tutorials during visits by trainers to the learners for whom they are responsible.
5 Group meetings and tutorials at a study centre for learners in the same locality.

6 Practical training sessions at the study centre.

7 Peer support and study groups where groups of learners in the same locality meet or communicate independently of their trainer and supporters.

The frequency and duration of tutorials and practical sessions held in study centres will depend on the distances involved and the costs of transport. In some areas, it may be possible to hold meetings on a regular basis, perhaps monthly. Where learners are spread out over a large area, longer meetings can be held less frequently, although it will then be necessary for the trainer to maintain closer contact by post or telephone.

It is important to remember that supervised practice can be built into routine daily laboratory procedures in the learner’s own workplace, provided that the supporter is adequately qualified and experienced. In small hospital blood banks where there are no senior laboratory technical staff, the trainer may need to visit learners on an individual basis for additional tuition and practical work.

Checklist 4 on p. 31 summarizes the main advantages and disadvantages of the various methods of learner support. In selecting methods to be used in the programme, it is important to draw on the expertise of people who already have experience of organizing a distance learning programme, either in a specialist institution such as an open university or in a university adult education department.
## Methods of learner support

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td><strong>Regular meetings between learner and supporter</strong></td>
<td>Qualified supporter may not be available</td>
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<tr>
<td>Opportunity for review of progress, additional teaching, direct feedback</td>
<td>Supporter may be poor teacher</td>
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<tr>
<td>and problem-solving</td>
<td>Supporter may be insufficiently motivated</td>
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<tr>
<td>Focusses directly on learner’s own working environment</td>
<td>Supporter may have little time available</td>
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<tr>
<td>Inexpensive</td>
<td></td>
</tr>
<tr>
<td><strong>Mail</strong></td>
<td>Dependent on reliable postal system</td>
</tr>
<tr>
<td>Inexpensive</td>
<td>Time-consuming to write individual letters</td>
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<tr>
<td>Time-saving to write standard letters</td>
<td>One-way method of communication</td>
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<tr>
<td>Provides a permanent record of communication</td>
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<tr>
<td>Confidential, if required</td>
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<tr>
<td><strong>Fax</strong></td>
<td>Expensive</td>
</tr>
<tr>
<td>Rapid method of communication</td>
<td>Access to fax machine required</td>
</tr>
<tr>
<td>Provides a permanent record of communication</td>
<td>Dependent on reliable telecommunications system</td>
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<tr>
<td><strong>E-mail</strong></td>
<td>Access to suitable equipment required</td>
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<tr>
<td>Inexpensive</td>
<td>Dependent on reliable telecommunications system</td>
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<tr>
<td>Rapid method of communication</td>
<td>One-way method of communication</td>
</tr>
<tr>
<td>Less formal than mail or fax</td>
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<tr>
<td><strong>Telephone tutorials and counselling</strong></td>
<td>Expensive</td>
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<tr>
<td>Rapid method of communication</td>
<td>Access to telephone required</td>
</tr>
<tr>
<td>Two-way method of communication</td>
<td>Dependent on reliable telecommunications system</td>
</tr>
<tr>
<td>Can be used for scheduled tutorials or immediate contact in case of problems</td>
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<tr>
<td><strong>Individual visits to learners by trainer</strong></td>
<td>Expensive</td>
</tr>
<tr>
<td>Opportunity for review of progress, additional teaching, direct feedback</td>
<td>Time-consuming to visit all learners</td>
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<tr>
<td>and problem-solving</td>
<td>Replacement staff may be needed during trainer’s absence</td>
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<tr>
<td>Focusses directly on learner’s own working environment</td>
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<tr>
<td>Opportunity for practical training</td>
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<tr>
<td>Opportunity for informal or formal assessment</td>
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<tr>
<td><strong>Group tutorials at study centre</strong></td>
<td>Expensive</td>
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<tr>
<td>Structured tutorials and opportunity for additional teaching on difficult topics</td>
<td>Time-consuming</td>
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<tr>
<td>Opportunity for informal or formal assessment</td>
<td>Small blood banks may be unable to release staff</td>
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<tr>
<td>Exchange of ideas, opinions and experience with other learners as well as trainer</td>
<td>Timing of tutorials may not be useful for learners who are ahead or behind in their studies</td>
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<tr>
<td>Interaction between learners helps to maintain motivation</td>
<td>Learners lacking confidence may find group discussion difficult</td>
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<tr>
<td><strong>Practical sessions at study centre</strong></td>
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<tr>
<td>Opportunity for practical demonstrations and additional teaching</td>
<td>Expensive</td>
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<tr>
<td>Opportunity for informal or formal assessment</td>
<td>Dependent on suitable facilities</td>
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<tr>
<td>Exchange of ideas, opinions and experience with other learners as well as trainer</td>
<td>Time-consuming</td>
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<tr>
<td>Interaction between learners helps to maintain motivation</td>
<td>Small blood banks may be unable to release staff</td>
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<tr>
<td><strong>Peer support and local study groups</strong></td>
<td>Timing of practical sessions may not be useful for learners who are ahead or behind in their studies</td>
</tr>
<tr>
<td>Informal support helps to reduce isolation and maintain motivation</td>
<td>May be different equipment in learners’ own workplaces</td>
</tr>
<tr>
<td>Inexpensive</td>
<td></td>
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<tr>
<td>Different contact methods can be used</td>
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**Advantages**

- Inexpensive
- Rapid method of communication
- Provides a permanent record of communication
- Less formal than mail or fax
- Two-way method of communication
- Can be used for scheduled tutorials or immediate contact in case of problems

**Disadvantages**

- Expensive
- Access to fax machine required
- Dependent on reliable telecommunications system
- One-way method of communication
- Access to suitable equipment required
- Dependent on reliable telecommunications system
- One-way method of communication
- Dependent on reliable telecommunications system
- Access to telephone required
Assessing learning

This section examines some of the issues to be considered in designing a system for the formal assessment of learning in a distance learning programme in blood safety.

REGULATION OF ASSESSMENT AND CERTIFICATION

The responsibility for the assessment of learning and certification normally rests with the Ministry of Health, a recognized training institution or a professional body responsible for professional registration or licensing. In some countries, however, the national blood transfusion service or its equivalent, such as the national Red Cross or Red Crescent Society Blood Programme, may be the most suitable agency to develop a formal assessment scheme.

As in any training programme, the opportunity to gain a certificate or other form of recognition will probably be the most important motivating factor for staff undertaking a distance learning programme in blood safety, particularly if it enhances their prospects of promotion or a salary increase. However, the value of a qualification will depend on whether it is seen to be comparable to one awarded on a conventional training course at a similar level. If a qualification is to be offered, therefore, the programme should be accredited by an approved awarding body and a well-regulated, standardized system should be established for the assessment of learning.

Where an accredited course at a similar level already exists, it may be possible to secure accreditation of the distance learning programme from the same institution or awarding body. If no comparable courses are available, it will be necessary to investigate the most appropriate form of accreditation and negotiate with a recognized awarding body.

THE PURPOSES OF ASSESSMENT

It is helpful to consider the various purposes of the assessment of learning because it helps to determine when and how it should be carried out.

A formal assessment scheme is important for the programme because it:

- defines standards to be met by successful candidates, thus contributing to raising and maintaining national standards in blood banking
■ provides concrete information for use in monitoring and evaluating the effectiveness of the programme

■ demonstrates the quality of the programme to government, other relevant authorities and funding agencies.

Assessment is also important for programme personnel because it:

■ helps them to monitor the progress of individual learners and indicates where additional teaching may be required

■ helps them to identify problems and weaknesses in relation to the programme: e.g. particularly poor results in one region may indicate that some trainers or supporters need further training.

Assessment is especially important for learners because it:

■ provides feedback on their progress

■ encourages them to recognize their own learning needs and to take more responsibility for meeting them

■ provides evidence of their improved knowledge and competence

■ provides successful candidates with a formal qualification that may lead to career advancement

■ helps to maintain motivation.

STAGES OF ASSESSMENT

Assessment often consists only of a final examination to test what has been learned. To be most effective, however, assessment should take place at three stages in a training programme:

1. Before the course to identify learning needs.

2. During the course to monitor progress and provide feedback.

3. At the end of the course to evaluate achievement.

Before the course

Pre-course assessment, sometimes known as ‘pre-testing’ or ‘diagnostic assessment’, is usually conducted informally and is used to identify individuals’ training needs and priorities, which will vary according to their initial training, experience and current responsibilities. Activity 2 in each module of the learning materials is specifically designed to assist in making an informal diagnostic assessment and provides a baseline for judging the individual learner’s progress.

During the course

Assessment that takes place during the learning process is often referred to as ‘formative assessment’ or ‘continuous assessment’. Both formal and informal methods can be used to evaluate learners’ knowledge, understanding and skills with the aim of:

■ monitoring their progress and identifying their strengths and weaknesses

■ providing them with feedback to aid in their subsequent learning and suggesting ways in which they might improve their performance
identifying areas where additional teaching or further study may be needed

helping them to prepare for formal examinations.

Group tutorials and practical sessions provide obvious opportunities for formative assessment, although it can also be undertaken by supporters. The activities and action plans that are built into each module are also designed to provide the learner and the supporter with a useful basis for discussion and assessment.

It is not essential for a score or marks to be given for an assessment conducted during the course, although it is becoming increasingly common for continuing assessment to count towards the final results. In addition, learners usually find it helpful to be able to compare their performance with examination standards. Where supporters are suitably qualified, their reports can also be formalized as part of the final assessment at the end of the course.

At the end of the course

Final assessment at the end of the course, sometimes referred to as ‘summative assessment’, is usually conducted on a formal basis by examination. It is used to evaluate:

- learners’ knowledge, understanding and ability to apply their knowledge to specific areas of practice
- their ability to perform defined tasks to specified standards.

Final assessment is also useful in identifying remaining knowledge and skills deficits and further training needs, particularly for unsuccessful candidates.

APPROACHES TO FORMAL ASSESSMENT

Two of the most common approaches to formal assessment are ‘norm-referenced’ assessment and ‘criterion-referenced’ assessment.

Norm-referenced assessment means that the pass standard is related to the average standard of other learners: for example, the best 70% of learners pass, even if some have scored very low marks, and the remainder fail.

Criterion-referenced assessment means that learners are assessed in relation to predefined standards and performance criteria: for example, the pass mark is set at 70% and all learners who score this mark pass the assessment.

Only the criterion-referenced approach is suitable in a training programme in blood safety because it is essential to ensure high standards of performance in all aspects of blood transfusion.

Standards of performance should always be realistic and attainable; it should be possible for learners to achieve these standards as a result
ASSESSING LEARNING

of undertaking the programme. It is also essential that the assessment method can be applied under the same, or very similar, conditions each time in order to ensure that the evidence being presented and judged is valid. All candidates must be treated equally, but this cannot be achieved unless there are clear and unambiguous criteria against which performance will be judged and all assessors are trained to apply them in a systematic and consistent way. Standard assessment protocols therefore need to be developed at national level to ensure that each learner is assessed against the same performance criteria. Each section of the modules contains specific learning objectives that can be used as a basis for defining criteria for assessment.

In all cases, performance criteria should state exactly what outcome is expected and how that outcome will be measured. In assessing practical work, for instance, a simple performance evaluation checklist could be used in conjunction with selected standard operating procedures (SOPs) to assess learners’ knowledge, understanding and skill in relation to these procedures. In order to be a valid measure, however, the same checklist and SOPs would need to be used to assess all learners and all assessors should be trained in its use.

Since the development of standards and performance criteria is a complex process, it is essential to involve people with extensive experience in designing an assessment scheme.

METHODS OF ASSESSING LEARNING

A number of methods can be used to assess learning, each of which has advantages and disadvantages in its ability to evaluate performance in relation to specified standards and criteria. It is therefore preferable to use a combination of approaches to assess knowledge, understanding and practical skills. The most commonly used methods include:

1. Written examination.
2. Practical examination.
3. Oral examination.
5. Assignments or project work, including work on the module activities and action plans.
6. Reports by the learner’s:
   - trainer
   - supporter
   - manager.

Since assessment should always be able to measure what it claims to measure, it is important to select the most appropriate method for the aspect of learning that is being examined. Written examinations can be used to assess knowledge, for example, but are not suitable for evaluating the performance of a practical task, such as a compatibility test.
Traditional examinations are commonly favoured in assessment. However, assessment methods, particularly those relating to vocational courses, are increasingly focusing on competence: that is, the ability to perform defined tasks to a specified standard of performance. The assessment of competence is concerned with what people can do in the day-to-day work environment rather than simply what they know.

The growing emphasis on competence has led to the wider use of alternative approaches to assessment, including observation of an individual’s routine work and project work, such as the development and implementation of the action plan that is part of each module. These approaches enable a comprehensive, integrated assessment to be made of an individual’s knowledge, understanding and skills in the particular setting in which they need to be applied, regardless of its size or scale of activities. In broad terms, for example, they would enable an assessor to evaluate competence in the following areas.

**Knowledge and understanding**
1. Has a satisfactory level of basic knowledge.
2. Interprets the results of the situation correctly, displaying appropriate knowledge and understanding.
3. Demonstrates knowledge of underlying principles when variations in action are required in untypical situations.
4. Shows ability to evaluate and learn from his/her experience.
5. Recognizes any deficiencies in his/her knowledge and understanding.

**Performance**
1. Assesses the situation correctly.
2. Selects appropriate actions.
3. Prioritizes actions appropriately.
4. Takes action at the appropriate time.
5. Uses the correct skills and techniques.
6. Applies the skills and techniques in the correct way.

**A TIME-FRAME FOR ASSESSMENT**

If certification and accreditation are sought, the assessment scheme will need to conform with the system used in existing training programmes and to comply with national standards. Most conventional courses follow a traditional model in which the length of the programme of study is fixed and formal assessments take place on the same dates throughout the country. Where learners are undertaking a course in addition to their normal work, however, some may be disadvantaged by having limited time for study. If there is a rigid time-scale for completion of the programme, they may focus simply on passing the final examination rather than on achieving higher
standards in their work. Since the ultimate objective of a distance learning programme in blood safety is to bring all staff up to a specified standard of performance, it may be appropriate to adopt a more flexible time-scale.

Many distance learning programmes set a minimum and maximum period for completion of the course to accommodate factors such as variations in the time available for study and differences in individual abilities and the pace of learning, particularly among people who have not studied for some years. For example, while the majority of learners might complete the programme within a specified minimum period (such as a year), they would have the option to spread their study over a longer time up to a maximum specified period of, perhaps, two years.

Where this more flexible approach is adopted, assessments take place on a regular basis, but candidates can choose when they undertake them. For example, formal examinations might be held every six months, and other kinds of assessment, such as workplace assessments, would be held at specified intervals during that period. Learners then choose to be assessed at a time that best suits their own circumstances. Those who find the course difficult or have other commitments limiting the time available for study could choose to be assessed at a later stage than those who are able to complete the course in the minimum specified period. This approach also enables learners to have periods of inactivity within the programme, if required, such as during maternity leave.

One advantage of this approach is that it offers more opportunities for non-traditional forms of assessment. The programme can also be more responsive to individuals’ styles and speed of learning and their personal circumstances and is likely to result in a higher proportion of successful candidates. The disadvantage is that it places more demands on trainers who must provide tutorial support to learners who are at different stages of their study. They would then need to repeat specific tutorials or practical sessions at regular intervals which learners would opt into when they were ready.

**QUALITY IN ASSESSMENT**

In order to ensure credibility and reliability, standardization and security must be built into all formal assessments, including reassessment. All assessors should be trained in the methods and standards to be used in assessment and should receive written guidelines. A system should be established to ensure consistency in marking between different assessors; for example, a random selection of examination papers should be marked by two assessors and all candidates who score a borderline pass or fail should be reviewed by a second assessor. A verification system must be transparent and open to external scrutiny and must follow clearly defined guidelines in order to ensure standardization. Quality control is an essential part of the assessment system.
Programme planning

This section examines some of the practical steps to be followed in planning a distance learning programme in blood safety.

PLANNING

The first step in planning the programme will be to identify the desired outcomes, both in the short-term and the long-term, and to plan a logical sequence of activities, identifying any actions that are dependent on others.

It is also important to anticipate any potential constraints in order to identify strategies to avoid or overcome them. It may be necessary, for example, to find ways of dealing with the following problems:

- a lack of government approval or financial support for the programme
- a lack of cooperation or coordination between the Ministry of Health, the blood transfusion service and other agencies involved in the development of the programme
- difficulty in communicating over a large geographical area, particularly in more remote regions
- the need to translate the modules into the national language of your country
- a shortage of suitably qualified and experienced trainers
- limited motivation by employees to undertake the programme because there is no clear career structure in the blood transfusion service.

The experience of countries that have already established successful programmes suggests that, while the sequence might vary, the following activities are important in establishing a strong foundation for the programme.

1. Build awareness and support for the establishment of the programme through briefing meetings and/or a national workshop for relevant agencies.

2. Secure government approval and support for the programme.

4. Conduct a training needs assessment.
5. Plan a pilot project.
6. Prepare a proposal and budget for submission to government and other potential funding agencies.
7. Implement and evaluate the pilot project.

**BUILDING AWARENESS AND SUPPORT**

In planning the programme, it is important to seek the assistance and support of agencies and institutions that are responsible for training so that the programme can be fully integrated into the national health training infrastructure.

Official approval and support will be required from the government, health authorities, regulatory bodies, professional bodies and all levels of the blood transfusion service, including the employers of potential learners. In addition, technical support may be needed in various aspects of programme planning and implementation, including the assessment of learning and the validation and accreditation of the programme.

**National workshop**

Since the use of distance learning for training in blood safety is relatively new, there may initially be little interest or doubts about its feasibility. In some countries, personal contact and small briefing meetings may be the most effective way of building awareness about the approach and convincing relevant agencies of its value as part of a wider training strategy. In others, it may be more appropriate to organize a national workshop for senior representatives of key agencies to promote the proposed programme and seek their support and assistance in its planning and implementation.

The information provided in this Guide for Programme Coordinators has been specifically designed to provide a basis for a national workshop of this kind and Checklist 5 on p. 40 suggests a draft programme for the workshop. Small group discussion will be an important means of actively involving participants and drawing on their ideas and experience and Checklist 6 on pp. 41–2 provides guidance on topics for group work. The overheads provided in the Toolkit can be photocopied on to overhead projector transparencies for use in workshop presentations while the checklists can be reproduced as handouts for participants.

**SECURING GOVERNMENT APPROVAL AND SUPPORT**

Securing official approval for the development of the programme from the Ministry of Health or a recognized national regulatory body will obviously be essential. In some countries, it may also be necessary to obtain the approval and support of other Ministries, such as Education, Finance & Planning or the Ministry of Defence in countries where the Armed Forces play a major role in the provision of health services. It is also important to seek government recognition of any qualification awarded for successful completion of the programme, particularly if it may be taken into account for promotion or salary enhancement.
National workshop on establishing a distance learning programme in blood safety

Draft Programme

1 Overview of current status and future trends in blood safety

2 Regional/provincial reports on current training provision
   - Existing programmes and facilities
   - Unmet training needs
   - Constraints on expansion of training

3 Distance learning
   - The distance learning approach
   - The WHO distance learning materials
   - Overview of national activities in distance education
   - Group work: Understanding the distance learner
   - Reports and discussion on group work

4 Programme structure
   - Programme structure
   - Study centres
   - Participating centres
   - Group work: Planning a distance learning programme in blood safety
   - Reports and discussion on group work

5 Programme personnel
   - The role of the programme coordinator
   - The role of the trainer
   - The role of the supporter
   - Group work: Selecting, training and supporting programme personnel
   - Reports and discussion on group work

6 Supporting learners
   - Learners’ support needs
   - Methods of learner support
   - Group work: Establishing a learner support system
   - Reports and discussion on group work

7 Assessing learning
   - Areas for assessment
   - Methods of assessment
   - Group work: Planning an assessment scheme
   - Reports and discussion on group work

8 Programme monitoring and evaluation
   - Areas for monitoring and evaluation
   - Methods of monitoring and evaluation
   - Group work: Planning monitoring and evaluation
   - Reports and discussion on group work

9 Action planning
   - Development of action plan and implementation schedule
   - Identification of resource requirements
National workshop on establishing a distance learning programme in blood safety

Topics for group discussion

1 Understanding the distance learner
   1 What factors might motivate individual employees to participate in a distance learning programme in blood safety?
   2 What potential problems do individuals face who study by distance learning?
   3 What issues need to be considered when planning a distance learning programme in order to prevent or minimize these potential problems?

2 Planning a distance learning programme in blood safety
   1 What is the most appropriate structure for a distance learning programme in blood safety?
   2 Who should be represented on a programme Advisory Group?
   3 What criteria should be used for the selection of:
      ■ Study centres
      ■ Participating centres
      ■ Learners?

3 Selecting, training and supporting programme personnel
   1 What criteria should be used for the selection of:
      ■ Programme coordinator
      ■ Trainers
      ■ Supporters
   2 Training
      ■ What training will trainers and supporters need?
      ■ Who should provide this training?
      ■ How many days of training should be provided?
   3 What ongoing support will trainers and supporters need once the programme has started?

4 Establishing a learner support system
   1 What are the advantages and disadvantages of the following methods of learner support?
      ■ Regular meetings between the learner and supporter
      ■ Mail
      ■ Fax
      ■ E-mail
      ■ Telephone tutorials and counselling
      ■ Individual visits to learners by trainer
      ■ Group tutorials at a study centre
      ■ Practical sessions at a study centre
      ■ Peer support and local study groups
   2 What other methods of learner support could be used in a distance learning programme in blood safety?
5 Planning an assessment scheme

1. What aspects of learners’ work on the programme should be assessed?
2. What methods should be used to assess them?
3. When should assessment take place?
4. Who should conduct the assessment?
5. How can the assessment scheme be linked into existing assessment systems and qualifications?
6. What recognition should be given for successful completion of:
   - An individual module?
   - The complete programme?

6 Planning monitoring and evaluation

1. What aspects of the programme should be monitored and evaluated?
2. What are the most appropriate methods of monitoring and evaluating each of these aspects of the programme?
3. Who should conduct the monitoring and evaluation?
4. When should evaluation take place?

7 Action planning

1. What activities need to be undertaken, in what sequence and by whom in order to set up the programme?
2. What technical support will be required?
3. Where might this be obtained?
4. What financial resources will be required?
5. What sources of financial support might be available?
6. What are the potential problems and constraints in setting up the programme? How can they be avoided or minimized?
In-depth planning will be required before a proposal and budget can be submitted for official approval and support. However, it is important to sensitize the Ministry of Health and other relevant Ministries and statutory authorities to the programme at an early stage and to seek their involvement from the beginning of the planning process.

**SETTING UP AN ADVISORY GROUP**

The formation of a national Advisory Group or Steering Committee will be invaluable in securing the approval and support of government and other agencies as well as shaping the development and management of the programme, from the initial planning of a pilot project to the accreditation and implementation of a nationwide programme.

The terms of reference for an Advisory Group might, for example, include the following roles.

1. To promote awareness of the role that distance learning can play in a national training programme in blood safety.
2. To facilitate the official approval and support of the programme by the Ministry of Health and other relevant authorities, including professional and regulatory bodies and education and training institutions.
3. To advise on the planning and implementation of the programme.
4. To assist in securing financial and technical support from national and international agencies.
5. To monitor the progress of the programme and advise on appropriate action.
6. To advise on relevant technical and professional developments and their implications for the programme.
7. To facilitate the validation and accreditation of the programme by an approved awarding body or institution.

**Membership**

The Advisory Group will benefit from a broad membership that includes representatives of:

- the national blood transfusion service and, where appropriate, state, regional or provincial blood transfusion services
- the Ministry of Health and other health authorities and relevant government departments
- the authority responsible for the regulation of training and the professional registration or licensing of blood transfusion service personnel
- universities and technical training institutions involved in the basic training and continuing education of blood transfusion service staff
professional bodies, such as the Institute of Medical Laboratory Technology
- non-governmental organizations involved in any aspect of blood transfusion, such as the national Red Cross or Red Crescent Society or voluntary blood donor associations
- a distance education institution, such as an open university or a university department of adult or distance education
- programme personnel, including representatives of trainers and supporters.

TRAINING NEEDS ASSESSMENT

Conducting a training needs assessment is an important means of assessing the scale on which the programme will need to operate and identifying the categories of personnel who should be given priority when selecting candidates to undertake the programme. It will also provide important information on the level and nature of support that learners will need from trainers and supporters once the programme has started.

In small countries, it may be possible to undertake a systematic review of the training needs of all staff. In most countries, however, it will be necessary to focus on a representative sample of personnel at different levels of the health care system, ranging from the national blood transfusion service to small hospital blood banks.

Both quantitative and qualitative data will be required to build an accurate picture of national training needs and priorities. At a minimum, the following information will be needed about each grade of personnel involved in blood transfusion, including staff responsible for donor recruitment and blood collection as well as laboratory technical staff.

1. Number of personnel occupying this grade.
2. Number of personnel who do not have the qualifications now required for entry into this grade.
3. Number of personnel requiring specialized training or updating.

This simple quantitative data should then be supplemented with more in-depth information on training needs and priorities for each grade of staff. This can be obtained by using a combination of the following methods.

1. Job analysis to identify key elements of the functions of different grades of staff at different levels of the health care system.
2. Discussions with teaching staff in training institutions.
3. A survey by questionnaire or interviews with a sample of employers, supervisors and staff to identify training priorities.
4. Practical tests or observation of routine practical work to identify common deficiencies in knowledge and skills.
5. Review of records and reports to identify problem areas.

Once the training needs assessment has been completed, it will be possible to estimate the number and types of personnel who would most benefit from
training, either through the distance learning programme or other training courses. The assessment may reveal, for example, that priority should be given to staff working without supervision in small hospital blood banks or older staff whose initial training was inadequate and who have had no further training to bring them up to the required standards.

Training priorities may also be determined by developments in national policies: for instance, many countries are working towards the elimination of paid or family/replacement blood donor systems and the recruitment only of voluntary non-remunerated donors. In such cases, the priority may be to focus initially on staff responsible for donor recruitment and blood collection, particularly where this is undertaken by laboratory technical staff.

The selection of learners will depend on national training priorities, but will need the input of people at local level to ensure that the most suitable candidates are selected. Two key issues also need to be considered.

1. Should participation in the programme be compulsory?
2. Should priority be given to specific categories of staff or should all staff be eligible to participate?

**PLANNING A PILOT PROJECT**

As with any new programme, it is important to test out its various components before implementing it on a wide scale in order to identify any potential problems and plan any modifications that may be needed.

The following issues will need careful consideration in planning a pilot project.

1. The information that is needed from a pilot project and the purpose to which it will be put: for example, to test out the level of support required by learners or to seek approval and funding for a larger-scale programme.
2. The scale of testing envisaged and the extent to which the programme’s infrastructure will need to be in place in order to test effectively.
3. The time-scale needed to test the different components of the programme before planning any modifications or expansion.
4. The costs of a pilot project and potential sources of funding.

Section 8: *Programme Monitoring and Evaluation* suggests some of the areas that might be evaluated in a pilot project or larger-scale programme.

A pilot project need not be carried out on a large scale but, ideally, should involve a representative sample of trainers, supporters and learners to assess whether an appropriate infrastructure has been established.

Even if it is not possible to conduct a structured pilot project, perhaps because no funding is yet available, some elements of the programme can still be tested by selecting a small number of staff in the national blood transfusion service or other easily accessible centres and asking them to work through the learning materials, with support from their supervisor.
This will provide some insights into the amount of support that learners will need and will highlight any problems they might face that need to be taken into account in the planning process.

**Preparing a proposal and budget**

Success in securing funding for the programme will be dependent on the submission of a well-documented proposal which outlines:

1. The background and rationale for the programme.
2. The aims and objectives of the programme.
3. The anticipated outcomes of the programme.
4. The structure and operation of the programme.
5. Staffing requirements.

Securing funding may be easier if the initial request is for financial support of a small-scale pilot project to test out the feasibility of the distance learning approach and its cost-effectiveness in comparison with conventional training programmes. Once this has been demonstrated, requests for larger-scale funding may be considered more sympathetically.

Distance learning is found to be a cost-effective method of training because recurrent costs are generally lower than in conventional courses. Since learners are absent from their workplace for only a limited period of time, the costs of travel and subsistence, replacement staff cover and the use of specialized training facilities for group tutorials and practical sessions should be substantially less than in conventional training programmes. Against this must be balanced the capital investment required in the learning materials and the training of programme personnel.

**Capital costs**

Capital expenditure is likely to be incurred in:

1. A national workshop to promote the development of the programme.
2. The purchase or reproduction of the modules.
3. The development of additional resource materials, such as a Study Guide, and assessment materials.
4. The training of trainers, supporters and assessors.

**Recurrent costs**

The main recurrent costs for which a budget will be required are:

1. Programme personnel:
   - salaries or honoraria
   - training
   - travel and subsistence.
2 Programme administration:
- distribution of the learning materials
- communications: postage, telephone, fax, e-mail, radio
- secretarial/administrative support.

3 Orientation meetings for learners and employers.

4 Group tutorials and practical sessions:
- travel and subsistence
- replacement staff cover
- honoraria for additional resource persons
- use of facilities and equipment
- reagents.

5 The assessment system.

6 Programme monitoring and evaluation.

Sources of funding
In some countries where a programme has already been established, the Ministry of Health is the sole source of financial support. In others, the costs are shared by central government and local health authorities.

Non-governmental organizations involved in blood transfusion, such as the national Red Cross or Red Crescent Society or voluntary blood donor associations may be prepared to invest in the programme while national service and philanthropic organizations, such as the Rotary Club and Lions Club, may be willing to fund specific elements, such as the purchase of the learning materials. Local commercial companies could also be encouraged to provide sponsorship through the national blood transfusion service.

In addition to national sources of funding, support could be sought from international agencies such as:

1 International non-governmental organizations, such as:
   - International Society of Blood Transfusion (ISBT) Education Committee
   - International Federation of Red Cross and Red Crescent Societies Blood Programme.

2 United Nations agencies, such as:
   - United Nations Joint Programme on HIV and AIDS (UNAIDS)
   - United Nations Development Programme (UNDP).

3 Bilateral government agencies from resource-rich countries which support projects in developing countries.

4 Multilateral agencies, such as:
   - World Bank
   - European Commission
   - Council of Europe.

Your WHO Country Representative or Regional Office may be able to advise on possible sources of technical and financial support.
Programme monitoring and evaluation

This section describes a systematic approach to monitoring and evaluation that will contribute to the continuous improvement of the programme.

MONITORING AND EVALUATION

A well-designed system of monitoring and evaluation is essential to maintain quality standards in all aspects of the programme and ensure its efficiency and effectiveness. It is also likely to be a requirement by external institutions and organizations, such as the Ministry of Health, statutory authorities and funding agencies.

Monitoring

Monitoring or ‘formative evaluation’ is defined here as a continuous process that takes place during the implementation of the programme in order to:

- assess progress in achieving its defined objectives
- identify any problems
- indicate any action needed to modify and improve the programme.

It typically aims to answer the questions ‘How well are we doing?’ and ‘How can we do it better?’ Most of the information required for programme monitoring will be generated by regular analysis of records and reports.

Evaluation

Evaluation or ‘summative evaluation’ is defined here as the systematic collection, analysis and interpretation of information at specific intervals, such as at the end of a pilot project or each year of operation of the programme, in order to judge its effectiveness. It typically aims to answer the questions ‘Were the objectives achieved?’ and ‘Is it worth continuing?’

While much of the information required for evaluation of the outcomes of the programme can be obtained from reports and records, it is usual to supplement this with data from additional sources such as a sample survey by questionnaire or through focus group discussions.
PLANNING EVALUATION

An evaluation plan should be developed before the programme starts in order to ensure that evaluation is undertaken in a systematic way. It will also make it easier to identify the baseline information that is required and design a record-keeping and reporting system that will generate much of the information required for routine monitoring.

Key questions to be addressed when developing an evaluation plan include:

1. Who needs information from evaluation and for what purpose?
2. What aspects of the programme should be evaluated?
3. How will the data be collected?
4. Who will analyse and interpret the data?
5. How much time and what skills will this require?
6. When should data collection and analysis take place?
7. In what form will the findings be presented?
8. How will the findings be used?

INDICATORS FOR EVALUATION

Since the purpose of evaluation is to assess the effectiveness of the programme, it is necessary to specify measurable indicators of the extent to which its objectives are being achieved. These can be stated in terms of both ultimate and intermediate outcomes.

The ultimate objective of the programme, for example, will be to improve the safety and adequacy of the supply of blood and blood products by:

1. Reducing the reliance on paid or family/replacement blood donors and increasing the number of voluntary non-remunerated blood donors from low-risk populations who give blood regularly.
2. Improving the quality of laboratory practice in the screening of all donated blood in order to prevent the transmission of infectious agents via transfusion.
3. Improving the quality of laboratory practice in blood grouping, compatibility testing and the storage and transportation of blood and blood products.

Before the programme can be successful in improving the safety and adequacy of the blood supply, however, it must reach staff requiring training and these staff must then respond by applying what they have learned in their everyday work. Intermediate outcomes, such as an increase in the number of people who have access to training through the introduction of programme or who complete it successfully, can serve as partial measures of effectiveness.

The main advantage of using intermediate outcomes for programme evaluation is that it is easier to measure and interpret them. Measuring
overall improvements in blood safety is a difficult and expensive task which involves collecting data on a number of variables. Even if it is possible to measure them, it may be difficult to demonstrate what caused them and, in particular, the extent to which any improvements were due to the implementation of the distance learning programme. However, even though data on ultimate outcomes may not be available for several years, evaluating intermediate outcomes can provide some indication of the effectiveness of the programme.

In broad terms, the following key areas might be selected for evaluating the effectiveness of the programme.

1. The suitability of the structure of the programme.
2. The effectiveness of the learner support system.
3. The suitability of the distance learning materials.
4. The acceptability of the programme.
5. The cost-effectiveness of the programme.
6. The impact of the programme on learners’ standards of performance.

Checklist 9 on p. 51 suggests some indicators that might be used in programme evaluation.

**SOURCES OF DATA FOR MONITORING AND EVALUATION**

The kinds of information that will be most useful for monitoring and evaluation will include:

- quantitative data, such as the number of learners, the number of tutorials held and the results of assessment
- qualitative data, such as feedback from learners on the effectiveness of the learner support system and areas where they needed more support.

A combination of data collection methods will be needed to generate both kinds of information. Possible sources of data include:

1. Records and reports from:
   - trainers
   - supporters
   - learners’ managers or supervisors.
2. Assessment results.
3. Questionnaires.
4. Interviews or focus group discussions.
5. Informal feedback.
6. Observation.
7. Periodic evaluation meetings at each level of the programme: national, regional and local.
Indicators for monitoring and evaluation

1. Is a suitable structure for the programme in place?
   *Indicators*
   1. Official approval and support from the Ministry of Health and other statutory authorities
   2. Availability of adequate budget
   3. Appointment of programme coordinator
   4. Establishment of Advisory Group
   5. Availability of adequate number of trainers
   6. Availability of adequate number of study centres with suitable facilities
   7. Availability of a supporter for each learner

2. Is the learner support system effective?
   *Indicators*
   1. Adequacy of training provided for:
      - trainers
      - supporters
   2. Adequacy of time devoted to the programme by:
      - trainers
      - supporters
   3. Adequacy of tutorial support and practical training provided for learners by:
      - trainers
      - supporters
   4. Main problems faced by learners

3. Are the distance learning materials suitable?
   *Indicators*
   1. Adequacy of the supply of distance learning materials
   2. Relevance of the materials to identified training needs
   3. Ability of learners to use the materials effectively for self-study
   4. Need for any additional resource materials

4. Is the programme acceptable?
   *Indicators*
   1. Validation of the programme by an approved institution or professional body
   2. Acceptability of the distance learning approach to:
      - learners
      - employers

5. Is the programme cost-effective?
   *Indicators*
   1. Number of learners admitted to the programme/total number requiring training
   2. Percentage of learners successfully completing the distance learning programme/conventional training programmes at a similar level
   3. Costs per learner in the distance learning programme/conventional training programmes at a similar level

6. Has the programme had a positive impact on learners’ standards of performance?
   *Indicators*
   1. Increase in the number of voluntary non-remunerated blood donors
   2. Increase in the number of repeat donors
   3. Increase in the number of units of blood tested for transfusion-transmissible infections in accordance with the national policy on screening
   4. Reduction in the number of units of blood discarded because of evidence of infectious disease markers
   5. Reduction in the number of errors in blood grouping and compatibility testing
   6. Reduction in the number of units of blood discarded because of deterioration during storage and transportation
Records
Since much of the data needed for monitoring and evaluation can be obtained from routine records, it is important that the documentation used in the programme should make it easy to collate and analyse the information required. Records should be simple, require as little time as possible to complete and present information in an easily accessible form. Although the requirements of a record-keeping system will differ in each country, standardized records will need to be kept at each level of the programme by:

- the programme coordinator
- supporters
- trainers
- study centres.

Reports
Reports should provide a summary of the records held at each level of the programme, but should also include qualitative information on issues such as the progress of learners, the competence of programme personnel and the impact of the programme.

The standardization of reporting is essential to ensure that comparable information is obtained from different parts of the country. As with records, standardized report forms are easier and less time-consuming to complete.

Programme personnel should be encouraged to report immediately on any problems encountered and to share information on how they tried to resolve them. Informal methods of reporting are likely to be more useful here.

Checklist 10 on p. 53 suggests some of the kinds of data that might be collected routinely through records and reports.

ANALYSIS, INTERPRETATION AND PRESENTATION OF DATA

While much of the raw data required for evaluation may be readily available from records and reports, it then needs to be analysed or, at a minimum, collated, so that it can be interpreted and judgements made about the effectiveness of the programme and how it might be improved. The level of analysis that is required depends on the kind of data that is available and the needs of the users of evaluation. Open-ended comments from a focus group discussion with learners, for instance, may simply need to be typed up so they can be read easily or there may be so many that someone needs to analyse the responses and organize them into categories or topics. Questionnaire responses will need to be tallied and perhaps some simple statistics prepared, either manually or on computer.

If a large quantity of data has been collected from records and reports, it may be better to analyse only a proportion of it rather than attempting to handle an overwhelming volume of information that will take months to analyse and that evaluation users will not be able to absorb. It is important to schedule time for data analysis and interpretation and ensure that the findings are made available at times which enable them to be used in the cycle of programme planning and implementation.
Data from records and reports

1 Learners
   ■ Number of learners by location, job and grade
   ■ Personal details, including age, sex, previous training, qualifications, experience, job title
   ■ Name of learner’s supporter and manager
   ■ Agreed training needs and priorities
   ■ Study plans
   ■ Reports on progress
   ■ Action plans and a record of outcomes
   ■ Any problems experienced by individual learners and action taken to resolve them

2 Supporters
   ■ Number of supporters by location, job and grade
   ■ Personal details, including qualifications, experience, job title
   ■ Staff development: training workshops attended
   ■ Name of learner for whom they are responsible
   ■ Number of hours worked
   ■ Correspondence and notes on meetings and telephone contacts
   ■ Any problems experienced by supporters and action taken to resolve them
   ■ Trainers’ reports on competence

3 Trainers
   ■ Number of trainers by location, job and grade
   ■ Personal details, including qualifications, experience, job title
   ■ Staff development: training workshops attended
   ■ Number and names of learners and supporters for whom they are responsible
   ■ Number of hours worked
   ■ Correspondence and notes on meetings and telephone contacts
   ■ Any problems experienced by trainers and action taken to resolve them
   ■ Programme coordinator’s reports on competence

4 Study centres
   ■ Type of institution: e.g. blood transfusion service, reference laboratory, hospital, training institution
   ■ Name of director and relevant senior staff
   ■ Facilities, equipment and accommodation available for use in the programme

5 Group tutorials and practical training
   ■ Number, date and location of tutorial sessions held
   ■ Number, date and location of practical sessions held
   ■ Participants
   ■ Resource persons
   ■ Objectives and agenda
   ■ Report and evaluation

6 Assessment of learning
   ■ Number of assessors by location, job and grade
   ■ Personal details of assessors, including qualifications, experience, job title
   ■ Staff development: training workshops attended
   ■ Arrangements for formal assessment, including dates of examinations and workplace assessment
   ■ Numbers of learners sitting examinations and receiving workplace assessment
   ■ Assessment results: number and grade of passes; percentages of course passes and failures
   ■ Any problems experienced by assessors and action taken to resolve them
USING THE FINDINGS FROM MONITORING AND EVALUATION

Since the requirements of users of evaluation will vary, it is important to identify the kind and amount of information that they need since this will determine the way in which it should be presented. The Ministry of Health, other relevant statutory authorities and funding agencies, for example, are likely to require a relatively brief report that enables them to judge the efficiency and cost-effectiveness of the programme in order to decide whether to continue or expand funding.

The programme coordinator and Advisory Group will need detailed information on all aspects of the programme in order to guide them in future planning. Whatever the explicit purpose of an evaluation, it is likely that it will raise a number of other issues relevant to the future development of the programme and it is important to review the findings thoroughly to identify any unanticipated outcomes and their implications, particularly for programme costs. In the case of results from assessment, for example, it will be important to investigate the reasons for any unexpectedly low scores and compare the results from different parts of the country so that remedial action can be taken. It may be necessary, for example, to make changes in:

- the selection of learners
- the briefing provided for employers
- the training provided for trainers, supporters and assessors
- the time-scale for study of the modules
- the number, frequency and content of tutorial and practical sessions at study centres
- the standards of grading and assessment.

Trainers and supporters will need detailed feedback that will alert them to any problems and encourage them to evaluate and improve the quality of their own inputs into the programme. They will need access to comments from learners, for instance, if they are to understand why they may need to provide a higher level of support or be more constructive in their approach to providing feedback to learners. While they will need a written report on the findings, group discussion offers an important opportunity for them to raise any issues which concern them, contribute to further planning about the programme and encourage them to accept any changes in approach that are agreed to be necessary. Where an evaluation reveals poor performance by programme personnel or a lack of support by employers, written reports need to be phrased with care and individual feedback given in a constructive way in private.

It is essential to be able to demonstrate some degree of objectivity, particularly in the methods of data collection and the interpretation of the findings. It will therefore be valuable to involve members of the Advisory Group in planning the evaluation as well as in reviewing the findings since this constitutes a public form of checking and demonstrates that the evaluation process is recognized and open. If it is to be used as a tool for the continuous improvement of the programme, the evaluation process itself will also need to be reviewed periodically. A continuous cycle of planning, implementation and review is equally relevant to the process of monitoring and evaluation as it is to other aspects of the programme.
Annexes
A well-organized blood transfusion service (BTS), with quality systems in all areas, is a prerequisite for the safe and effective use of blood and blood products.

The HIV/AIDS pandemic has focused particular attention on the importance of blood safety and availability. Unsafe blood transfusions have contributed to the enormous burden of HIV infections worldwide and continue to be of major concern, particularly in developing countries. In some regions, hepatitis B, hepatitis C, syphilis and other infections, such as Chagas disease, pose an even greater threat to the safety of blood supplies.

The global burden of disease due to unsafe blood transfusion can be eliminated or substantially reduced through an integrated strategy for blood safety which includes:

- Establishment of a nationally-coordinated blood transfusion service
- Collection of blood from voluntary non-remunerated blood donors from low-risk populations
- Testing of all donated blood, including screening for transfusion-transmissible infections, blood grouping and compatibility testing
- Reduction in unnecessary transfusions through the effective clinical use of blood, including the use of simple alternatives to transfusion (crystalloids and colloids), wherever possible.

**Words of advice**

- Secure government commitment and support for the national blood programme
- Establish a blood transfusion service as a separate unit with responsibility and authority, an adequate budget, a management team and trained staff
- Educate, motivate, recruit and retain voluntary non-remunerated blood donors from low-risk populations
- Ensure good laboratory practice in screening for transfusion-transmissible infections, blood grouping, compatibility testing, blood component production and the storage and transportation of blood products
- Reduce unnecessary transfusions through the effective clinical use of blood, including alternatives to transfusion
- Establish a quality system for the BTS
- Train all BTS and clinical staff to ensure the provision of safe blood and its effective clinical use

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Key elements

Establish a blood transfusion service

It is the responsibility of governments to ensure a safe and adequate supply of blood. This responsibility may be delegated to a non-profit governmental organization, but the BTS should be developed within the framework of the country’s health care infrastructure.

The BTS requires government commitment and support and recognition as a separate unit with an adequate budget, management team and trained staff.

Important activities in establishing a blood transfusion service include:

- Formalization of government commitment and support
- Development of a national blood policy and plan
- Development of necessary legislation/regulation for the BTS
- Formation of an organization with responsibility and authority for the BTS
- Formation of a BTS management committee
- Appointment of a medical director
- Appointment of a quality manager
- Appointment, when necessary, of specialist BTS advisory groups
- Appointment and training of staff experienced in each key aspect of the BTS
- Development and implementation of a budgeting and finance system to ensure a sustainable blood programme through cost recovery and/or annual budget allocation
- Establishment of national quality system, including guidelines, standard operating procedures, accurate records, monitoring and evaluation.

Educate, motivate, recruit and retain low-risk blood donors

High priority should be given to the elimination of family/replacement and paid blood donor systems, which are associated with a significantly higher prevalence of TTIs.

Voluntary non-remunerated blood donors from low-risk populations who give blood regularly are the foundation of a safe and adequate blood supply.

Important activities include:

- Appointment of an officer responsible for the national blood donor programme
- Establishment of a BTS unit responsible for donor education, motivation, recruitment and retention
- Appointment of a designated blood donor recruitment officer
- Preparation of SOPs in accordance with BTS guidelines
- Training of staff in the blood donor unit
- Identification of donor populations at low risk for TTIs
- Development of educational materials
- Establishment of a register of voluntary non-remunerated blood donors
- Assurance of safe blood collection procedures, including donor selection and deferral, donor care and confidentiality

Test all donated blood

The BTS should develop and maintain a national strategy for the testing of all donated blood and blood products, using the most appropriate and effective tests, and for good laboratory practice.

Important activities include:

- Donor notification and referral for counselling
- Monitoring of TTIs in the donor population
- Appointment of a designated technical officer
- Development of protocols for the testing, selection and evaluation of appropriate screening assays to be used at each site
- Training of BTS laboratory technical staff
- Screening of all donated blood for TTIs, including HIV, hepatitis viruses, syphilis and other infectious agents, such as Chagas disease
- Blood grouping and compatibility testing
- Good laboratory practice, with effective documentation, including standard operating procedures
- Procurement, supply, central storage and distribution of reagents and materials to ensure continuity in testing at all sites
- Maintenance of an effective blood cold chain for the storage and transportation of blood and blood products
- Commitment to the prevention, early diagnosis and treatment of conditions that could result in the need for transfusion (obstetrical complications, trauma and other causes of anaemia)
- Availability of intravenous replacement fluids (crystalloids and colloids) for the correction of hypovolaemia
- Availability of pharmaceuticals and devices to minimize the need for blood
- Effective clinical use of blood and blood products in accordance with national guidelines
- Monitoring and evaluation of the clinical use of blood.

Reduce unnecessary transfusions by effective clinical use of blood

Blood transfusion has the potential for acute or delayed complications and the transmission of infection. The risks associated with transfusion can be reduced by minimizing unnecessary transfusions through the effective clinical use of blood and blood products and the appropriate use of simple alternatives to transfusion which are safer and more cost-effective.

Important activities include:

- Development of a national policy and guidelines on the clinical use of blood
- Training in the clinical use of blood for all clinicians involved in the transfusion process and for BTS staff
- Commitment to the prevention, early diagnosis and treatment of conditions that could result in the need for transfusion (obstetrical complications, trauma and other causes of anaemia)
- Availability of intravenous replacement fluids (crystalloids and colloids) for the correction of hypovolaemia
- Availability of pharmaceuticals and devices to minimize the need for blood
- Effective clinical use of blood and blood products in accordance with national guidelines
- Monitoring and evaluation of the clinical use of blood.
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TRANSLATION

The modules have already been translated into a number of languages (as listed on p. 11) and other translations are in progress. WHO will be able to advise on what is currently available and in preparation. If none of these editions is suitable for widespread use in your country, you may wish to apply to WHO for permission to undertake a translation into your own national language.

You should be able to obtain advice and assistance in preparing a translation from institutions with expertise in producing learning materials, such as the Health Education Unit in the Ministry of Health or a university or specialized distance education institution.

It is important to ensure both that the translation is technically accurate and that the style of writing is suitable for a distance learning audience. This involves the following stages.

1. The translation should be made by an experienced translator who is familiar with medical and technical terminology. Where possible, the same person should translate all the modules in order to ensure consistency.

2. The modules should be edited and proofread by a trained editor with experience in developing educational materials.

3. They should then be carefully checked by a technical specialist to ensure no errors have been made by the translator or editor.

4. Finally, they should be proofread by the editor to correct any typographical errors.

When preparing the final version of the modules for printing, care should also be taken with their presentation. It is not essential to follow exactly the same design as in the original modules, but the layout should be undertaken by an experienced person who can make the materials attractive and easy to read.

WHO can provide generic copies of the module illustrations, without any text, to facilitate production and can advise on updates and amendments that have been made since the original publication of the materials.

ADAPTING THE MODULES

The modules were designed for global use and it should be possible for them to be used in most countries with little or no modification. A rigorous process of review was undertaken in each WHO Region during their development to take into account the wide variations in training needs.

It may be considered necessary, however, for some parts of the modules to be expanded or amended to address particular national concerns. For example, it may be important to include more detail on specific infectious agents, such as Chagas disease, or to replace the examples of standard operating procedures (SOPs) or documentation used in the modules with ones used in your country. If this is the case, you will need to undertake a thorough review of the sections in question.
Reviewing the modules

A comprehensive review should involve those working within the distance learning programme, as well as subject specialists. The following can all bring different experience and perspectives to the process.

1 **Specialists in transfusion medicine** who can suggest any modifications needed to make the materials more relevant to local circumstances.

2 **Trainers and supporters** who can identify any topics that learners find difficult and that need to be covered in more depth.

3 A small sample of **learners** who have worked through the modules and can indicate any parts where more detailed explanations, guidance or additional material would be helpful.

The review may highlight a number of areas where changes could be made. You will have to judge these suggestions on their merits and balance them against the time and costs that will be involved. While the ideal may be to produce an extensively revised version of the modules that is specific to your country in every detail, you will have to decide whether this would be justified by the scale of the programme and the number of staff to be trained.

Additional material

The simplest and most cost-effective solution is to produce country-specific material to supplement the modules, such as SOPs or more detailed explanations of certain topics.

Any new material produced should contain clear guidelines on how to use it and which part(s) of the modules it is supplementing or replacing. It could also include instructions for practical work, additional activities or assignments for learners to complete in the workplace and discuss with their trainer or supporter.

Adaptation

The adaptation of even a few sections of the modules can be a lengthy and costly process. It will require technical specialists to develop the content as well as a writer or editor with experience of producing interactive learning materials to ensure clarity, consistency and readability. Any new material should follow a similar approach to the original version and include features such as learning objectives, activities and self-assessment questions. The adapted version will then need to be reviewed by subject specialists and, ideally, tested by a small sample of learners to identify any final amendments that may be needed.

Adaptation is therefore not an appropriate option unless significant parts of the modules are actually unsuitable for use in your country. If, after careful reflection, it is still considered necessary, contact WHO to seek permission and discuss your proposal. Other countries in the region may be planning to modify the modules or produce additional material and it is worth exploring opportunities for collaboration to reduce the time and costs involved.
Toolkit
Toolkit contents

Checklists
1 Constraints on training provision
2 Criteria for the selection of programme personnel
3 Outline training curriculum for programme personnel
4 Methods of learner support
5 National workshop on establishing a distance learning programme in blood safety: draft programme
6 National workshop on establishing a distance learning programme in blood safety: topics for group discussion
7 Capital and recurrent costs
8 Making an evaluation plan
9 Indicators for monitoring and evaluation
10 Data from records and reports

Overheads
1 DISTANCE LEARNING
1 Strategy for blood safety
2–3 Constraints on training provision
4 Distance learning
5 The learner support system
6 Practical work
7–8 Benefits for health authorities
9 Benefits for staff
2 THE DISTANCE LEARNING MATERIALS
10 The modules
11 The audience
12 Aims of the modules
13–14 Features of the modules

3 PROGRAMME STRUCTURE
15 Components of a distance learning programme in blood safety
16 Structure of a distance learning programme
17 Criteria for the selection of study centres
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4 PROGRAMME PERSONNEL
19 The role of the programme coordinator: planning
20 The role of the programme coordinator: preparation
21 The role of the programme coordinator: implementation
2  The role of the trainer: coordination and management
23 The role of the trainer: tutorial support
24 The role of the trainer: guidance and counselling
25–26 The role of the supporter

5 THE LEARNER SUPPORT SYSTEM
27 Informing learners about the programme
28 Methods of learner support

6 ASSESSING LEARNING
29 Stages of assessment
30 Methods of assessing learning

7 PROGRAMME PLANNING
31 Action planning
32 The role of an Advisory Group

8 PROGRAMME MONITORING AND EVALUATION
33 Planning evaluation
34 Areas for monitoring and evaluation
35 Sources of data for monitoring and evaluation
Checklists
**Constraints on training provision**

Which of the following constraints on training provision apply in your country? Comment on any ways in which they might be overcome.

<table>
<thead>
<tr>
<th>Priority</th>
<th>Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Large numbers of staff require updating or further training</td>
</tr>
<tr>
<td></td>
<td>Wide variation in training needs of staff working at different levels</td>
</tr>
<tr>
<td></td>
<td>Wide geographical spread of staff requiring training, with many distant from training centres</td>
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<tr>
<td></td>
<td>Inadequate budget for conventional training courses, particularly for travel and subsistence costs</td>
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<td></td>
<td>Shortage of suitable training facilities and residential accommodation</td>
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<tr>
<td></td>
<td>Inadequate number of suitably qualified and experienced trainers</td>
</tr>
<tr>
<td></td>
<td>Shortage of training and reference materials</td>
</tr>
<tr>
<td></td>
<td>Increased pressure on services when staff are absent for training</td>
</tr>
<tr>
<td></td>
<td>Reluctance of staff to leave their families for long periods of training</td>
</tr>
<tr>
<td></td>
<td>Others (specify):</td>
</tr>
</tbody>
</table>

**Comments**
Criteria for the selection of programme personnel

Programme coordinator
1. Occupy a senior position
2. Appropriate qualifications and experience
3. Commitment to training and the distance learning approach
4. Good management and organizational skills
5. Strong interpersonal communication skills
6. Knowledge of national and local policies
7. Good contacts in the blood transfusion service at all levels
8. Flexibility and a positive attitude towards change
9. Sufficient time to devote to the role of programme coordinator
10. Willingness to travel

Trainers
1. Occupy a senior position
2. Appropriate qualifications and experience
3. Experience and expertise in training and the assessment of learning
4. Flexible approach to training and a positive attitude towards distance learning
5. Good management and organizational skills
6. Strong interpersonal communication skills
7. Knowledge of national and local policies
8. Sufficient time to devote to the role of trainer
9. Willingness to travel
10. Formal agreement of employer

Supporters
1. Commitment to training and a positive attitude towards distance learning
2. Good management and organizational skills
3. Strong interpersonal communication skills
4. Knowledge of national and local policies
5. Easily accessible to the learner
6. Sufficient time to devote to the role of supporter
7. Formal agreement of employer
Outline training curriculum for programme personnel

Trainners

1. The organization of the programme
2. Roles and responsibilities of trainers
3. Adult education approaches and the skills required to support learners at a distance, including:
   - monitoring learners’ progress
   - teaching and counselling by correspondence and telephone
   - providing feedback
   - supporting learners with particular learning needs or problems
   - monitoring and supporting supporters
4. The content and organization of group tutorials and practical sessions
5. The assessment system
6. Record-keeping and reporting requirements

Supporters

1. The organization of the programme
2. Roles and responsibilities of supporters
3. Monitoring the learner’s progress
4. Providing additional teaching and feedback
5. Supervising learners’ practical work
6. Providing non-academic guidance and counselling
7. The assessment system
8. Record-keeping and reporting requirements
## Methods of learner support

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| **Regular meetings between learner and supporter** | ■ Opportunity for review of progress, additional teaching, direct feedback and problem-solving  
■ Focuses directly on learner’s own working environment  
■ Inexpensive | ■ Qualified supporter may not be available  
■ Supporter may be poor teacher  
■ Supporter may be insufficiently motivated  
■ Supporter may have little time available |
| **Mail** | ■ Inexpensive  
■ Time-saving to write standard letters  
■ Provides a permanent record of communication  
■ Confidential, if required | ■ Dependent on reliable postal system  
■ Time-consuming to write individual letters  
■ One-way method of communication |
| **Fax** | ■ Rapid method of communication  
■ Provides a permanent record of communication | ■ Expensive  
■ Access to fax machine required  
■ Dependent on reliable telecommunications system  
■ One-way method of communication |
| **E-mail** | ■ Inexpensive  
■ Rapid method of communication  
■ Less formal than mail or fax | ■ Access to suitable equipment required  
■ Dependent on reliable telecommunications system  
■ One-way method of communication |
| **Telephone tutorials and counselling** | ■ Rapid method of communication  
■ Two-way method of communication  
■ Can be used for scheduled tutorials or immediate contact in case of problems | ■ Expensive  
■ Access to telephone required  
■ Dependent on reliable telecommunications system |
| **Individual visits to learners by trainer** | ■ Opportunity for review of progress, additional teaching, direct feedback and problem-solving  
■ Focuses directly on learner’s own working environment  
■ Opportunity for practical training  
■ Opportunity for informal or formal assessment | ■ Expensive  
■ Time-consuming to visit all learners  
■ Replacement staff may be needed during trainer’s absence |
| **Group tutorials at study centre** | ■ Structured tutorials and opportunity for additional teaching on difficult topics  
■ Opportunity for informal or formal assessment  
■ Exchange of ideas, opinions and experience with other learners as well as trainer  
■ Interaction between learners helps to maintain motivation | ■ Expensive  
■ Time-consuming  
■ Small blood banks may be unable to release staff  
■ Timing of tutorials may not be useful for learners who are ahead or behind in their studies  
■ Learners lacking confidence may find group discussion difficult |
| **Practical sessions at study centre** | ■ Opportunity for practical demonstrations and additional teaching  
■ Opportunity for informal or formal assessment  
■ Exchange of ideas, opinions and experience with other learners as well as trainer  
■ Interaction between learners helps to maintain motivation | ■ Expensive  
■ Dependent on suitable facilities  
■ Time-consuming  
■ Small blood banks may be unable to release staff  
■ Timing of practical sessions may not be useful for learners who are ahead or behind in their studies  
■ May be different equipment in learners’ own workplaces |
| **Peer support and local study groups** | ■ Informal support helps to reduce isolation and maintain motivation  
■ Inexpensive  
■ Different contact methods can be used | ■ Without guidance by trainer or supporter, learners may share incorrect information  
■ Staff at different levels may find it hard to interact  
■ Geographical isolation of some staff |
National workshop on establishing a distance learning programme in blood safety

Draft Programme

1. Overview of current status and future trends in blood safety

2. Regional/provincial reports on current training provision
   - Existing programmes and facilities
   - Unmet training needs
   - Constraints on expansion of training

3. Distance learning
   - The distance learning approach
   - The WHO distance learning materials
   - Overview of national activities in distance education
   - Group work: Understanding the distance learner
   - Reports and discussion on group work

4. Programme structure
   - Programme structure
   - Study centres
   - Participating centres
   - Group work: Planning a distance learning programme in blood safety
   - Reports and discussion on group work

5. Programme personnel
   - The role of the programme coordinator
   - The role of the trainer
   - The role of the supporter
   - Group work: Selecting, training and supporting programme personnel
   - Reports and discussion on group work

6. Supporting learners
   - Learners' support needs
   - Methods of learner support
   - Group work: Establishing a learner support system
   - Reports and discussion on group work

7. Assessing learning
   - Areas for assessment
   - Methods of assessment
   - Group work: Planning an assessment scheme
   - Reports and discussion on group work

8. Programme monitoring and evaluation
   - Areas for monitoring and evaluation
   - Methods of monitoring and evaluation
   - Group work: Planning monitoring and evaluation
   - Reports and discussion on group work

9. Action planning
   - Development of action plan and implementation schedule
   - Identification of resource requirements
National workshop on establishing a distance learning programme in blood safety

Topics for group discussion

1 Understanding the distance learner
   1 What factors might motivate individual employees to participate in a distance learning programme in blood safety?
   2 What potential problems do individuals face who study by distance learning?
   3 What issues need to be considered when planning a distance learning programme in order to prevent or minimize these potential problems?

2 Planning a distance learning programme in blood safety
   1 What is the most appropriate structure for a distance learning programme in blood safety?
   2 Who should be represented on a programme Advisory Group?
   3 What criteria should be used for the selection of:
      ■ Study centres
      ■ Participating centres
      ■ Learners?

3 Selecting, training and supporting programme personnel
   1 What criteria should be used for the selection of:
      ■ Programme coordinator
      ■ Trainers
      ■ Supporters
   2 Training
      ■ What training will trainers and supporters need?
      ■ Who should provide this training?
      ■ How many days of training should be provided?
   3 What ongoing support will trainers and supporters need once the programme has started?

4 Establishing a learner support system
   1 What are the advantages and disadvantages of the following methods of learner support?
      ■ Regular meetings between the learner and supporter
      ■ Mail
      ■ Fax
      ■ E-mail
      ■ Telephone tutorials and counselling
      ■ Individual visits to learners by trainer
      ■ Group tutorials at a study centre
      ■ Practical sessions at a study centre
      ■ Peer support and local study groups
   2 What other methods of learner support could be used in a distance learning programme in blood safety?
6 Planning an assessment scheme

1. What aspects of learners' work on the programme should be assessed?
2. What methods should be used to assess them?
3. When should assessment take place?
4. Who should conduct the assessment?
5. How can the assessment scheme be linked into existing assessment systems and qualifications?
6. What recognition should be given for successful completion of:
   - An individual module?
   - The complete programme?

7 Planning monitoring and evaluation

1. What aspects of the programme should be monitored and evaluated?
2. What are the most appropriate methods of monitoring and evaluating each of these aspects of the programme?
3. Who should conduct the monitoring and evaluation?
4. When should evaluation take place?

8 Action planning

1. What activities need to be undertaken, in what sequence and by whom in order to set up the programme?
2. What technical support will be required?
3. Where might this be obtained?
4. What financial resources will be required?
5. What sources of financial support might be available?
6. What are the potential problems and constraints in setting up the programme? How can they be avoided or minimized?
### Capital and recurrent costs

#### Capital costs

1. National workshop to promote the development of the programme
2. Purchase or reproduction of the modules
3. Development of additional resource materials, such as Study Guides
4. Training of coordinators, trainers and supporters

#### Recurrent costs

1. Programme personnel:
   - salaries or honoraria
   - training
   - travel and subsistence
2. Programme administration:
   - distribution of the learning materials
   - communications: postage, telephone, fax, e-mail, telex, radio
   - secretarial/administrative support
3. Orientation meetings for learners and employers
4. Group tutorials and practical sessions:
   - travel and subsistence
   - replacement staff cover
   - honoraria for additional resource persons
   - use of facilities and equipment
   - reagents
5. The assessment system
6. Programme monitoring and evaluation
Making an evaluation plan

Consider the following issues when planning evaluation.

1. Who needs information from evaluation and for what purpose?
2. What aspects of the programme should be evaluated?
3. How will the data be collected?
4. Who will analyse and interpret the data?
5. How much time and what skills will this require?
6. When should data collection and analysis take place?
7. In what form will the findings be presented?
8. How will the findings be used?
# Indicators for monitoring and evaluation

## Is a suitable structure for the programme in place?

*Indicators*

1. Official approval and support from the Ministry of Health and other statutory authorities
2. Availability of adequate budget
3. Appointment of programme coordinator
4. Establishment of Advisory Group
5. Availability of adequate number of trainers
6. Availability of adequate number of study centres with suitable facilities
7. Availability of a supporter for each learner

## Is the learner support system effective?

*Indicators*

1. Adequacy of training provided for:
   - trainers
   - supporters
2. Adequacy of time devoted to the programme by:
   - trainers
   - supporters
3. Adequacy of tutorial support and practical training provided for learners by:
   - trainers
   - supporters
4. Main problems faced by learners

## Are the distance learning materials suitable?

*Indicators*

1. Adequacy of the supply of distance learning materials
2. Relevance of the materials to identified training needs
3. Ability of learners to use the materials effectively for self-study
4. Need for any additional resource materials

## Is the programme acceptable?

*Indicators*

1. Validation of the programme by an approved institution or professional body
2. Acceptability of the distance learning approach to:
   - learners
   - employers

## Is the programme cost-effective?

*Indicators*

1. Number of learners admitted to the programme/total number requiring training
2. Percentage of learners successfully completing the distance learning programme/conventional training programmes at a similar level
3. Costs per learner in the distance learning programme/conventional training programmes at a similar level

## Has the programme had a positive impact on learners’ standards of performance?

*Indicators*

1. Increase in the number of voluntary non-remunerated blood donors
2. Increase in the number of repeat donors
3. Increase in the number of units of blood tested for transfusion-transmissible infections in accordance with the national policy on screening
4. Reduction in the number of units of blood discarded because of evidence of infectious disease markers
5. Reduction in the number of errors in blood grouping and compatibility testing
6. Reduction in the number of units of blood discarded because of deterioration during storage and transportation
## Data from records and reports

### 1 Learners
- Number of learners by location, job and grade
- Personal details, including age, sex, previous training, qualifications, experience, job title
- Name of learner’s supporter and manager
- Agreed training needs and priorities
- Study plans
- Reports on progress
- Action Plans and a record of outcomes
- Any problems experienced by individual learners and action taken to resolve them

### 2 Supporters
- Number of supporters by location, job and grade
- Personal details, including qualifications, experience, job title
- Staff development: training workshops attended
- Name of learner for whom they are responsible
- Number of hours worked
- Correspondence and notes on meetings and telephone contacts
- Any problems experienced by supporters and action taken to resolve them
- Trainers’ reports on competence

### 3 Trainers
- Number of trainers by location, job and grade
- Personal details, including qualifications, experience, job title
- Staff development: training workshops attended
- Number and names of learners and supporters for whom they are responsible
- Number of hours worked
- Correspondence and notes on meetings and telephone contacts
- Any problems experienced by trainers and action taken to resolve them
- Programme coordinator’s reports on competence

### 4 Study centres
- Type of institution: e.g. blood transfusion service, reference laboratory, hospital, training institution
- Name of director and relevant senior staff
- Facilities, equipment and accommodation available for use in the programme

### 5 Group tutorials and practical training
- Number, date and location of tutorial sessions held
- Number, date and location of practical sessions held
- Participants
- Resource persons
- Objectives and agenda
- Report and evaluation

### 6 Assessment of learning
- Number of assessors by location, job and grade
- Personal details of assessors, including qualifications, experience, job title
- Staff development: training workshops attended
- Arrangements for formal assessment, including dates of examinations and workplace assessment
- Numbers of learners sitting examinations and receiving workplace assessment
- Assessment results: number and grade of passes; percentages of course passes and failures
- Any problems experienced by assessors and action taken to resolve them
- Programme coordinator’s reports on competence
Overheads
Strategy for blood safety

1. The collection of blood only from voluntary non-remunerated blood donors from low-risk populations

2. The screening of all donated blood for transfusion-transmissible infections, using the most appropriate and effective tests, and good laboratory practice in all aspects of blood processing

3. Minimizing unnecessary transfusions through the effective clinical use of blood and blood products
Constraints on training provision

1. Large numbers of staff require updating or further training

2. Wide variation in training needs of staff working at different levels of the health care system

3. Wide geographical spread of staff requiring training, with many distant from training centres

4. Inadequate budget for conventional training courses, particularly for travel and subsistence costs

5. Shortage of suitable training facilities and residential accommodation
Constraints on training provision

6 Inadequate number of suitably qualified and experienced trainers

7 Few training and reference materials

8 Increased pressure on services when staff are absent for training

9 Reluctance of staff to leave their families for long periods of training
Distance learning

1. Trainers and learners do not need to be in the same place and can be linked up over a wide geographical area.

2. Most of the teaching is delivered through specially-designed learning materials supplied directly to individual learners.

3. A learner support system provides ongoing tutorial support, guidance and supervised practical training.

4. Learners can organize their own study to fit in with work and personal commitments.

5. The curriculum can be tailored to meet individual learning needs.
The learner support system

1 A small number of *trainers* who are responsible for coordinating training and providing tutorial support for a group of learners in their locality through:

- regular contact by mail, telephone, fax or e-mail
- group meetings and tutorials
- practical training sessions at designated study centres

2 A larger network of *supporters* who provide individualized support, supervision and feedback in the learner’s own workplace
Practical work

Practical course work takes place in:

1  Study centres:
   ■ blood transfusion centres
   ■ large hospital blood banks
   ■ reference laboratories
   ■ education and training institutions

2  The learner’s own workplace, if a suitably qualified and experienced supervisor is available
Benefits for health authorities

1. Specialized learning materials and local expertise enable an in-depth training programme to be made widely available.

2. A larger number of staff can be trained in a relatively short time.

3. Fewer trainers are needed because most of the teaching is provided through the learning materials.

4. More cost-effective than conventional training because there is less need for:
   - residential course attendance
   - replacement staff cover

5. Less disruption to services because of reduced staff absence for training.
Benefits for health authorities

6 Uniformly high quality training through learning materials prepared by inter-national transfusion medicine experts

7 Use of the same learning materials promotes the standardization of approaches and procedures

8 The flexible work-based approach to training promotes improved performance

9 The learning materials can be used in conventional training courses and in-service training

10 Senior staff responsible for training and supervision can use the learning materials for reference and revision
Benefits for staff

1. More staff have access to training, particularly those in remote areas
2. Learners do not have to leave their work or families for long periods of training
3. Learners receive individualized support in the workplace
4. The modular structure of the materials accommodates variations in knowledge, skills, experience and current work
5. Learners have more control over the time, place and pace of learning
6. The learning materials build on learners’ individual experience
7. Assurance of high quality teaching through the learning materials
The modules

- Introductory Module: Guidelines and Principles for Safe Blood Transfusion Practice
- Module 1: Safe Blood Donation
- Module 2: Screening for HIV and Other Infectious Agents
- Module 3: Blood Group Serology
- Trainer’s Guide
The audience

1  Staff responsible for donor education, motivation, recruitment and retention

2  Laboratory technical staff responsible for the screening, processing and issue of blood for transfusion

3  Teaching staff in blood transfusion services, universities and other training institutions

4  Senior laboratory technical staff with responsibility for in-service training and supervision

5  Medical, nursing and paramedical staff who wish to enhance their knowledge of blood transfusion practice
Aims of the modules

1. To update learners’ knowledge and ensure it is accurate and comprehensive

2. To improve their technical skills and performance

3. To strengthen their understanding and ability to apply their knowledge and skills in their everyday work

4. To encourage them to evaluate their own practice and identify ways of improving systems and procedures in their workplace
Features of the modules

1  Overall module objectives: what learners should be able to do when they have completed each module

2  Learning objectives: what they should be able to do after working through each section of the modules

3  Study plans: to help them identify their individual training priorities and organize their study

4  Summaries of key points in each section

5  Progress checks at the end of each section to help them evaluate their own progress
Features of the modules

6 Self-assessment questions and answers to help learners check their knowledge and understanding

7 Activities to help them relate their learning directly to their current work and practise new skills

8 Action plans to help them plan ways of improving systems and procedures in their own workplace

9 Appendices containing reference material, examples of documentation and standard operating procedures

10 Laminated charts: selected extracts from the modules for display in the workplace
Components of a distance learning programme in blood safety

- Tutorial support:
  - Trainers
  - Supporters

- Modules

- Learners

- Assessment of learning

- Practical work:
  - Study centres
  - Workplace
Structure of a distance learning programme in blood safety

National programme coordinator

Trainers

Learners and supporters

National blood transfusion service

Study centres: regional/provincial blood centres or training institutions

Hospital blood banks
Criteria for the selection of study centres

1 Adequate space and facilities for teaching and practical work

2 Adequate communication links, including post, telephone and, if possible, fax and e-mail

3 Experienced, well-qualified senior staff able to act as trainers or resource people

4 Administrative support

5 Access to suitable, low-cost residential accommodation

6 Reference and resource materials
Criteria for the selection of participating centres

1. Recognition of the need for training for one or more nominated learners

2. Availability of a member of staff who is able and willing to act as a supporter

3. Willingness to allocate time for study and meetings between the learner and supporter

4. Willingness to encourage and respond positively to any realistic, appropriate proposals for change from learners as a result of their participation in the programme
The role of the programme coordinator

Planning

1. Identify overall training needs and priorities

2. Develop an initial plan for the development of the programme

3. Identify agencies, institutions and individuals who can assist in programme planning and development

4. Establish an Advisory Group to provide advocacy, advice and technical support

5. Obtain official approval and support for the programme

6. Prepare a proposal and budget for a pilot project

7. Secure funding for capital and recurrent costs
The role of the programme coordinator

Preparation

1. Design the learner support system
2. Design the assessment system
3. Select institutions to act as study centres
4. Select participating centres
5. Select and train trainers
6. Manage the selection and training of supporters
7. Manage the selection and orientation of learners
8. Prepare supplementary materials
9. Organize the delivery of materials
10. Design record-keeping and reporting systems
11. Develop an evaluation system
The role of the programme coordinator

Implementation

1. Maintain regular contact with trainers and, through them, with supporters
2. Programme administration
3. Financial management
4. Manage the learner assessment system
5. Programme monitoring and evaluation
6. Report to government and funding agencies
7. Organize the wider implementation of the programme
The role of the trainer

Coordination and management

1. Establish and maintain contact with participating centres

2. Brief managers in participating centres about the support they will be expected to provide for learners

3. Assist in the selection of learners and their supporters

4. Train supporters

5. Maintain regular contact with supporters

6. Organize assessment in their locality

7. Report to the programme coordinator

8. Programme monitoring and evaluation
The role of the trainer

Tutorial support

1. Provide orientation for learners

2. Provide academic support at a distance by mail, fax, telephone or e-mail

3. Organize group tutorials at study centres

4. Organize practical training sessions at study centres

5. Visit learners for individual tuition and practical supervision, where required

6. Assess and provide feedback on learners’ work
The role of the trainer

Guidance and counselling

1. Maintain regular contact with learners to help prevent feelings of isolation

2. Give constructive feedback on progress

3. Provide individual guidance whenever learners need help that their supporter cannot provide

4. Encourage learners to maintain contact with others who are also undertaking the programme
The role of the supporter

1. Inform the learner about how the programme operates and how to work through the modules.

2. Identify the learner’s individual training needs and priorities and assist in developing a study plan.

3. Ensure adequate time has been allocated for study.

4. Meet the learner on a regular basis to review progress and provide any additional teaching needed.

5. Supervise the learner’s practical work, where feasible.

6. Give encouragement and constructive feedback on the learner’s progress.
The role of the supporter

7 Assist the learner in overcoming any problems

8 Discuss the findings from work on the activities, action list and action plan in each module

9 Provide practical support for the implementation of realistic and feasible recommendations

10 Report on the learner’s progress to his/her manager and trainer

11 Contribute to programme monitoring and evaluation
Informing learners about the programme

1. How the programme is organized
2. What learners can expect to gain from the programme
3. What certification or accreditation the programme offers
4. Whether any costs are involved
5. The role of their trainer and supporter and how to use them effectively
6. The time-scale for the programme and the frequency of meetings, tutorials and practical sessions
7. How and when they will be assessed
Methods of learner support

1. Regular meetings between learners and supporters
2. Correspondence between trainers and learners by mail, fax or e-mail
3. Telephone tutorials or counselling
4. Individual visits to learners by trainers
5. Group tutorials at a study centre
6. Practical sessions at a study centre
7. Peer support and local study groups
Stages of assessment

Assessment should take place at three stages in a training programme:

1. Before the course to identify learning needs
2. During the course to monitor progress and provide feedback
3. At the end of the course to evaluate achievement
Methods of assessing learning

1  Written examination

2  Practical examination

3  Oral examination

4  Workplace assessment: observation of the individual’s routine work

5  Assignments or project work: e.g. work on module activities and action plans

6  Reports by the learner’s:
   — trainer
   — supporter
   — manager/supervisor
Action planning

1. Build awareness and support for the programme
2. Secure government approval and support for the programme
3. Set up a programme Advisory Group
4. Conduct a training needs assessment
5. Plan a pilot project
6. Prepare a proposal and budget
7. Implement and evaluate the pilot project
Role of an Advisory Group

1. Promote awareness of the role of distance learning in training in blood safety

2. Facilitate the official approval and support of the programme

3. Advise on programme planning and implementation

4. Assist in securing financial and technical support

5. Monitor the progress of the programme

6. Advise on relevant technical and professional developments

7. Facilitate the validation and accreditation of the programme
Planning evaluation

1. Who needs information from evaluation and for what purpose?

2. What aspects of the programme should be evaluated?

3. How will the data be collected?

4. Who will analyse and interpret the data?

5. How much time and what skills will this require?

6. When should data collection and analysis take place?

7. In what form will the findings be presented?

8. How will the findings be used?
Areas for monitoring and evaluation

1. The suitability of the structure of the programme

2. The effectiveness of the learner support system

3. The suitability of the distance learning materials

4. The acceptability of the programme

5. The cost-effectiveness of the programme

6. The impact of the programme on learners’ standards of performance
Sources of data for monitoring and evaluation

1 Records and reports from:
   – trainers
   – supporters
   – learners’ managers or supervisors

2 Assessment results

3 Questionnaires

4 Interviews and focus group discussions

5 Informal feedback

6 Observation

7 Periodic evaluation meetings at each level of the programme:
   – national
   – regional
   – local