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TRAINING CURRICULUM OF TRAUMA GUIDELINE FOR PRIMARY HEALTH CARE IN IRAQ

DISCLAIMER

This guideline has been made possible through support provided by the U.S. Agency for International Development (USAID) under Primary Health Care Project in Iraq (PHCPI) implemented by University Research Co., LLC. This guideline has been developed in Iraq in close collaboration with the Ministry of Health (MoH) in November, 2012

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Acronyms

AHA	American Heart Association
BLS	Basic Life Support
ATLS	Advanced Trauma Life Support
ABCDE	Airway, Breathing, Circulation, Disability, and Exposure/environment control
AVPU	Alert, Verbal, Pain, Unresponsive
CT	Computed Tomography
CPR	Cardiopulmonary Resuscitation
FAST	Focused Abdominal Sonography for Trauma
GCS	Glasgow Coma Scale
LMA	Laryngeal Mask Airway
PHC	Primary Health Care
PPE	Personal Protective Equipment
SAMPLE	Symptoms, Allergies to medications, Medications taken, Past medical/surgical history, Last meal, Events/Environment
TBI	Traumatic Brain Injury

Introduction

Trauma is the leading cause of death for people 1-44 years of age and is exceeded only by cancer and cardiovascular disease in all age groups. Emergency units play a key role in saving the lives of poly-traumatized patients. Teams in the Primary Health Care (PHC) centers including trained physicians and nursing staff should be available in order to optimize patient care. Each person on the team should be familiar with the basics of trauma resuscitations as outlined below.

All resuscitations should be performed using **Basic Life Support** (BLS) and **Advanced Trauma Life Support** (ATLS) guidelines. For the individual care provider, assessment of the poly-traumatized patient is performed using a multistep approach, in which the airway is handled first and no other procedures are initiated until the airway is secured. Then, breathing and circulation are sequentially addressed (referred to as the ABCs of stabilization). Using the trauma team approach, each team member should be assigned a specific task or tasks so that each of these can be performed simultaneously to ensure timely and rapid treatment.

Part I: Trainer's Guide

This training curriculum is a guide to assist trainers in improving health care by training health professionals in the Basics of Management and Administration of Primary Health Care Centers (PHCCs).

Materials in this document are designed for training service providers who work at a variety of health facilities in Iraq, but most importantly for those involved in the management of the PHCCs. The modules can be used to train health professionals, physicians, nurses, midwives and other health workers in group training or, with adaptation, as a basis of individualized or self-directed learning.

Trainers implementing this course should be thoroughly familiar with the policies, strategies, guidelines and procedures. Because the PHCCs' functions and procedures are based on this training course along with the skills in the practices described. The trainers need to have a positive attitude about the participants and their training work.

Training may be implemented either off-site or on-site. In off-site training, a group of participants come together from several health facilities and then return home to apply what has been learned. Off-site training may be the most appropriate way to reach individuals from many small sites. On-site training refers to training held in a health facility team where the participants work. Both types of training can be very effective. When training is conducted off-site, it may be more difficult to observe actual clinical settings. On the other hand, when training takes place on-site, there may be interruptions due to participants being called away for other responsibilities.

How to Use the Manual

This manual is designed as a working instrument for trainers and facilitators. It can also be used as a planning tool for PHC and district health managers. The module schedule contains a condensed summary of the contents organized in units and is meant as a check list for the facilitator/s before and during the course. The time indicated for each unit is an average time span based on experience, and can vary according to the composition and dynamics of each respective group.

The manual is divided into two parts. The first part is an introduction to the training course giving an overview over the rationale, objectives, and target groups for the course. It includes the present section on recommendations on how to use the manual, introducing the structure, training methods and course schedule. It also contains information on how to organize a workshop / training course and concludes with some recommendations on the limitations of the document and how to deal with them.

The second part presents the actual training contents, methods, didactic materials and additional literature recommended for each content area, organized/compiled in the different modules of the program. Every training course starts with the introduction of participants and team presenting the course objectives, contents, methods and program and allowing participants to express their expectations and fears.

The course content is presented according to five broad content areas (modules), subdivided into different sessions:

Overall learning objectives: states the objectives to be achieved at the end of the module in terms of knowledge, skills and competence.

Schedule: gives an overview over the time span, methods, materials and recommended content for each session / topic and states the specific objectives of each session.

Sessions: are subdivisions/sessions of the module that follow a logical flow to develop the content of the module.

Specific objectives of the sessions: relate to the content and the expected level of competence to be achieved and can also be used as basis for the development of exam questions.

Background information for the facilitator: includes background information important for the facilitator to develop the content of the module, necessary and recommended definitions, concepts, theory and its applications.

Exercises: describe practical applications of the theory and are meant to facilitate the learning process through experiential approaches: role plays, games, etc. (see list of exercises).

Handouts: are the essential documentation for the participants about the content of the session / module stating the objectives, listing the key words, developing the concept / theory of the content, and giving recommendations for further reading.

References: additionally recommended literature, articles and books, which are related to the content of the module.

Structure of the Training Course

The training course has been planned as a five days course. However, it is also possible to shorten the course due to limited time and / or to select modules according to learning objectives and needs. As well the time can be expanded in order to deal more in depth with the content and allow for more exercises, practical, field work.

The time frame of the training course consists of six working hours per day. These hours are divided into two morning and two afternoon sessions. Each session normally has duration of 2 hours. The number of course trainers/ facilitators can range from one to two per course according to the requirements. Also, for special topics, external resource persons should be asked to lecture and work with the group in their respective areas of expertise. The trainee - facilitator ratio should be 15 to one, a ratio of 20 or 25 to one still being acceptable. The total number of participants should not exceed 25.

The course structure and training methods not only allow for the development of knowledge, skills, competence and change of attitudes of the participants. The course concept is also designed to be put into practice by participants after the training during their supervisory work or

by organizing their own training courses. Therefore this manual is not only a facilitator's manual, but also a supervisor's manual.

Approaches to Training and Learning

The training course outlined in this document is based on adult learning principles, competency-based training and performance improvement. Selected elements of the strategies that guided the development of this material and should guide its implementation and use are listed below.

How people learn best

People learn best when the following conditions are met:

- Participants are motivated and not anxious, know what is expected of them and treated with respect
- Information and skills are interesting, exciting, meaningful, and build on what participants already know, encourage problem-solving and reasoning
- Experiences are organized, logical, practical, include a variety of methods, and protocols and procedures are available
- New learning experiences are relevant to work and training needs of participants, and are applied immediately
- Training involves every participant in active practice and participants share responsibility for learning
- Training is a team activity, including trainers and co-trainers, providing participants with a variety of experiences and limiting trainer's biases
- The trainer acts as a facilitator of the learning process rather than a teacher who "spoon feeds" the learner
- The role and responsibilities of the trainers/facilitators and those of the participants/learners are clearly defined with:
 - The facilitators responsible for providing the learners with the necessary opportunities to acquire the knowledge and skills necessary to perform the tasks for which they are being trained
 - The facilitators responsible for providing the learners with the necessary opportunities to be exposed to the attitudes necessary to implement the acquired skills in a systematic manner and initiate the process of internalizing these attitudes
 - The learner remains responsible for her/his learning

The transactional relationships between the learners and the facilitators are at the level of adult to adult characterized by mutual respect and support

- Trainers are knowledgeable and competent in the subject matter and skills, use a variety of training methods, pay attention to individual participants' concerns, and provide motivation through feedback and reinforcement
- Participants must be selected according to specific criteria, such as the relevance of the training content to the job expectations/tasks
- Participants must have the necessary prerequisite level to enable them to benefit from the learning experience
- Feedback is immediate and focused on behavior that the participants can control
- Assessment of learning and skills is based on objectives that the participants understand

Knowledge, skills and attitudes

This course aims to improve health care by changing health workers' knowledge, skills and attitudes.

- Knowledge includes the facts that the participants need to know to perform their jobs.

Tips on increasing **knowledge** through training

- Start with what the participants already know or have experienced
- Use a variety of educational resources, including participatory activities that require participants to use their knowledge
- Use learning aids
- Review and summarize often
- Assess knowledge to verify learning

- Skills include the specific tasks that participants need to be able to perform.

Tips on increasing **skills** through training

- *Describe the skill*
- *Provide protocols and procedures*
- *Demonstrate the skill*
- *Have participants demonstrate the skill*
- *Verify that each skill is practiced correctly*
- *Assess skill by observation using a checklist*

- Attitudes affect behaviors, such as whether learned skills are applied and interactions with clients.

Tips on changing **attitudes and behavior** through training

- *Provide information and examples*
- *Include direct experience*
- *Invite discussion of values, concerns and experience*
- *Use role plays and brainstorming*
- *Model positive attitudes*
- *Assess changes in attitude by observing behavior*

Methods

The training will use a participatory and “hands on” approach where the role of the trainers is to facilitate learning by the participants. The responsibility for learning remains with the participants.

Participants learn more and stay engaged in learning activities when they play an active role in their learning and a variety of training methods are used. The following methods are recommended in the curriculum/modules.

Selected Training Methods

Brainstorming	Individual assignments	Return demonstration
Case study	Individual exercises	Role play
Clinical session	Interview	Self-directed activities
Demonstration	Mini-lecture	Small group discussion
Discussion	Observations	Simulation
Field visits	Pairs exercises	Small group exercises
Plenary group exercises	Presentation	Summary
Group assignments	Questions and answers	Survey
	Research	Team building exercises

In each module or session

This document contains an outline of a training plan for each of the key areas of content.

Each module contains the following sections:

- Front page with a module number, module objectives, module content by session and an estimated duration for the module.
- Session plans covering the various content areas.

Each session contains the following sections:

- **Trainer Preparation:** This section lists the specific preparations that trainers should make for the session. Preparations for every session include:
 - Making sure the room is properly arranged
 - Ensuring that markers and flip chart or a writing board with chalk or markers are available
 - Reviewing the training plan
 - Reviewing steps for the methods used in the training session
 - Ensuring that the resources needed to facilitate the learning process are available including copying materials that participants need
- **Methods and Activities:** This section lists the methods and activities that are used in the module. General instructions for methods that are frequently used are included in this introductory material. Instructions for participatory activities are included in the training plan.
- **Resources:** The relevant reference materials/handouts and other resources needed are listed here.
- **Evaluation/assessment:** Evaluation methods for the knowledge or skills included are listed. Questionnaires and skills checklists are included where needed.
- **Estimated Time:** The time that each session/module will require depends upon the particular group of participants, the amount of time available and other constraints. The module gives a general time range to allow for flexible scheduling.
- **Training Plan:** This section gives the specific learning objectives or purpose of a session, the key "must know" content, and the appropriate training methods and activities for each objective. All modules include one or more activities that give participants structured, participatory practice with the content of the module.
- **Handouts:** When specific activities require handouts, these are included after the training plan and should be copied before the session in which they will be used.
- **Questionnaires:** Each session/module includes a questionnaire that is tied to the learning objectives and a key with the correct answers. It is not appropriate to assign a pass or fail designation to the questionnaire. Instead, use the questionnaire as a learning tool. It must be used for **formative evaluation**. If participants are not certain of the answers, they should be encouraged to use the training resources to find the correct answer. Answer key must be given to the participants after finishing the processing of the responses.

- **Skills Checklists:** Each session that includes skills objectives includes a skills assessment checklist. The checklist is used by the trainer to evaluate the participant's skill based on observation of the specific steps included in the skill. The skills checklists are also used by each participant to assess their performance and take charge of their own learning. They can also be used by other participants for peer assessment. It is recommended that these checklists not only be used during training to assess the acquisition of skills, but also for post training evaluation and supervision.

Note: There are various possible formats for modules and sessions. Provided the necessary information is included for the trainer to use, the selection of format will depend on how comfortable the trainers are in using it.

Methods frequently used in this curriculum

Instructions for methods used frequently in this training course are included here. Activities for specific methods are included with the sessions where they are used.

Mini-lecture

Trainer makes a short (5 to 15minutes) presentation using the materials available. Mini-lectures are used to provide information and knowledge. They insure that all participants have an adequate level of information and insure standardization and uniformity of this information. Mini-lectures should be kept short and should be followed by questions and answers for clarification to enable participants to better understand the content of the session/module and clarify issues, and questions and answers for evaluation to ensure comprehension.

Questions and Answers (Q&A)

Questions and answers sessions are used to recall information or elicit participants' knowledge (in introductory sessions in order to assess training needs), for clarification (to ensure that participants understand information/content), presentation of information (to elicit information that participants may already know) and evaluation (to assess acquisition of knowledge and fill gaps in participants' knowledge).

Steps for Questions and Answers for clarification

1. Trainer asks participants if they have questions
2. If a participant has a question, trainer asks another participant to answer
3. If the participant's answer is correct and complete, trainer reinforces
4. If the participant's answer is incorrect and/or incomplete, trainer may ask questions that lead the participant to a more correct answer or ask another participant to answer
5. If the answer is still incorrect and/or incomplete after two or three trials, trainer corrects and/or completes and informs the participants where to find the information

6. If there are no questions, trainer asks questions to verify knowledge and follows the same steps (3, 4, 5)

Steps for Questions and Answers to elicit information from participant (s)

1. Trainer asks participants questions
2. If a participant's answer is correct and complete, trainer reinforces
3. If the participant's answer is incorrect and/or incomplete, trainer may ask questions that lead the participant to a more correct answer or ask another participant to answer
4. If the answer is still incorrect and/or incomplete after two or three trials, trainer corrects and/or completes and informs the participants where to find the information

Steps for Questions and Answers for evaluation

1. Trainer asks participants questions
2. If a participant's answer is correct and complete, trainer reinforces
3. If the participant's answer is incorrect and/or incomplete, trainer may ask questions that lead the participant to a more correct answer or ask another participant to answer
4. If the answer is still incorrect and/or incomplete after two or three trials, trainer corrects and/or completes and informs the participants where to find the information

Brainstorming

Brainstorming is an excellent way to find out what participants already know and gaps in their knowledge. Brainstorming brings participants experience into the classroom and lets the participants know that their experience is valuable.

Brainstorming is also a very effective way for problem solving.

A brainstorming session should always end with a summary.

Steps for brainstorming

1. Trainer asks an open-ended question
2. Participants shout out their answers or ideas:
 - Until no more ideas are generated, or at least every participant has a chance to contribute or time allocated has run out
 - No ideas are discarded criticized or analyzed, but clarifying questions can be asked
3. Trainer records ideas on newsprint or in another format where all can see them
4. Trainer leads a discussion of each of the ideas generated
5. Trainer clearly marks ideas that are agreed upon
6. Trainer summarizes or asks participants to summarize points of agreement
7. Trainer moves to the next question only after finishing discussion of previous question

8. Ideas generated in brainstorming can be used for summarizing, as input to group exercises, and to relate content to participant experience

Case study

A case study is method of training whereas data/information about a case, preferably a real one or based on one, is presented to the participants for review and analysis. It includes specific questions to be answered. Case studies are a very effective way to allow participants to practice using information to solve problem, the highest level of knowledge objective. They are also effective in providing participants opportunities to explore their attitudes and confront/compare them with other participants and trainers' attitudes. Moreover case studies allow for the identification of gaps in knowledge.

Participants, individually or in small groups are asked to study the case and prepare responses to the questions. The responses are then processed. During the processing the trainer must encourage and ensure that all participants get a chance to provide inputs. Processing can be done using questions and answers and/or discussion.

The questions must be answered in an orderly manner in the sense that each question must be answered fully and the inputs summarized before moving to the next question. Answer key must be given to the participants after the processing of the case study.

Case studies can be presented in different format. They can be based on the presentation of a real patient, the files of a patient, a written description of a case, an illustration such as a photograph or slides of a case, or a video.

This method is not used in this curriculum but trainers can develop case studies based on local conditions/data as additional exercises if time permits.

Discussion

Discussion is indicated when the outcome is not predetermined in advance and is "still negotiable". Therefore using discussion to provide "scientific" knowledge/information or a decision that has already been made and not to be changed can lead to frustration.

Discussion in plenary or in small groups is recommended to explore attitudes, values and opinions. It is also indicated to confront/compare different options of "doing things" ensuring that the "why" is covered.

During the discussion the trainer's role is to facilitate the process, and ensure that the discussion remains "on track" and that every participant gets a chance to contribute.

When small groups do not have the same assignment/topic to discuss, each group presents their output(s) and discussion follows immediately after the presentation before moving to the next group. Time management is essential to ensure that no group gets "short changed" and has ample time for the presentation and discussion.

If all the groups have the same assignment, all groups present before discussion takes place. Only clarification questions are allowed during the presentation. Processing the output(s) must focus on the points of agreement before moving to the differences.

If time does not allow for all groups to present, one group can present and the other groups complete from their own group's output before discussion starts.

Every discussion must be followed by a summary.

Demonstration

Demonstration is a very effective way to facilitate learning of a skill or initiation of the development of an attitude. The facilitator should use this method to show the skill(s) and/or the attitude(s) addressing more than one sense at a time. Often a demonstration can effectively replace a presentation provided the facilitator explains as s/he is doing.

A demonstration should always be followed by a Q/A for clarification session before the learners are required to do a return demonstration.

Steps for a demonstration

1. Trainer assembles resources needed for the demonstration
2. Trainer ensures that participants are ready, can hear and see
3. Trainer explains what s/he is going to do
4. Trainer instructs participants on what is expected of them (e.g. to observe closely, to take notes if appropriate, to use the skills checklist when appropriate etc.)
 - To prepare for the Q/A, and
 - Because they are required to do return demonstration(s) for practice
5. Trainer demonstrates while explaining the skill(s)/attitude necessary for each step of the procedure being demonstrated
6. Trainer conducts a Q/A for clarification at the end of the demonstration

Return demonstration

Return demonstrations provide the learners with the opportunity to practice the skills necessary to perform the procedures they are being trained on. The trainer must ensure that each learner/participant has the opportunity to practice **enough times to reach a preset minimum acceptable level of performance.**

Steps for a return demonstration

1. Trainer reminds participants of what is expected of them:
 - To practice the procedure/skills
 - To observe when others are practicing to be able to ask for clarification
 - To observe when others are practicing to be able to provide feedback and peer evaluation
2. Trainer divides participants into small groups, if more than one workstation.
(**Note:** each workstation requires at least one facilitator/trainer).

3. Participants take turns practicing the procedure/skills
4. Trainer ensures that all participants can hear and see
5. While each participant is practicing trainer can provide guidance as necessary provided it does not interfere with the process and confuse the participant
6. After each participant, trainer solicits feedback from other participants
7. After feedback from other participants, trainer reinforces what is correct and corrects and/or completes feedback
8. Each participant needs to practice more than once or until control of the skill, as time permits
9. If participant(s) need more than time permits, trainer arranges for additional practice opportunities

Simulation/simulated practice

A simulated practice is a very effective method to allow participants to practice procedures/skills in an environment that recreates as closely as possible the “real world” without the stress involved in practicing procedures/skills that they do not control yet in the field. It is recommended to have participants practice on models before they do perform the procedure/ use the skill in the work place. During a simulation the participant practices tasks that are part of her/his actual role in the workplace or that s/he will perform in the job s/he is being trained for.

Use the same steps as for a demonstration/return demonstration practice.

Role play

Role plays are a very effective method to practice procedures/skills in the training room. They are especially effective to practice procedures/skills that deal with human interactions such as health education and counseling sessions. They are also very effective when the learning objective deal with attitudes.

In a role play participants “play roles” that are not necessarily their roles in the “real world”. Often they are asked to play the role of someone they would be dealing with. In this case it is called “role reversal” or “reverse role play”. This allows the participants to explore and discover how other perceive/live the interaction.

A role play must always be processed to analyze the lessons learned.

Summary

Every time a training method allows for inputs through exchanges between the trainer(s) and the participants and between the participants themselves, it must be followed by a summary session to “tie up the loose ends” and provide the participants with clear answers. If this does not happen there is the likelihood that the participants will forget the “correct” answers.

A summary can be done by the trainer to ensure that there are “no loose ends”. If time permits, it is recommended to use the summary for evaluation. In this case the trainer can use the Q/A method.

Steps for a summary for evaluation

1. Trainer asks a participant to summarize
2. Trainers reinforces if the summary is correct/complete
3. Trainer asks another participant to correct/complete if the summary is incorrect/incomplete
4. Trainer repeats steps 2 and 3
5. Trainer corrects/completes if after 2 or 3 trials the summary is still Incorrect/incomplete.

Evaluation

Evaluation of learning and training objectives

Evaluation or assessment of learning and of training objectives allows trainers, program managers and participants to know how successful a training program has been. On-going evaluation and assessment allows trainers to identify gaps in learning and to fill those gaps. Evaluation also assists in revising learning experiences for later trainings.

Many strategies can be used to evaluate learning. Some of the most useful methods include:

- **Knowledge assessments:** Written or oral questions that require participants to recall, analyze, synthesize, organize or apply information to solve a problem. The knowledge component of a skill objective should be assessed prior to beginning skill practice in a training room or clinical session.
- **Questionnaires:** Written exercises that assist trainers and participants to identify and fill gaps in knowledge. Questionnaires can be administered as self-assessments. In some situations, it may be reasonable to have participants use course materials or to work together on questionnaires.
- **Skill checklists:** Observation of a participant performing a skill and assessment of the performance using a checklist. Simulated practice (using real items or models in a situation that is similar to actual practice) should ideally be assessed prior to beginning clinical practice with clients. Checklists should be used by the trainer and other participants to observe simulated (training room) performance and actual practice and provide feedback to help improve the performance. The checklists can also be used by the participant for self-assessment. During the training participants should be trained on how to use the checklists and encouraged to use them after the training to continue assessing their own performance and improving it.

Additional techniques for evaluation include: projects, reports, daily reflection, on-site observation, field performance, and discussion.

Each training module includes assessment of learning methods and tools:

- **Questions and Answers** should be used to frequently identify gaps in knowledge and fill them.
- **Questionnaires** are included with every module and can be used for self-assessment. To use them as self-assessment, participants fill out the questionnaire and then use any course materials to check their own answers. Trainers should work with participants filling out the questionnaires to make sure that all gaps in knowledge are filled before practicing and evaluating skills. When time permits, process responses in plenary to address any issues and fill the gaps in knowledge. At the end of this activity the answer key needs to be distributed to the participants.

- Skills Checklists are included for each of the skills that are included in this training curriculum. Participants can use the Skills Checklists as learning guides during practice sessions in training room or clinical sessions. To evaluate skills, trainers should generally observe participants three times with coaching as needed to ensure the skills are learned.

Evaluation of the participants

The evaluation of the learning by participants will be done through questions and answers, synthesis of sessions done by selected participants, self-assessment following the micro-sessions, peer assessment through feedback provided by other participants following the micro-sessions and assessment of performance by facilitators.

Each participant will practice more than once, preferably three times” the use of the curriculum to plan, organize, conduct and evaluate the training through simulated micro-sessions. A checklist will be used both by participants for self and peer assessment, and by the facilitators.

Videotaping the micro sessions or at least significant segments of the micro sessions and reviewing the taped segments after each session will enable the participants to assess their own progress in terms of acquisition of training/facilitation skills. This approach to evaluation although time consuming is very effective in helping participants assess their own performance and stabilize feedback received from their peers and from the trainers/facilitators.

Post training evaluation of the learners must be conducted within three (3) to six (6) months after the end of the training. Further post training evaluation and follow-up can be integrated into routine supervision. It is highly recommended to use the skills checklists used during the training for post training evaluation and follow-up.

Evaluation of the training

The “End of Training” evaluation can be done through a questionnaire (form 1) whereby the participants are asked to respond and express their opinions about various aspects of the workshop, such as organization, the process, the facilitation, and a general assessment.

The “End of module” evaluation can be done through a questionnaire (form 2) whereby the participants are asked to respond and express their opinions about various aspects of the module, such as the relevance of the module objective to the course ones, the relevance of the content to the objectives, the adequacy of the content, the presentation of the content, the effectiveness of the methodology, the facilitation and the sequencing of the content.

A confidence/satisfaction index can be calculated to determine how confident the learners feel that they acquired the knowledge and skills necessary to perform the tasks they have been trained for, and how committed they feel to using those skills to ensure the quality of the services they are to provide. The confidence index applies to the training objectives and acquisition of skills and knowledge and to the degree to which the participants feel that they able to apply what they have learned during the training. The satisfaction index applies to the organization and implementation of the training.

The items are labeled in the form of statements followed by a scale 5 (Strongly Agree), 4 (Agree), 2 (Disagree), and 1 (Strongly Disagree), where 5 represents the highest level of

satisfaction/confidence (agreement with the statement) and 1 represents the lowest. The participants are asked to select the level that expressed their opinion best. A space for comments is provided after each statement.

The confidence and satisfaction indices are calculated by multiplying the number of respondents by the correspondent coefficient in the scale, then adding the total. The total is multiplied by 100. The product is divided by the total number of respondents to the statement multiplied by 5. 60% represents the minimal acceptable level and 80% a very satisfactory level of performance.

For example, if the total number of respondents is 19 and 7 of them selected 5 on the scale, 6 selected 4, 4 selected 2, and 2 selected 1, then the index will be $(5 \times 7) + (4 \times 6) + (2 \times 4) + (1 \times 2)$ multiplied by 100, divided by (5×19) . A 100% index would be if the total number of respondents selected 5. In this case it would be 95. In this example the index is 72.63%.

The training content and process are evaluated on a continuing basis through daily evaluations using methods such as “things liked the best” and “things liked the least” and/or “quick feedback” forms. The facilitators will use the results of this evaluation during their daily meeting to integrate the feedback and adapt the training to the participants needs.

“Where Are We?” sessions will be conducted with the participants to assess the progress in content coverage and process towards reaching the training goals and learning objectives.

Comments are analyzed and categorized. Only significant comments, those mentioned more than once and/or by more than one participant, are retained. The facilitators need to use the results of this evaluation during their daily meeting to integrate the feedback and adapt the training to the participants needs. Feedback and assessment of training experiences allows trainers and program managers to adapt training to better meet participants’ needs. Trainers can also assess their own performance in facilitating the learning experience of participants using a standardized “facilitation skills” checklist (form 4).

Form 1: END OF COURSE EVALUATION QUESTIONNAIRE

TRAINING CENTER
DATE

COURSE TITLE:

INSTRUCTIONS

This evaluation will help adapt the course to your needs and to those of future participants.

It is anonymous. Please respond freely and sincerely to each item. The items are labeled in the form of statements followed by a scale where:

- 5 = **strong** agree
- 4 = agree

- 2 = disagree
- 1 = **strongly** disagree

Please circle the number that expresses your opinion; the difference between **strongly** agree and agree, and between **strongly** disagree and disagree are a matter of intensity.

Add your comments in a specific and concise manner, in the space provided after each statement. If that is not sufficient feel free to use extra paper. If you select 2 or 1, make sure to suggest how to make the situation better, practical, and offer solutions.

N.B: Course goals objectives and duration will vary based on the type of training conducted.
Adapt the form to each specific course by including in it the relevant course items.

COURSE GOALS

The Course Achieved Its Goals

1. To provide the participants with the opportunities to acquire/update the knowledge and skills necessary to:

1.1 Play an effective role as a member of the PHC Center team to improve the quality of care and services	5-4-2-1
Comments:	
1.2 Use the team approach to solve problems at the PHC center level	5-4-2-1
Comments:	
2. Provide the participants with opportunities to be exposed to and initiate the development of attitudes favorable to the systematic use of the knowledge and skills acquired in team building and problem solving to improve the quality of care and services	5-4-2-1
Comments:	

COURSE OBJECTIVES

1. The course helped me reach the stated objectives:

1.1 Apply the team approach principles to play an effective role as a member of the Model PHC Center service delivery team	5-4-2-1
Comments:	
1.2 Use the team approach to implement the problem solving cycle to solve service delivery and management problems at the PHC Center level	5-4-2-1
Comments:	
1.3 Explain the importance of being an effective team member of the Model PHC Center to improve the quality of care and services	5-4-2-1
Comments:	
1.4 Explain the importance of using the team approach to implement the problem solving cycle to solve service delivery and management problems at the Model PHC center	5-4-2-1
Comments:	

2. The course objectives are relevant to my job description / task I perform in my job 5-4-2-1

Comments:

3. There is a logical sequence to the units that facilitates learning 5-4-2-1

Comments:

ORGANIZATION AND CONDUCT OF THE COURSE

1. Time of notification was adequate to prepare for the course 5-4-2-1

Comments:

2. Information provided about the course before arriving was adequate 5-4-2-1

Comments:

3. Transportation arrangements during the course were adequate (if applicable) 5-4-2-1

Comments:

4. Training site (Training Center) was adequate 5-4-2-1

Comments:

5. The educational materials (including reference material) used were adequate both in terms and quantity and quality in relation to the training objectives and content 5-4-2-1

Comments:

6. The methodology and technique used to conduct the training were effective in assisting you to reach the course objectives 5-4-2-1

Comments:

7. Clinic/ practice site, as applicable, was adequate 5-4-2-1

Comments:

8. Relationships between participants and course managers and support staff were satisfactory 5-4-2-1

Comments:

9. Relationships between participants and trainers were satisfactory and beneficial to learning 5-4-2-1

Comments:

10. Relationships between participants were satisfactory 5-4-2-1

Comments:

11. The organization of the course was adequate (Time, breaks, supplies, resource materials) 5-4-2-1

Comments:

Additional comments:

GENERAL ASSESSMENT

1. I can replicate this training in my future work 5-4-2-1

Comments:

2. I would recommend this training course to others 5-4-2-1

Why or Why Not?

3. The duration of the course (10 days) was adequate to reach all objectives and cover all necessary topics 5-4-2-1

Comments:

General comments and suggestions to improve the course (Please be specific)

Form 2: END OF MODULE EVALUATION QUESTIONNAIRE

COURSE: DATE:

MODULE NUMBER & TITLE:

INSTRUCTIONS

This evaluation is intended to solicit your opinions about the modules. Your feedback will help adapt the course to your needs and to those of future participants.

It is anonymous. Please respond freely and sincerely to each item. The items are labeled in the form of statements followed by a scale where:

- 5 = **strongly** agree
- 4 = agree
- 2 = disagree
- 1 = **strongly** disagree

Please circle the number that best expresses your opinion; the differences between **strongly** agree and agree, and between **strongly** disagree and disagree are a matter of intensity.

Add your comments in a specific and concise manner in the space provided after each statement. If that space is not sufficient feel to use extra paper. If you select 2 or 1, make sure to write specific comments on how to improve the module.

EVALUATION ITEMS

1. The module objectives are relevant to the course objectives Comments:	5- 4- 2- 1
2. The content / topics covered in the unit are relevant to the objectives	5- 4- 2- 1

Comments:	
3. The content / topics were adequate to help me achieve the objectives Comments:	5- 4- 2- 1
4. The content / topics were clear and well-presented Comments:	5- 4- 2- 1
5. The training methods and activities were effective in facilitating learning Comments:	5- 4- 2- 1
6. The training methods and activities were conducted adequately to facilitate learning Comments:	5- 4- 2- 1
7. These are important topics that will enable me to better perform my job Comments: (specify these points)	5- 4- 2- 1

<p>8. There is a logical sequence to the sessions and topics that facilitates learning</p> <p>Comments:</p>	5-4- 2- 1
<p>9. There are certain topics that need further clarification</p> <p>Comments: (specify these points)</p>	5- 4- 2- 1
<p>10. The training materials and resources provided were adequate</p> <p>Comments:</p>	5- 4- 2- 1
<p>11. Training materials and resources were provided on time to facilitate learning</p> <p>Comments:</p>	5- 4- 2- 1
<p>1. The training materials and resources used were adequate to facilitate my learning</p> <p>Comments:</p>	5-4-2-1

14. The training site was adequate Comments:	5- 4- 2- 1
5. The clinic/ practice site was adequate (if applicable) Comments:	5- 4- 2- 1

General comments (if any not covered):

Form 3: QUICK FEEDBACK FORM

TRAINING COURSE: DATE:
LOCATION:

MODULE NUMBER AND TITLE:
SESSION NUMBER AND TITLE:

INSTRUCTIONS

This evaluation is anonymous. Please respond freely and sincerely to each item. The items are labeled in the form of statements followed by a scale where:

5 = **strongly** agree

4 = agree

2 = disagree

1 = **strongly** disagree

Please circle the description that expresses your opinion best; the difference between strongly agree and agree, and between strongly disagree and disagree are a matter of intensity.

Add your comments in a specific and concise manner, if you have any, in the space provided after each statement. If that space is not sufficient feel free to use extra paper. If you selected 2 or 1 please make sure to give comments (e.g. why? Solutions?)

1. The session objectives are relevant to the tasks in the job description

5- 4- 2- 1

COMMENTS

2. The methods/learning activities were adapted to the objectives 5- 4- 2- 1

COMMENTS

3. The materials provided were adequate to cover all of the content 5- 4- 2- 1

COMMENTS

4. The time allocated to the session was adequate to cover all the topics 5- 4- 2- 1

COMMENTS

5. The facilitation (conduct of the session) helped reach the session objectives 5- 4- 2- 1

COMMENTS

6. The content of the training was clearly presented 5- 4- 2- 1

COMMENTS

7. The materials/resources were used in a way that helped me learn 5- 4- 2- 1

COMMENTS

8. There are points of content that need further clarifications
(Specify what specific content areas)

Other comments:

Form 4: TRAINING SKILLS CHECKLIST

This checklist is used with the relevant curriculum to give feedback on the trainer's performance.

The checklist contains a list of items to be observed:

- If they are observed a check mark (✓) is entered in the column observed under **adequate** or **inadequate** depending on the performance.
- Comments are entered in the appropriate column to clarify/specify what is observed or not observed.
- Is not observed a check mark (✓) and comments are entered in the appropriate columns.

The finding and comments are analyzed and discussed with the trainers supervised. Any immediate corrective action(s) taken and further action(s) needed must be entered in the spaces provided.

The trainers supervised must be given an opportunity to comment and the comments must be entered in the appropriate space. The form must be dated and signed by the trainer and the supervisor. It is then filed in the trainer's file for future follow-up and reference.

Legend: A = Adequate NA = NOT adequate NO = NOT observed

Items	Observed		NO	Comments
	A	NA		
1. <u>Planning of the session</u> <ul style="list-style-type: none"> • Relevant sessions plan selected from curriculum • Organization conduct and evaluation of training in conformity with curriculum (based on observation during the session) 				
2. <u>Organizing the session</u> <ul style="list-style-type: none"> • Arrive before beginning of session • Ensure that all training resources are in place • Ensure that equipment is in working condition • Ensure that training site is set up in 				

Items	Observed		NO	Comments
	A	NA		
<p>accordance with the requirements of the training objective (s) and methodology</p> <ul style="list-style-type: none"> • Prepared/rehearsed for the training (based on observation of mastery in conducting activities and using resources during training) 				
Items	Observed		NO	Comments
	A	NA		
<p>3. <u>Conducting the session</u></p> <p>3.1 <u>Introduction</u></p> <ul style="list-style-type: none"> • Introduce oneself <ul style="list-style-type: none"> - Name - Job - Experience relevant to topic • Introduce/let team members introduce themselves • Module: <ul style="list-style-type: none"> - Introduce topic - Present objective - Clarify topic and objectives - List sessions - Establish linkage with job/task • Session <ul style="list-style-type: none"> - Introduce topic - Present objectives - Clarify topics and objectives - Establish linkage with module - Establish linkage with preceding session(s) - Explain methodology • Present evaluation methodology • State estimated duration <p>3.2 <u>Facilitation skills</u></p> <p>➤ <u>Clarifying</u></p> <ul style="list-style-type: none"> • Make sure participants are ready before starting on any content item • Make sure participants can hear: <ul style="list-style-type: none"> - Trainer - Other participants 				

Items	Observed		NO	Comments
	A	NA		
<ul style="list-style-type: none"> • Make sure participants can see: <ul style="list-style-type: none"> - Writing - Illustrations/ educational aids - Trainer - Each other • Make sure s/he look at participants • Make sure s/he can hear participants • Use appropriate educational material • Summarize after each content topic item before moving to next topic • Use examples relevant to objectives, content, and participants learning 				
Items	Observed		NO	Comments
	A	NA		
<p>➤ <u>Ensuring Active Participation</u></p> <ul style="list-style-type: none"> • Ask participants questions • Allow participants to ask questions • Allow participants to question/discuss/make contributions • Ensure that all participants contribute • Provide participants with opportunities to practice • Adapt to participants' learning capability (speed, learning activities, use of educational material) • Encourage participants through: <ul style="list-style-type: none"> - Listening - Letting participants complete their interventions - Not being judgmental - Maintaining cordial relationships with participants <p>➤ <u>Mastering Training</u></p> <ul style="list-style-type: none"> • Conduct the learning activities as per session plan • Use the training resources/ materials as per plan • Cover content adequately (relevant, clear, concise, complete, concrete, credible, consistent and correct) • Follow curriculum for learning/training activities 				

Items	Observed		NO	Comments
	A	NA		
<ul style="list-style-type: none"> • Use content as per curriculum <p>1. <u>Evaluating learning/training process</u></p> <ul style="list-style-type: none"> • Check that participants understand • Check that participants learn skills • Provide supportive feedback by: <ul style="list-style-type: none"> - Reinforcing the positive learning - Correcting any errors - Correcting any incomplete learning • Listen to participants comment about one's performance (without making it personal) • Adapt one's performance based on feedback from participants • Allow participants to answer questions asked by the group 				

Additional comments or observations

Analysis of findings

Action (s) taken

Further action (s) needed

Trainer's comments

Date:

Trainer's name & signature

Supervisor's name & signature

SYLLABUS/PROGRAM

GOALS:

- ✓ 1-To provide the participants with opportunities to acquire, or/and improve the knowledge and skills necessary to;
- ✓ Apply Basic Pre Hospital Trauma Life Support in PHCCI.
- ✓ 2-To provide the participants with opportunities to begin improving the attitudes needed to the systemic and systematic use of acquire knowledge and skills to improve the quality of basic pre hospital trauma life support in PHCCI, in order decrease mortality and morbidity in Iraq.

LEARNING OBJECTIVES

At the end of the training the participants will be able to:

- Explain the importance of basic pre-hospital trauma life support
- Demonstrate understanding of the priorities of prehospital trauma management
- Assess trauma patients needs rapidly and accurately
- Resuscitate and stabilize trauma patients
- Transport critically ill patients quickly and safely
- Organize basic trauma life support care in their respective PHCCI

CONTENT/TOPICS

The following content/topics will be covered:

- ✓ Basic principles of trauma life support
- ✓ Primary Survey Assessment and initial stabilization.
- ✓ Primary Survey According to a, b, c mnemonic
- ✓ Secondary Survey head, skull and maxillofacial examination.
- ✓ Appropriate Assessment for patients with burns caused by heat, electricity etc.
- ✓ Cardio-pulmonary resuscitation.
- ✓ Adjunct and Pitfalls in Pre – Hospital Trauma Life Support
- ✓ Pitfalls in pre – hospital Trauma Life Support Assessment Patient Management
- ✓ Transport of critically ill patients

METHODOLOGY

The training will use a participatory and “hands on” approach where the role of the trainers will be to facilitate learning by the participants. The responsibility for learning remains with the participants.

To ensure that this happens, a variety of training methods will be used:

- Individual assignments (e.g. reading assignments)
- Small-group work and Q/A in plenary
- Small-group work and Q/A in plenary for clarification
- Q/A in plenary for discussion
- Brainstorming
- Mini lectures
- Exercises
- Demonstration and Redemonstration
- Simulation

To assist the participants in going through the learning process, the following reference materials were provided:

- Proposed syllabus
- Handouts on Basics of ToT
- Handouts on Pre hospital Trauma Life Support

All the reference documents will be read by the participants as an individual assignment, clarified in plenary session and small group discussions, and used to prepare, conduct, and evaluate the practical sessions.

SCHEDULE

1- For the training course

The daily schedule will include 5 days, 6 hours each- of training room structured activities and 2 days of field activities. Starting and ending times, and specific daily schedules will be discussed and finalized with the participants.

Evening Assignments include continuation of individual reading and preparation.

EVALUATION

1. Evaluation of the training

The “end of training” evaluation will be done through a questionnaire whereby the participants are asked to respond and express their opinions about various aspects of the workshop, such as organization, the process, the facilitation, and a general assessment.

The confidence index applies to the training objectives and acquisition of skills and knowledge and to the degree to which the participants feel that they are able to apply what they have learned during the training. The satisfaction index applies to the organization and implementation of the training.

“Where Are We?” sessions will be conducted with the participants to assess the progress in content coverage and process towards reaching the training goals and learning objectives.

2. Evaluation of the participants

The evaluation of the learning by participants will be done through questions and answers, summaries of sessions done by selected participants, self-assessment following the practice sessions, peer assessment through feedback provided by other participants following the practice sessions and assessment of performance by facilitators.

Each participant will practice the various skills, preferably more than once.

Limitations of this manual

Although the authors have put substantial effort in making the manual simple and practical, we are well aware that for those limited to only reading the text, exercises, and explanations, it will be rather difficult to conduct the course without previously having experienced the training development process. We have therefore tried to give special attention to the description of the procedure of every module. This is done in order to give in this part of the modules practical hints, examples and a detailed guideline for their development. Experienced trainers and facilitators will find it much easier to use the manual, than those having their first training experience.

It is often thought that participatory teaching and learning methods are more relaxing for the trainers when participants themselves are expected to develop the contents in small working groups. This is definitely not the case. A lecture is a continuous presentation, given in a predetermined time span and participants are not expected to interrupt the presenter. Participants listen and may be only required to put forward questions in the end. The lecturer does not need more than technical competence on the topic and some presentation skills.

Participatory training and learning methods are much more open and flexible. Often they present a challenge to the facilitators by raising new topics, which may not adhere to the readily retrievable knowledge of the facilitator:

- In terms of the necessary continuous monitoring of the learning process to keep participants on track while allowing some space for related topics important to the participants;
- In terms of analytical and systematic competence to be able to summarize important learning results or to guide participants themselves to summarize their learning;
- In terms of monitoring group dynamics and intervening in conflict situations.

Organizers of the training course should be aware of these training style differences and might decide on a more traditional course setting if the above mentioned competences are not well developed in the trainers' team. It is recommended to consider these reflections in the planning of the workshop/training course.

Part Two

Training Modules

Module 1: Primary survey in pre-hospital trauma life support

Module Objectives:

By the end of this module the participants will be able to:

1. Explain the importance of basic pre-hospital trauma life support
2. Demonstrate understanding of primary survey according to a, b, c and d mnemonic.

Session 1: Basic principles of trauma life support

Session 2: Primary survey assessment and initial stabilization

Evaluation/ Assessment

Questions and answers, participants' summaries, trainer's evaluation

Estimated Training Time

6 hours

Session 1.1: Basic principles of trauma life support

Specific objectives of the session

At the end of the session the participants:

- Explain importance of trauma prevention.
- Demonstrate an understanding of basics of trauma life support
- Explain importance of pre-hospital trauma life support

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation demonstration and re demonstration.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time

1 hour

Session Plan

Objective	Content	Methods/ Activities
<p>1.1.1 Explain importance of trauma prevention.</p> <p>(15 Min.)</p>	<ul style="list-style-type: none"> • use of motorcycle helmets • restraining systems, seat-belts, • safer workplaces • flame-resistant sleepwear • use of smoke detectors • fencing around hazards (wells, deep pools of water) 	<p>Question and answers</p>
<p>1.1.2 Demonstrate understanding basics of trauma life support.</p> <p>(15min.)</p>	<p>1. immediately or quickly as a result of overwhelming injury; 2. during the intermediate or sub-acute phase. 3. Delayed deaths days or weeks as a result of infection, multisystem complications of trauma.</p>	<p>Brain storming</p>
<p>1.1.3 Explain importance of pre-hospital trauma life support</p> <p>(30min.)</p>	<ul style="list-style-type: none"> • first responder (first there, first care) • basic pre-hospital trauma life support: • Advanced pre-hospital trauma life support: 	<p>Case study: 1.1.3</p>

1.1.1 Explain importance of trauma prevention.

Injury is a major cause of premature death and disability worldwide. Most existing injury control strategies focus on primary prevention – that is, avoiding the occurrence of injuries or minimizing their severity – or on secondary prevention – providing adequate medical response to enhance treatment and thereby minimize harm following an injury. The incidents that produce serious or fatal injuries are not random or unpredictable events. In many cases, they can be identified and acted upon. During the past few decades, research has shown that many injuries can be prevented or their severity reduced through the implementation of simple measures. Innovative solutions that engage different sectors of society have resulted in cost-effective interventions that can prevent injuries at work, at home and on the street. Examples include the use of motorcycle helmets and restraining systems, such as seat-belts and child restraints in automobiles; the design of safer workplaces; the development of flame-resistant sleepwear; the use of smoke detectors; and the installation of fencing around hazards such as wells or deep pools of water. Many of these strategies are highly cost effective. A host of interventions have also shown promise in reducing violence-related injuries or limiting their severity. These include programs on substance abuse, parent training schemes and school-based violence prevention programs, as well as the use of home visits and efforts to clear landmines.

1.1.2 Understanding basics of trauma life support

Generally, the best way to reduce rates of death or disability from life-threatening injuries is to prevent them. However, it is often possible to minimize the consequences of serious injury, including long-term morbidity or mortality, by promptly providing effective pre-hospital care. Deaths from severe injury occur in one of three phases they:

1. **Occur immediately** or occur quickly as a result of overwhelming injury;
2. **Occur during the intermediate or sub-acute phase.** These deaths occur within several hours of the event and are frequently the result of treatable conditions;
3. **are delayed.** Deaths during this phase often occur days or weeks after the initial injury and are the result of infection, multisystem failure or other late complications of trauma.

1.1.3 The importance of pre-hospital trauma life support

In general pre-hospital trauma life support composed of three levels:

In many communities, the most basic level of pre-hospital trauma care is provided by laypeople known as “first responders”. They comprise the first level, or tier, of the pre-hospital system. This is particularly important in remote rural areas.

Many countries with established pre-hospital emergency medical services and trauma care systems already have a core group of providers who have received training in trauma care and thus have knowledge and skills beyond those expected of bystanders or first responders. This second tier of care allows professionals to offer a wider range of interventions, including extrication and rescue, immobilization, the administration of oxygen and more detailed patient

assessment. Many paid ambulance personnel around the world are trained to this standard. A typical training program for providers of this level of care requires professional instruction comprising both theory and practical experience. Training generally lasts from 100 hours to 400 hours.

Although many effective pre-hospital care systems worldwide are limited to one or both of the first two levels of pre-hospital care, urban and suburban areas of many high-income and middle-income countries provide a third tier of care known as advanced pre-hospital care. Those who provide advanced pre-hospital care are most often physicians or highly skilled non-physician paramedics. They are trained to manage a wide range of injury Processes and acute diseases. These providers generally perform a wide range of invasive interventions, including inserting intravenous lines and administering intravenous medications and using advanced airway adjuncts. They may also perform endotracheal intubation, needle decompression of a pneumothorax and cricothyroidotomy.

1.1.3 Case study

Maria De villota \ 32 years Formula 1 care Trailer in early July she crushed the Formula 1 car she was testing when it suddenly accelerated into the back of the truck
She was treated on the scene and taken to a nearby hospital with a life threatening injuries

1- Distributer first picture and case stedy to all participants.



Picture 1

2. Give them time to think about this question” reading this case and examining MRI in the picture, what is your prognosis, what outcome you do expect and why?”
3. Collect their answers, expectations and prognosis (this is a post mortem MRI, Di villota is crippled now, will never be able to drive again.....)
4. Distribute the second picture



5. Inform them that as a result of this trauma Di- Villota lost her right eye and her sense of test and smell
6. Give them time to think about those questions “with regard to her serious life threatening facial injuries, explain please reasons of her survival with best possible outcomes?”
7. Distribute for all participants the crash circumstances:

De Villota did not move for 15 minutes. She was **treated on the scene** and taken by an ambulance to a nearby hospital with life-threatening injuries. The ambulance arrived at 9:17 a.m., the police were notified by 9:25, and she was at the region's major trauma center by 10:45, reports Auto sport. The **speed of this response** would have been extremely **unlikely 50 years ago**, when drivers first began advocating for more prepared **safety precautions** in Formula One. Had this crash occurred in the 1950s, for instance, Maria would have been wearing an open-faced, thin metal helmet. She wouldn't have survived. Just **as critical** as the **modern helmet and safety structures of her race car was the on-site medical team**, according to Auto sport. **Emergency crews are on stand-by at every Formula One test. Had they not been there, Maria would not have made it to the hospital.**

. BBC presenter Chris Mann witnessed the crash: "The top of her car and her helmet seemed to take the brunt of it," he said.

De Villota was on the operating table from that afternoon through the next morning, being worked on by hospital neurological and plastic surgery teams. It was then that she lost her eye.

Doctors were positive by her third day in the hospital: “Whilst Maria remains acutely ill, this confirms that she has been responding well to the treatment she has received since her accident. Coupled with the significant progress that has been made with regard to her facial injuries, we feel sufficiently comfortable to proceed with a further update.”

In the first week after the crash she was in the Neurological Critical Care Unit receiving

sedation. She had two major surgeries in this time. She was later moved to a hospital in Spain, where it was determined she did not suffer neurological damage.

De Villota spoke about her crash, her hospitalization, and her recovery for the first time last month. She said that she remembers everything from the accident, including the crash itself. Now she considers herself a changed person.

Session 1.2: Primary Survey Assessment and initial stabilization.

Specific objectives of the session

At the end of the session the participants will be able to:

- Explain primary survey according to A,B,C,D mnemonic
- Demonstrate understanding of airway maintenance and cervical spine protection.
- Demonstrate understanding of breathing adequacy.
- Demonstrate understanding of Circulation and hemorrhage control
- Demonstrate understanding of disability as a component of primary survey in trauma life support
- Demonstrate understanding of exposure/environment control.

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time

5 hours

Session plan

Objective	Content	Methods/ Activities
<p>1.2.1 Explain primary survey according to A,B,C,D mnemonic (20 Min.)</p>	<p>Mnemonic:</p> <ul style="list-style-type: none"> • A: Airway • B: Breathing • C: Circulation • D: Disability • E: Environment control 	<p>Questions and answers Video scene</p>
<p>1.2.2 Explain airway maintenance and cervical spine protection (20 Min.)</p>	<ul style="list-style-type: none"> • Is the airway patent • Is it protected • Is it at risk for obstruction • In – line cervical stabilization is maintained. 	<p>Mini lecture , video scene followed by simulation</p>
<p>A. Assess the airway practically by steps (20 Min.)</p>	<ul style="list-style-type: none"> • Ask the patient a question such as “What is your name?” • Inspect for bleeding, swelling, foreign bodies. Assess the patient’s ability to protect his or her airway- the gag reflex 	<p>Mini lecture , video scene followed by simulation</p>
<p>B. Apply treatment methods related to airway and cervical spine (20 Min.)</p>	<ul style="list-style-type: none"> • The jaw-thrush maneuver. • Chin- lift maneuver. • Remove any foreign body. • Oropharyngeal airway only in unconscious patients • Laryngeal mask airway. • Endotracheal intubation. • Acricothyrotomy (surgical airway). 	<p>Mini lecture , video scene followed by simulation</p>

Objective	Content	Methods/ Activities
1.2.3 Demonstrate understanding of breathing adequacy (20 Min.)	<ul style="list-style-type: none"> • Adequate gas exchange • Adequate function of the lungs, chest wall and diaphragm. 	Mini lecture, video scene and simulation
A. Assess breathing adequacy through steps. (20 Min.)	<ul style="list-style-type: none"> • Is the patient oxygenating? • Is the patient ventilating? • Is there a treatable structural abnormality 	Mini lecture, video scene and simulation
B. Apply treatment methods related to breathing (20 Min.)	<ul style="list-style-type: none"> • Give Oxygen • Ventilate the patient with a bag-mask • pneumothorax is initially treated • treatment with high-flow oxygen 	Mini lecture, video scene and simulation
1.2.4 Demonstrate understanding of Circulation and hemorrhage control (20 Min.)	<ul style="list-style-type: none"> • Hemorrhage is the most common cause of shock in trauma victims • Is there active external bleeding? • Is the patient in shock? • Is there active internal bleeding?" 	Mini lecture, video scene and simulation
A. Assess the circulation and hemorrhage through the evaluating steps (20 Min.)	<ul style="list-style-type: none"> • Identify and control external bleeding • Cardiac and blood pressure monitoring • early signs of shock including 	Mini lecture, video scene and simulation
B. Apply treatment methods related to circulation and hemorrhage. (20 Min.)	<ul style="list-style-type: none"> • Control hemorrhage • Intravenous catheters • Draw blood for laboratory studies • Resuscitate with warmed electrolyte solutions • Administer O negative 	Mini lecture, video scene and simulation

Objective	Content	Methods/ Activities
	<p>or type-specific blood if concern for active pregnant patients</p> <ul style="list-style-type: none"> • Perform Cardiopulmonary resuscitation (CPR) 	
<p>1.2.5 Demonstrate understanding of disability as a component of primary survey in trauma life support</p> <p>(20 Min.)</p>	<ul style="list-style-type: none"> • Any evidence of intracranial injury? • Any evidence of spinal cord injury? • Level of consciousness 	<p>Mini lecture, video scene simulation</p>
<p>A. Assess the body and neurological disability from trauma effect</p> <p>(20 Min.)</p>	<ul style="list-style-type: none"> • Any evidence of intracranial injury? • Any evidence of spinal cord injury? • AVPU scale or the Glasgow Coma Scale (GCS). 	<p>Mini lecture, video scene simulation</p>
<p>B. Discover the hidden injuries and the clinical effects of the trauma.</p> <p>(20 Min.)</p>	<ul style="list-style-type: none"> • Expose the patient, remove all of his or her clothes. • Prevent hypothermia. 	<p>Questions and answers Video scene</p>
<p>1.2.6 Demonstrate understanding of exposure/environment control.</p> <p>(20 Min.)</p>	<ul style="list-style-type: none"> • Expose the patient, remove all of his or her clothes. • Prevent hypothermia. 	<p>Brain Storming</p>

Session 1.2: Primary Survey

1.2.1 Primary Survey According to a, b, c mnemonic

A. Assessment and Initial Stabilization

In the primary survey, airway, breathing, and circulation are assessed and immediate life-threatening conditions are diagnosed and treated. An easy-to-remember mnemonic is **ABCDE: Airway, Breathing, and Circulation, Disability, and Exposure/Environment control**. The primary survey usually takes no longer than a few minutes, unless procedures are required. The primary survey must be repeated any time a patient's status changes, including changes in mental status or vital signs, and following the performance of invasive procedures or administration of new medications.

1.2.2 Airway Maintenance and Cervical Spine Protection

An obstructed airway is an immediate threat to life. The focused airway assessment should answer the following questions: "Is the airway patent? Is it protected? Is it at risk for obstruction?" The goals of treatment are to provide a patent airway and to protect the airway from future obstruction by blood, edema, vomitus, or other possible causes of blockage. The physician must also assure that in-line cervical stabilization is maintained for any patient with possible or confirmed cervical spine injuries.

A. Steps of Airway Assessment and Initial Stabilization

- Ask the patient a question such as "What is your name?" If the patient responds verbally, he or she has an intact airway (for the moment).
- Inspect for bleeding, swelling, foreign bodies and facial, mandibular or tracheal/laryngeal fractures that may result in airway obstruction. Measures to establish a patent airway should be instituted while protecting the cervical spine.
- Snoring or gurgling suggests partial airway obstruction. A hoarse voice, subcutaneous emphysema, or a palpable fracture may indicate laryngeal trauma. Such concerning signs predict a worsening airway and airway decompensation should be anticipated and dealt with.
- Assess the patient's ability to protect his or her airway by assessing the gag reflex. Touch the posterior pharynx with a tongue blade or suction device to initiate the gag response. In alert patients, ask them to swallow to assess their ability to handle their secretions. Obtunded patients

without a gag reflex cannot protect themselves from aspirating secretions into their lungs, and should be intubated for airway protection.

B. Treatment

- The jaw-thrust maneuver may relieve the most common airway obstruction, which is the base of the tongue falling backward into the posterior pharynx. The jaw-thrust is performed by placing the fingers behind the angle of the mandible and lifting the mandible anteriorly. This procedure is uncomfortable and may awaken an obtunded patient.
- An alternative to the jaw thrust is the chin-lift maneuver. The chin of the patient is lifted superiorly, hyperextending the neck and opening the airway. However, this maneuver is generally not recommended as it may worsen a cervical spine injury. Its use should be restricted to those patients in whom cervical spine injury is not suspected. Risk factors for cervical spine injury include polytrauma; altered level of consciousness; blunt injury above the clavicles; neck pain, ecchymosis or deformity; a concerning mechanism of injury; and, neurologic deficits.
- Remove any foreign bodies (including dentures, vomitus or blood clots) under direct visualization. Do not perform a blind finger sweep because this may push an obstructing foreign body farther down the pharynx. Suction any secretions and blood.
- An oropharyngeal airway is for use only in unconscious patients. It is easily inserted to ensure airway patency while using a bag mask device to ventilate the patient or while preparing for endotracheal intubation. A nasopharyngeal airway should be avoided in patients with evidence of midface or basilar skull fractures.
- A laryngeal mask airway (LMA) is a rescue airway device inserted through the mouth, with a mask that covers the glottic opening. It comes in different sizes, so choose the appropriate size for the patient. An LMA allows ventilation but does not provide airway protection. Placement of this device should be considered a temporizing measure until a definitive airway is established.
- Endotracheal intubation should be considered in any patient with airway compromise (unable to keep open, unable to protect, GCS \leq 8), apnea or respiratory failure, or potential for impending airway compromise (e.g., expanding neck hematoma or thermal burns). During intubation, the cervical spine should be protected by in-line immobilization. Correct endotracheal tube (ETT) placement should be confirmed by a combination of the direct visualization of the ETT passing through the vocal cords, the presence of normal oxygen saturation, .
- A cricothyrotomy (surgical airway) may be necessary when endotracheal intubation either fails or is not feasible. This procedure involves incising

the cricothyroid membrane to allow placement of an ET or tracheostomy tube directly into the trachea in the patient greater than 8 years of age

1.2.3 Breathing

Airway patency alone does not assure adequate ventilation. Adequate gas exchange is required to maximize oxygenation and carbon dioxide elimination. Ventilation requires adequate function of the lungs, chest wall and diaphragm. Each component must be examined and evaluated rapidly. The focused breathing assessment should answer the following questions: "Is the patient oxygenating? Is the patient ventilating? Is there a treatable structural abnormality (e.g., tension pneumothorax)?"

A. Steps of Breathing Assessment and Initial Stabilization

- Expose the neck and the chest
- Look at the skin, lips, and tongue for cyanosis; watch the patient as he or she breathes, assessing for symmetry and the presence of structural abnormalities (e.g., open wounds).
- Listen for equal breath sounds; palpate the entire thorax with both hands, assessing for equal bilateral chest expansion, subcutaneous air, tenderness and swelling.
- Check the pulse and oxygen saturation using a pulse oximeter; remember that pulse oximetry may be unreliable in patients with poor peripheral perfusion after trauma.

Note: Pulse oximetry is a non-invasive method for monitoring the patient's arterial oxygen saturation.

B. Treatment

- Give Oxygen at 6-10 L/min via a non-rebreathing face-mask. Oxygen should be administered to all patients suffering from polytraumatic injuries even if their measured arterial oxygen saturation is normal.
- Ventilate the patient with a bag-mask ventilation device or a ventilator. Keep in mind that vigorous bag-mask ventilation can convert a small pneumothorax into a tension pneumothorax, leading to rapid deterioration of the patient.
- A tension pneumothorax is initially treated with needle thoracostomy (rapid insertion of catheter over needle into the anterior 2nd intercostal space in the midclavicular line).
- An open pneumothorax is initially treated with a sterile, occlusive three-way dressing (leaving one corner untapped) to produce a flutter-type valve.
- A flail chest is treated with high-flow oxygen, careful fluid administration, pain medication, and consideration of intubation and positive pressure ventilation. Strapping, bulky dressings and Ace bandaging are no longer recommended.

- A hemothorax requires restoration of blood volume and tube thoracostomy.

1.2.4 Circulation and Hemorrhage Control

Hemorrhage is the most common cause of shock in trauma victims. Most preventable trauma deaths result from the failure to recognize and treat hemorrhagic shock. The level of consciousness, skin color and temperature, nail bed capillary refill time, and rate and quality of the pulses are all markers for adequate circulation. The focused circulatory assessment should answer the following questions: "Is there active external bleeding? Is the patient in shock? Is there active internal bleeding?"

A. Steps of Circulation Assessment and Rescue

- Identify and control external bleeding with direct pressure.
- Cardiac and blood pressure monitoring are indicated.
- Look for early signs of shock including altered level of consciousness; ashen, grey skin; pale, cool extremities; a rapid or thready pulse; and, delayed capillary refill. Hypotension is a late sign of shock.
- Intra-abdominal hemorrhage is a common life-threatening source of bleeding, must be considered in any hypotensive patient, and can be assessed quickly at the bedside with focused abdominal sonography for trauma (FAST).
- Sites of hidden (occult) blood loss can be remembered by the mnemonic CRAMP: **C**hest (e.g., massive hemothorax), **R**etroperitoneum, **A**bdomen (e.g., splenic rupture), **and M**issed long bone (e.g., femur), **P**elvis (e.g., pelvic fracture).
- Other causes of shock in the trauma patient include tension pneumothorax, cardiac tamponade, and neurogenic ("spinal") shock. Cardiac tamponade is diagnosed by ultrasound and initial treatment consists of IV fluids and pericardiocentesis.

B. Treatment

- Control hemorrhage by direct pressure over the wounds; tourniquets should be considered when conventional approaches (e.g., direct pressure) to hemorrhage control have failed.
- Establish 2 large-bore (14- to 16-gauge) intravenous catheters; if traditional IV access fails, consider central venous access, intraosseous catheters or peripheral venous cutdowns.
- Draw blood for basic laboratory studies, including hematocrit and a pregnancy testing (for all females of childbearing age).
- Resuscitate with warmed electrolyte solutions (Ringers lactate or normal saline). The initial fluid bolus is 1-2 L in adults and 10-20 mL/kg in children.

- Administer O negative or type-specific blood if concern for active, uncontrolled hemorrhage.
- Place third-trimester pregnant patients in the left lateral recumbent position to relieve uterine pressure on the inferior vena cava.
- Perform Cardiopulmonary resuscitation (CPR) if needed.
 - **Cardiopulmonary resuscitation (CPR)** should follow the latest American Heart Association (AHA) guidelines.
 - Follow the C-A-B technique (compression–airway–breathing)
 - Compression should be in a rate of 100/min, compressing the chest inward at least 2 inches in adults and 1/3 of the chest diameter in children.
 - Compression: ventilation ratio should be 30:2.
 - Minimize interruptions to chest compressions.

1.2.5 Disability

During the initial assessment of the critically ill trauma patient, the focused disability assessment should answer the following questions: “Is there any evidence of intracranial injury? Is there any evidence of spinal cord injury?” The disability assessment includes level of consciousness, pupillary reactivity and a brief motor exam. The level of consciousness may be assessed by the AVPU scale or the Glasgow Coma Scale (GCS).

- **A**-Alert: able to answer questions and follow commands
- **V**-Verbal: responds to verbal stimuli
- **P**-Pain: responds only to painful stimuli and needs airway protection
- **U**-Unresponsive: patient needs airway protection

A dilated, unreactive (“blown”) pupil in a comatose trauma patient suggests transtentorial herniation from an intracranial injury (leading to unilateral compression of the third cranial nerve). The brief motor exam is a gross assessment of movement in all extremities looking for lateralizing signs and/or spinal cord injury level.

1.2.6 Exposure/Environment Control

Expose the patient by removing all of his or her clothes. Hypothermia is a frequent complication of trauma and the patient’s chance of survival drops with every degree drop in core temperature. Prevent hypothermia by covering the patient with blankets (after the initial assessment), by using warmed humidified air and by administering warmed IV fluids.

Techniques of Airway Management

● Chin lift and jaw thrust

The chin lift maneuver can be performed by placing two fingers under the mandible and gently lifting upward to bring the chin anterior. During this maneuver the neck should not be hyper extended. (Demonstrated in the Practical session) The jaw thrust is performed by manually elevating the angles of the mandible to obtain the same effect. (Demonstrated in the Practical session) Remember these are not definitive procedures and obstruction may occur at any time.

● Oropharyngeal airway

The oral airway must be inserted into the mouth behind the tongue and is usually inserted upside down until the palate is encountered and is then rotated 180 degrees.

Care should be taken in children because of the possibility of soft tissue damage.

● Nasopharyngeal airway

This is inserted via a nostril (well lubricated) and passed into the posterior oropharynx. It is well tolerated.

Advanced techniques

● Orotracheal intubation

If uncontrolled, this procedure may produce cervical hyper-extension. It is essential to maintain in line immobilization (by an assistant). (Demonstrated in the Practical session) Cricoid pressure may be necessary if a full stomach is suspected. The cuff must be inflated and correct placement of the tube checked by verifying normal bilateral breath sounds.

Tracheal intubation must be considered when there is a need to

- establish a patent airway and prevent aspiration
- deliver oxygen while not being able to use mask and airway
- provide ventilation and prevent hypercarbia.

This should be performed in no more than 30 seconds: if unable to intubate then ventilation of the patient must continue. Remember: patients die from lack of oxygen, not lack of an endo-tracheal tube.

● Surgical cricothyroidotomy

This is indicated in any patient where intubation has been attempted and failed and the patient cannot be ventilated. The cricothyroid membrane is identified by palpation; a skin incision that extends through the cricothyroid membrane is made.

An artery forceps is inserted to dilate the incision. A size 4–6 endotracheal tube (or small tracheostomy tube) is inserted.

Module 2: Secondary survey assessment and initial stabilization

Module Objectives:

At the end of this module the participants will be able to:

- Identify hidden injuries by patient history
- Identify hidden injuries by Head and skull examination
- Identify hidden injuries by maxillofacial examination
- Identify hidden injuries by neck and cervical spine examination.
- Identify cervical spine clearance.
- identify hidden injuries by chest and abdominal examination
- Identify hidden injuries by pelvic and genitourinary examination.
- Identify hidden injuries by extremities, back, vertebral column and spinal cord examination
- Identify pitfalls in trauma patient management.

Session 1: Secondary Survey head, skull and maxillofacial examination.

Session 2: Secondary Survey spine, chest and abdominal examination.

Session 3: Secondary Survey pelvic genitourinary extremities and back examination.

Evaluation/ Assessment

Questions and answers, participants' summaries, trainer's evaluation

Estimated Training Time

6 hours

Session 2.1: Secondary Survey head, skull and maxillofacial examination.

Specific objectives of the session

At the end of the session the participants will be able to:

- Identify hidden injuries by patient history
- Identify hidden injuries by Head and skull examination
- Identify hidden injuries by maxillofacial examination

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time 2h

Session Plan

<p>2.1.1 Define secondary survey.</p>	<p>Secondary survey:</p> <ul style="list-style-type: none"> • Focused patient history • Head to toe examination to identify injuries missed in primary survey 	<p>Questions and answers simulation</p>
<p>2.1.2 Identify hidden injuries by patient history. (30min.)</p>	<p>Mnemonic SAMPLE</p> <ul style="list-style-type: none"> • Symptoms - Pain, shortness of breath, other symptoms • Allergies to medications • Medications taken • Past medical/surgical history; Pregnancy • Last meal - to determine risk of aspiration • Events leading up to trauma; Environment of injury 	<p>Mini lectures , video scene And simulation</p>
<p>2.1.3 Identify hidden injuries by Head and skull examination (30min.)</p>	<p>head CT scanning as soon as he \ she hemodynamic stable</p> <p>Assessment using TBI scale</p>	<p>Mini Lecture, video scene And simulation</p>
<p>2.1.4 Identify hidden injuries by Maxillofacial examination.</p>	<ul style="list-style-type: none"> • Check the mouth, nose for bleeding or hematomas. • Don't insert any devices into the nose if any concerns for a 	<p>Mini lecture and video scene</p>

	<p>mid-face or basilar skull fracture</p> <ul style="list-style-type: none">• Exclude basilar skull fracture	
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Session 2.1: Secondary Survey

The secondary survey is performed only after the primary survey has been finished and all immediate threats to life have been treated. The secondary survey includes a focused patient history followed by a head-to-toe examination designed to identify additional injuries that might have been missed on the primary survey.

The trauma patient must be re-evaluated constantly to identify trends from the physical examination and laboratory findings. Administer intravenous opiates or anxiolytics in small doses to treat pain and anxiety without obscuring subtle signs of injury or causing respiratory depression.

2.1.1 Patient History

The history in the secondary examination is focused on the traumatic event and pertinent pre-operative information. The mnemonic **SAMPLE** covers the basics.

- Symptoms - Pain, shortness of breath, other symptoms
- Allergies to medications
- Medications taken
- Past medical/surgical history; Pregnancy
- Last meal - Important to determine risk of aspiration
- Events leading up to trauma; Environment related to the injury

A. Physical Examination

2.1.2 Head and Skull Examination

Head trauma causes 50% of all trauma deaths and should be the highest priority during the secondary survey. An abnormal neurologic exam raises concern for intracranial bleeding (including subarachnoid hemorrhage, intracranial hemorrhage, subdural hematoma, and epidural hematoma) which may be detected by non-contrast head computed tomography (CT). Suspect intracranial injury in any patient with focal neurologic signs, altered mental status, loss of consciousness, persistent nausea and vomiting, or headache, even if those symptoms may be explained easily by other intoxications or injuries. Any patient with suspected intracranial injuries should undergo head CT scanning as soon as he or she is hemodynamically stable.

Examination of the head involves assessing the level of consciousness, the eyes, and the skull. The level of consciousness can be quickly quantified using the **Glasgow Coma Scale** (GCS). The GCS measures eye opening, verbal response, and gross motor function. Each category has a point score, and the sum of the 3 scores is the total GCS rating. The GCS is as follows:

Eye opening (E)

- Spontaneous - 4 points

- To speech - 3 points
- To painful stimulus - 2 points
- No response - 1 point

Verbal response (V)

- Alert and oriented - 5 points
- Disoriented conversation - 4 points
- Nonsensical words - 3 points
- Incomprehensible sounds - 2 points
- No response - 1 point

Movement (M)

- Follows commands - 6 points
- Localizes to painful stimulus - 5 points
- Withdraws from painful stimulus - 4 points
- Decorticate flexion - 3 points
- Decerebrate extension - 2 points
- No response - 1 point

An abnormal GCS or altered level of consciousness is assumed due to intracranial injury, but may also be the result of intoxication, hypoxia, or hypotension.

Examine the skull for evidence of skull fractures or lacerations. Cover all open wounds and leave impaled objects in place.

Head injury management involves aggressive treatment of hypoxia and hypotension to prevent secondary brain injury, followed by immediate referral to a neurosurgeon. Maintain the mean arterial blood pressure at 90 mm Hg or above in patients with suspected intracranial injury in order to maintain cerebral perfusion. Methods to treat intracranial hypertension, such as raising the head of the bed, hyperventilation, furosemide (Lasix), and mannitol, may be considered before referring the patient.

The **Traumatic Brain Injury (TBI)** scale is as follows:

- **Mild TBI:** GCS rating of 14-15
- **Moderate TBI:** GCS rating of 9-13; requires careful monitoring to avoid hypotension or hypoxia
- **Severe TBI:** GCS rating of 8 or less; requires careful monitoring to avoid hypotension or hypoxia, but also requires intubation and admission to an intensive care setting

2.1.3. Maxillofacial Examination

Injuries to the face are rarely life-threatening unless they involve the airway. Look inside the mouth and nose for bleeding or hematomas. Examine the zygoma, maxilla and mandible for evidence of injury or instability. Do not place or insert any devices into the nose (e.g., nasogastric tube) if there is concern for a midface or basilar skull fracture. A

basilar skull fracture is suggested by the presence of Raccoon eyes (ecchymosis around the eyes), Battle's sign (ecchymosis over the mastoid), clear fluid from the ear or nose (CSF leak), a salty taste at the back of throat (CSF leak), or hemotympanum (blood behind the eardrum). Consider early intubation to protect the airway, which may become compromised later because of airway swelling or excessive secretions.

Session 2.2: Secondary Survey spine, chest and abdominal examination.

Specific objectives of the session

At the end of the session the participants will be able to:

- Identify hidden injuries by neck and cervical spine examination.
- Identify cervical spine clearance.
- Identify hidden injuries by chest examination
- Identify injuries by abdominal examination.

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Estimated training time 2 hours

Session plan

Objective	Contents	Methods \ Activities
2.2.1 Identify hidden injuries by neck and cervical spine examination (30 min.)	<ul style="list-style-type: none"> • Pharynx\ esophagus, the great vessels and spine must be evaluated in patients with penetrating trauma • Never probe neck wounds or remove impelled objects 	Questions and answers, video scene and simulation
2.2.2 Identify cervical spine clearance (30min.)	<ul style="list-style-type: none"> • All patients with any possibility of cervical spine injury must be immobilized with a hard collar. • Patients with serious cervical spine injuries may not have neurologic symptoms. • Do not leave patients on the long spinal immobilization board with a hard collar in place longer than necessary; 	Minini lecture, video scene and simulation.
2.2.3 Identify hidden injuries by chest examination (30min.)	<ul style="list-style-type: none"> • Inspect the chest for tracheal deviation, bruising, deformity • Observe the motion of the chest wall during respiration • Auscultate the heart for muffled heart sounds • Auscultate the lungs for breath sounds • Percuss the chest for hyper-resonance or dullness • Palpate the entire chest wall for tenderness, deformity, 	Questions and answers, video scene and simulation

Objective	Contents	Methods \ Activities
	crepitus and sub-cutaneous emphysema	
2.2.4 Identify hidden injuries by abdominal examination (30min.)	<p>immediate referral to a hospital if:</p> <ul style="list-style-type: none"> • Evisceration • Penetrating abdominal injuries • Any abdominal trauma accompanied by shock • Free air under the diaphragm on chest radiographs, and/or peritoneal signs 	Mini lecture video scene and simulation

Session 2.2

Neck and Cervical Spine Examination

The neck contains three very important structures anteriorly (i.e., trachea, pharynx/esophagus, great vessels) and the spine posteriorly. All these structures must be evaluated in patients with penetrating trauma to the neck. Inspect the neck for swelling, bruising, laceration, active bleeding, deformity; the position of trachea (deviation); accessory muscle use; and difficulty with swallowing. Listen for difficulty phonating, stridor and carotid bruits. Palpate for subcutaneous emphysema and focal tenderness.

Swelling from an expanding hematoma can compress or distort the airway; intubate these patients early. Never probe neck wounds or remove impaled objects. Any patient with penetrating trauma to the neck and violation of the superficial fascia and muscles should be referred to a facility where an otolaryngologist and vascular surgeon are available.

Cervical spine clearance

All patients with any possibility of cervical spine injury based on history, physical examination or mechanism of injury must be immobilized with a hard collar until a proper examination can be performed. Patients with serious cervical spine injuries may not have neurologic symptoms. Do not leave patients on the long spinal immobilization board with a hard collar in place longer than necessary; the limitation of movement increases the risk of aspiration and prolonged immobilization may lead to pressure ulceration.

Patients who can be considered for clinical cervical spine clearance must meet all five of the following criteria:

- No focal neurologic deficits
- No distracting injuries (e.g., gunshot wound, pelvic fracture, long bone fracture)
- No intoxication (e.g., alcohol, opiates)
- Fully alert, oriented and aware
- No midline neck tenderness

If the patient meets these five criteria, you may attempt to clinically clear their cervical spine. First, gently remove their cervical collar; then, instruct the patient to slowly rotate their head from side to side, and then flex and extend. If the patient develops pain or neurologic symptoms, ask the patient to stop moving and reaffix the cervical collar. If the patient can fully range their neck (rotation, extension, flexion) without pain or tingling sensations or numbness, the cervical spine is considered clinically cleared and the patient no longer requires a cervical collar. In general, removal of the collar and cervical spine clearance should be performed following completion of the secondary survey.

Chest Examination

Thoracic injuries account for 25% of trauma-related mortality. Of thoracic injuries, only 15% require surgical treatment, such as a thoracotomy and/or specialized surgical procedures; thus, most cases of thoracic trauma can be managed by any ATLS-trained physician.

Inspect the chest for tracheal deviation, bruising, and deformity, and observe the motion of the chest wall during respiration. Auscultate the heart for muffled heart sounds. Auscultate the lungs for breath sounds. Percuss the chest for hyper-resonance or dullness. Palpate the entire chest wall (including clavicles, ribs and sternum) for tenderness, deformity, crepitus and subcutaneous emphysema. The presence of tracheal deviation may indicate hemothorax or pneumothorax, and subcutaneous emphysema or bony crepitus may indicate tracheobronchial disruption or rib fractures, respectively.

Abdominal Examination

Abdominal trauma is separated into blunt and penetrating injuries. Patients are indicated for referral to a medical center with emergency surgical capabilities immediately if any of the following are present:

- Evisceration
- Penetrating abdominal injuries caused by firearms or objects
- Any abdominal trauma accompanied by shock
- Free air under the diaphragm on chest radiographs, and/or peritoneal signs

Patients with subtle blunt abdominal injuries may rapidly bleed to death. Significant amounts of blood may be present in the abdomen with no change in external appearance. Reliable abdominal assessment may be compromised by altered mental status, intoxication, or painful distracting injuries.

Examine the abdomen for surgical scars, bruising (seatbelt sign) or lacerations. Palpate gently for tenderness, peritoneal signs and rigidity. Patients with serious injuries may have unremarkable physical examinations (no signs of peritoneal irritation).

Abdominal x-rays (plain films) are not useful in the evaluation of blunt abdominal trauma. Consider other methods of invasive (e.g., diagnostic peritoneal lavage) or non-invasive evaluation (e.g., ultrasound, computed tomography). Patients may rapidly bleed to death from intra-abdominal injuries. Give fluids and blood early if concern for intra-abdominal hemorrhage, and refer the patient to a surgeon (as definitive hemorrhage control can only occur in the operating room).

Session 2.3: Secondary Survey pelvic genitourinary extremities and back examination.

Specific objectives of the session

At the end of the session the participants will be able to:

- Identify hidden injuries by pelvic and genitourinary examination.
- Identify hidden injuries by extremities, back, vertebral column and spinal cord examination
- Identify pitfalls in trauma patient management.

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time- 2hours

Session plan

Objective	Contents	Methods\ Activities
<p>2.3.1 Identify hidden injuries by pelvic and genitourinary examination. (45min.)</p>	<ul style="list-style-type: none"> • Perform rectal , perianal, genital/ vaginal examinations • Rectal tone is an indicator of spinal cord function • The perineum, vagina and genitals should be examined for ecchymosis, lacerations, bleeding and • A Foley catheter is placed unless signs of urethral injury (a high-riding prostate, blood at the urethral meatus, scrotal/perianal hematoma.) 	<p>Question and answers, Video scene, simulation</p>
<p>2.3.2 Identify hidden injuries by extremities examination. (45min.)</p>	<ul style="list-style-type: none"> • Inspect and palpate the extremities in their entirety • Assess for deformity crepitus swelling and laceration • Check the range of motion at all joints • Re-check the vascular status of 	<p>Mini lecture, Video scene and simulation</p>

Objective	Contents	Methods\ Activities
	<p>each extremity including pulses, color, capillary refill and temperature.</p>	
<p>2.3.3 Identify hidden injuries by, back, vertebral column and spinal cord examination. (30min.)</p>	<ul style="list-style-type: none"> • Inspect the flanks, palpate the entire spine for any tenderness • Look for gaps between the spine process, hematomas and defects in the posterior pelvis • Assess for hidden wounds in the gluteal and perianal regions • Complete neurologic examination (motor sensory and reflexes examination) 	<p>Mini lecture, video scene and simulation</p>

Session 2.3

Pelvis Examination

Pelvic injuries can lead to severe blood loss (up to 4-6 L), and hemorrhage is the primary cause of death in patients with pelvic ring injuries.

Inspect the pelvis for bruising, swelling and open wounds. Palpate the pelvic ring for tenderness, crepitus and widening. Gently assess for pelvic pain and stability by compression-distraction (inward and outward) of the anterior superior iliac spines. Minimize manipulation of an unstable pelvis.

Obtain a pelvis x-ray to evaluate for bony pelvic injury. For suspected pelvic fractures, bind the pelvis (pelvic stabilization) with a sheet or commercial pelvic binder to prevent further blood loss. Pelvic binding reduces unstable pelvic fractures, prevents ongoing hemorrhage and provides pain relief. When properly performed, the procedure is safe with low risk for skin necrosis or compartment syndrome.

Genitourinary Examination

Perform a rectal examination, examine the perineum, and perform a genital/vaginal examination. Rectal tone is an indicator of spinal cord function, and a patient with poor rectal tone is considered to have a spinal cord injury until proven otherwise. The rectal vault is assessed for fresh blood that might indicate an open pelvic fracture or other injury that has lacerated the rectum. The perineum, vagina and genitals should be examined for ecchymosis, lacerations, bleeding and priapism (a sign of possible spinal cord injury). A Foley (transurethral bladder) catheter is placed unless contraindicated by signs of urethral injury, such as a high-riding prostate, blood at the urethral meatus, or a scrotal/perianal hematoma.

Extremities

Evaluate the patient's extremities for sources of significant blood loss (e.g., up to 2 L from a femur fracture), risk of crush syndrome, and evidence of limb-threatening injuries, such as fracture-dislocation with neurologic injury, open fractures/joints, vascular injury (including traumatic amputation) and compartment syndrome.

Inspect and palpate the extremities in their entirety. Assess for deformity, crepitus, tenderness, swelling, bruising, and lacerations. Check the range of motion at all joints. Re-check the vascular status of each extremity, including pulses, color, capillary refill, and temperature. Worrisome exam findings include loss of a previously palpable pulse; change in pulse quality; a rapidly expanding hematoma; a cool, pale extremity; an open wound near a deformity; loss of sensation or motor function; and, a tender or firm muscle compartment.

Suspected femur fractures should be placed in traction to decrease motion, pain, blood loss, and muscle spasm. Early treatment of suspected crush syndrome with IV fluids and

osmotic diuresis can prevent subsequent myoglobin-induced renal failure. Unstable fractures or those associated with neurovascular compromise should be reduced immediately and splinted. Open fractures or joints should be covered with sterile gauze and splinted. Amputated “parts” should be cleaned with water, wrapped in moistened gauze, and placed in a plastic bag on (not in) ice. All suspected limb-threatening injuries should be immediately referred to the appropriate specialist (vascular or orthopedic surgeon). Early diagnosis and surgical treatment of a vascular injury or compartment syndrome can prevent muscle necrosis and limb loss.

Back, Vertebral Column and Spinal Cord

The back examination is often forgotten during the secondary survey, leading to potentially missed injuries. Examination of the back can identify thoracic and lumbar vertebral fractures, and flank injuries.

Logroll the patient while maintaining spinal alignment. Inspect the flanks and palpate the entire spine for any tenderness. Look for gaps between the spinous processes, hematomas and defects in the posterior pelvis. Assess for hidden wounds in the gluteal and perineal regions. Complete the neurologic examination, including motor and sensory examinations and reflexes.

Any spinal tenderness, bony step-offs, or abnormalities should prompt spinal radiography to evaluate for injury. Management of spinal fractures includes total immobilization of the spine and referral to a neurosurgical specialist. The use of high-dose methylprednisolone is no longer recommended for acute spinal cord injuries. Consider neurogenic shock (a high spinal cord injury) in any patient with hypotension and bradycardia.

Module 3: Burn, CPR, Adjuncts, Pitfalls and Transportation

Module Objectives

By the end of this module the participants will be able to:

1. Assess patients with heat, electricity and chemical burns.
2. Apply Cardio – Pulmonary Resuscitation for injured people in primary health care centers
3. Explain pitfalls and adjuncts in basic pre-hospital trauma life support
4. Transport critically ill patients safely and quickly

Session 1: Appropriate Assessment for patients with burns caused by heat, electricity etc.

Session 2: Cardio – Pulmonary Resuscitation (CPR)

Session 3: Adjuncts and Pitfalls in pre – hospital trauma life support assessment

Session 4: transportation

Evaluation/ Assessment

Questions and answers, participants' summaries, trainer's evaluation

Estimated Training Time

6 hours

Session 3.1: Appropriate Assessment for patients with burns caused by heat, electricity etc.

Specific objectives of the session

At the end of the session the participants will be able to:

- 1- Introduce the important points, for appropriate assessment of burns.
- 2- Identify criteria to consider burns as critical
- 3- List three basic steps caring for burn
- 4- Estimate the burn size by the rule of nine
- 5- Estimate the burn size in children by the rule of 18
- 6- Explain burn classification and determine the burn degree
- 7- Identify procedures for burn care

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and mini lecture

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time

2:10 hour

Session Plan

Objective	Contents	Methods\ Activities
<p>3.1.1 Introduce the important points for the appropriate assessment of burns. (15min.)</p>	<ul style="list-style-type: none"> • Severity of burn depends on: temperature of causative agent, length of exposure time, burns location on the body, size of the burn, patient's age and medical condition. • Burns causes are: (heat, electricity, chemicals and radiation). • When burns break the skin, they can cause infection, loss of body's fluids. 	<p>Brain storming</p>
<p>3.1.2 Identify criteria to consider burns as critical (15min.)</p>	<p>breathing difficulty</p> <ul style="list-style-type: none"> • Cover more than one body part • Involve the head, neck, hands, feet or genitals • Involve a child or elderly person (other than minor burns) • Are caused by chemicals, explosions or electricity 	<p>Brain storming</p>
<p>3.1.3 List three basic steps caring for burn (10min.)</p>	<ul style="list-style-type: none"> • Stop the burning • Cool the bum • Cover the burn 	<p>Questions and answers</p>
<p>3.1.4 Estimate the burn size by the rule of nines (20min.)</p>	<p>A patient's palm is approximately 1% TBSA, can be used for</p>	<p>Mini lecture 20 minutes</p>

Objective	Contents	Methods\ Activities
	estimating patchy areas. <ul style="list-style-type: none"> • Head/neck - 9% TBSA • Each arm - 9% TBSA • Anterior thorax - 18% TBSA • Posterior thorax - 18% TBSA • Each leg - 18% TBSA • Perineum - 1% TBSA 	
3.1.5 Estimate the burn size in children by the rule of nines (20min.)	Rule of nines for each year above one, add 0,5% to each leg and subtract, for the head	Mini lecture
3.1.6 Explain burn classification and determine the burn degree (30min.)	<p>First Degree Burn (superficial)</p> <ul style="list-style-type: none"> • Involves on the top layer of skin • Skin is red and dry • Usually painful • Burned area may swell • Healing usually within 5-6 days • No permanent scarring <p>Second Degree Burn (Partial Thickness)</p> <ul style="list-style-type: none"> • Involves the top layers of skin • Skin is red and has blister that may open and weep clear fluid • Usually painful • Burned area usually swells • Healing usually within 3-4 weeks • Scarring may occur 	Mini lecture

Objective	Contents	Methods\ Activities
	<p>Third Degree Burn (Full Thickness)</p> <ul style="list-style-type: none"> • Destroys all layers of skin , may destroy fat, muscle, bones, and nerves underneath • Skin -brown or black (charred) and tissues underneath may appear white • Extremely painful (or painless, if nerve endings are destroyed) • Tissue too damaged to swell • Healing process is long, may take many months • Extreme, permanent scarring that may require multiple plastic surgeries to correct. 	
<p>3.1.7Identify procedures for burn care (20 min.)</p>	<ul style="list-style-type: none"> • Explain to the patient what you are going to do. • Act quickly, be gentle, and place the patient in a comfortable position. • Stop the burning flushing the skin with large amounts of cool, clean water. • Keep the cloth wet by adding more water. • Apply a dry sterile dressing (s). <p>Provide health education to the patient, family.</p>	<p>Mini lecture</p>

Session 3.1

Burn Care

To appropriately treat patients with burns caused by heat, electricity, or chemicals.

Important Points

- The severity of a burn depends on the temperature of whatever caused the burn and the length of time the patient is exposed to it, the burn's location on the body, the size of the burn, and the patient's age and medical condition.
- Burns are described by their cause (heat, electricity, chemicals and radiation) or by their depth.
- A burn first destroys the top layer of skin. If it continues to burn, it injures or destroys the second layer of skin.
- When burns break the skin, they can cause infection and loss of fluid from the body. The body's ability to control its temperature and the patient's ability to breathe can also be affected by deep burns.
- A critical burn needs immediate medical attention and can be life threatening.

Burns are Considered Critical When They

- **Involve breathing difficulty**
- **Cover more than one body part**
- **Involve the *head, neck, hands, feet or genitals***
- **Involve a *child or elderly person (other than minor burns)***
- **Are caused by *chemicals, explosions or electricity***

Caring for Burns: 3 Basic steps

1. Stop the burning
2. Cool the burn
3. Cover the burn

3.1.6 Burn classification

First Degree Burn (Superficial)	Second Degree Burn (Partial Thickness)	Third Degree Burn (Full Thickness)
Involves on the top layer of skin	Involves the top layers of skin	Destroys all layers of skin and may destroy fat, muscle, bones, and nerves underneath
Skin is red and dry	Skin is red and has blister that may open and weep clear fluid	Skin appears brown or black (charred) and tissues underneath may appear white
Usually painful	Usually painful	Extremely painful (or painless, if nerve endings are destroyed)
Burned area may swell	Burned area usually swells	Tissue too damaged to swell
Healing usually within 5-6 days	Healing usually within 3-4 weeks	Healing process is long and may take many months
No permanent scarring	Scarring may occur	Extreme, permanent scarring that may require multiple plastic surgeries to correct

Procedures for Burn Care

1. Explain to the patient what you are going to do in a reassuring manner.
2. Patients with burns are usually very scared and in a lot of pain.
3. Act quickly, but be gentle and place the patient in a comfortable position, carefully and quickly remove any of the patient's clothing (if necessary) in order to inspect/treat the burned area.
4. Stop the burning by flushing the skin with large amounts of cool, clean water. Do not use ice or ice water other than on small superficial burns because ice causes body heat loss.
5. If the burned area cannot be immersed in cool water then apply soaked clean towels, sheets or other wet cloths (make sure that anything used is clean).
6. Keep the cloth wet and cool by adding more water as necessary.
7. After you have stopped the burning/cooled the burned area, follow the
8. Surgical Dressing Procedure and apply a dry sterile dressing (s) to the burn.
9. Be sure that the dressing is LOOSE otherwise it can cause further pain and damage to the sensitive tissue.
10. Covering the burn helps prevent infection and reduces pain.
11. Do NOT break blisters if they are present because that can increase the risk of infection. Blisters protect the raw, delicate skin underneath.
12. Do NOT use any kind of ointment on a severe burn. In general, oil-based ointments do not allow for evaporation of fluids. The usual practice is to use creams that are water-based and allow evaporation of water from the wound.

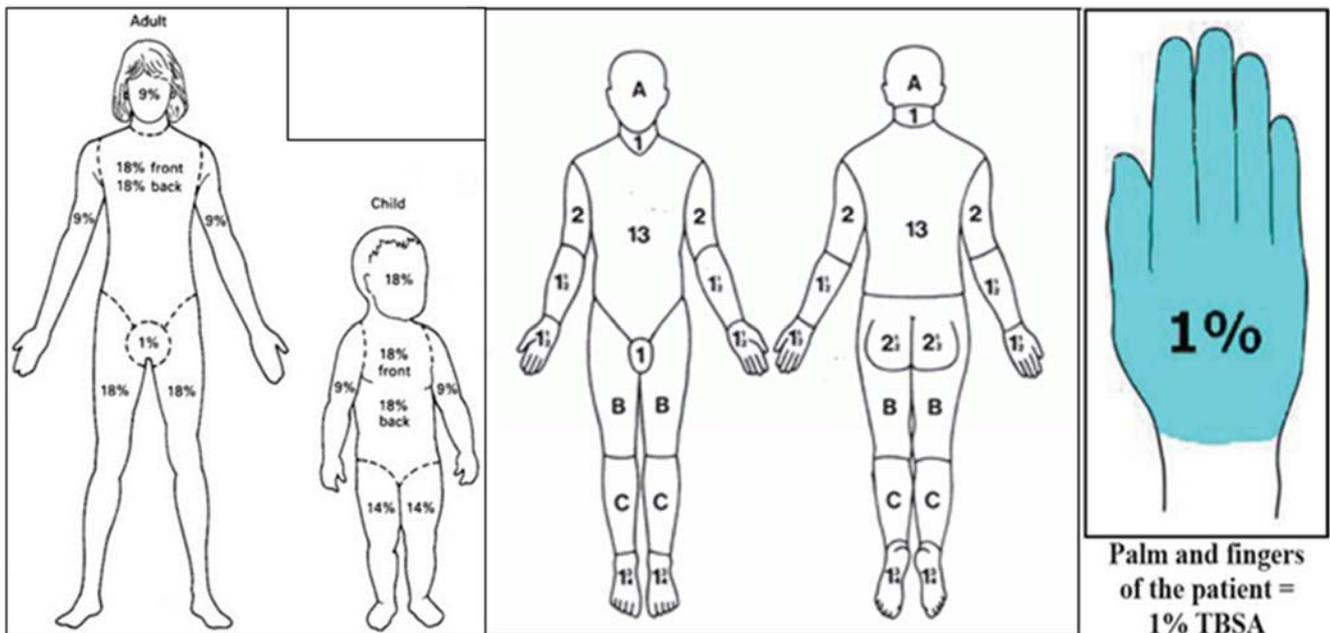
13. Provide health education to the patient and their family such as how to keep the burned area clean and dry and when to return for follow-up care.

Estimate the Burn Size by the Rule of Nines

The first step in assessing a burn and planning resuscitation involves a careful examination of all body surfaces. A standard Lund-Browder chart is readily available in most emergency departments for a quick assessment of total body surface area burns. If this is not available, the "rule of nines" is fairly accurate in adult patients.

See the rule of nines as follows. Note that a patient's palm is approximately 1% TBSA and can be used for estimating patchy areas.

- Head/neck - 9% TBSA
- Each arm - 9% TBSA
- Anterior thorax - 18% TBSA
- Posterior thorax - 18% TBSA
- Each leg - 18% TBSA
- Perineum - 1% TBSA



Age	0	1	5	10	15	Adult
A	9.5	8.5	6.5	5.5	4.5	3.5
B	2.75	3.25	4	4.5	4.5	4.75
C	2.5	2.5	2.75	3	3.25	3.5

Estimate the Burn Size by the Rule of Nines for small children

For children and infants, the Lund-Browder chart is used to assess the burned body surface area. Different percentages are used because the ratio of the combined surface area of the head and neck to the surface area of the limbs is typically larger in children than that of an adult.

Estimate the Burn Size by the Rule of Nines for small children

Anterior head	9%
Posterior head	9%
Anterior torso	18%
Posterior torso	18%
Anterior leg, each	6, 75%
Posterior leg, each	6, 75%
Anterior arm, each	4, 6%
Posterior arm each	4, 6%
Genitalia/perineum	1%

Session 3.2: Cardio-pulmonary resuscitation

Specific objectives of the session

At the end of the session the participants:

- Define CPR
- Explain importance of CPR
- Identify indications of CPR
- Describe preparation procedures in CPR.
- Explain steps of CPR
- Demonstrate chest compression in CPR
- Demonstrate ventilation in CPR
- Explain CPR administration in infants or a child

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time

2 hours

Session Plan

Objective	Content	Methods \ Activities
3.2.1 Define CPR (10min.)	CPR is a combination of chest compressions, rescue breathing	Brain storming
3.2.2 Explain importance of CPR (10min.)	CPR significantly increased cardiac arrest survival rates; CPR is chest compressions and artificial ventilation to maintain circulatory flow and oxygenation during cardiac arrest.	Questions and answers
3.2.3 Identify indications of CPR (20min.)	CPR should be performed immediately, on any person who has become unconscious and is found to be pulseless, and should be continued until a pulsatile state is established.	Brain storming
3.2.4 Describe preparation procedures in CPR. (20min.)	Positioning: Supine on a relatively hard surface, to allow effective compression of the sternum. Technique: (CPR) comprises 3 steps: CA B <ul style="list-style-type: none"> • Chest compressions • Airway check breathing 	Mini lecture, simulation

Objective	Content	Methods \ Activities
3.2.5 Explain steps of CPR (25min.)	<p>Compression Using 30 chest compressions.</p> <p>Airway Head-tilt chin-lift maneuver to open the airway and determine if the patient is breathing, airway obstruction by looking in the patient's mouth for a foreign body..</p> <p>Breathing: Give 2 rescue breaths.</p> <p>DON'T FORGET to call for the physician if available or ACLS provider. With the hands kept in place, the compressions are repeated 30 times at a rate of 100/min</p>	<p>Questions and answers Video scene, simulation</p>
3.2.7 Demonstrate ventilation in CPR (25min.)	<p>If the patient is not breathing, 2- ventilations are given via a bag-valve-mask (BVM) or the provider's mouth.</p> <ul style="list-style-type: none"> • Ensures a tight seal between the mask and the patient's face. • The bag is squeezed with 	<p>Questions and answers Video scene, simulation</p>

Objective	Content	Methods \ Activities
	<p>one hand for approximately 1 second</p> <ul style="list-style-type: none"> • The mouth-to-mouth technique is performed 	
3.2.8 Explain CPR administration in infants or a child (10min.)	Infants and children usually only have respiratory arrest and may only need the A & B	Questions and answers Video scene

Session 3.2

Cardio-Pulmonary Resuscitation (CPR):

3.2.3 Identify indications of CPR

CPR is a combination of chest compressions and rescue breathing (breathing for the person). Rescue breathing supplies the oxygen that the patient needs into the lungs and the chest compressions circulate the oxygen to the vital organs in the body.

Objectives

1. Ensure that nurses know and use appropriate procedures in administering CPR.
2. Understand the management of airway obstruction.
3. Know the definition and priorities in CPR.

3.2.2 Explain importance of CPR

Targeted education and training regarding treatment of cardiac arrest directed at emergency medical services (EMS) professionals as well as the public has significantly increased cardiac arrest survival rates, CPR consists of the use of chest compressions and artificial ventilation to maintain circulatory flow and oxygenation during cardiac arrest. A variation of CPR known as “hands-only” or “compression-only” CPR (COCPR) consists solely of chest compressions. This variant therapy is receiving growing attention as an option for lay providers (that is, nonmedical witnesses to cardiac arrest events). Several large randomized controlled and prospective cohort trials, as well as one meta-analysis, demonstrated that bystander-performed COCPR leads to improved survival in adults with out-of-hospital cardiac arrest, in comparison with standard CPR. The 2010 revisions to the American Heart Association (AHA) CPR guidelines state that untrained bystanders should perform COCPR in place of standard CPR

3.2.3 indications of CPR

CPR should be performed immediately on any person who has become unconscious and is found to be pulseless. Assessment of cardiac electrical activity via rapid “rhythm strip” recording can provide a more detailed analysis of the type of cardiac arrest, as well as indicate additional treatment options.

Although prompt defibrillation has been shown to improve survival for VF and pulseless VT rhythms, CPR should be started before the rhythm is identified and should be continued while the defibrillator is being applied and charged. Additionally, CPR should be resumed immediately after a defibrillation shock until a pulsatile state is established. This is supported by studies showing that “pre-shock pauses” in CPR result in lower rates of defibrillation success and patient recovery

3.2.4 Preparation for CPR

I-Equipment

CPR, in its most basic form, can be performed anywhere without the need for specialized equipment but it is advisable to use CPR board, mask gloves and other protections if available, an additional device employed in the treatment of cardiac arrest is an Automatic External Defibrillator (AED). This device provides an electrical shock to the heart via 2 electrodes placed on the patient's chest and can restore the heart into a normal perfusion rhythm. Regardless of the equipment available, proper technique is essential.

II-Positioning

CPR is most easily and effectively performed by laying the patient supine on a relatively hard surface, which allows effective compression of the sternum. Delivery of CPR on a mattress or other soft material is generally less effective the use of CPR board is recommended.

The health care provider giving compressions should be positioned high enough above the patient to achieve sufficient leverage, so that he or she can use body weight to adequately compress the chest.

III- Technique

In its full, standard form, cardiopulmonary resuscitation (CPR) comprises 3 steps: CA B

- Chest compressions
- Airway check
- Breathing

to be performed in that order in accordance with the 2010 American Heart Association (AHA) guidelines.

3.3.5 STEPS:

1. Compression

CPR is initiated using 30 chest compressions.

2. Airway

Perform the head-tilt chin-lift maneuver to open the airway and determine if the patient is breathing, rule out airway obstruction by looking in the patient's mouth for a foreign body blocking the patient's airway. CPR in the presence of an airway obstruction results in ineffective ventilation/oxygenation and may lead to worsening hypoxemia.

3. Breathing:

Give 2 rescue breaths.

DON'T FORGET to call for the physician if available or ACLS provider.

Check the carotid or femoral pulse.

Repeat the cycle pulse returns or the patient is transferred to definitive care according to the ACLS provider.

Procedures

3.2.6 Chest compression

The heel of one hand is placed on the patient's sternum, and the other hand is placed on top of the first, fingers interlaced. The elbows are extended, locked and the provider leans directly over the patient. The provider presses down, compressing the chest at least 2 in. The chest is released and allowed to recoil completely.

With the hands kept in place, the compressions are repeated 30 times at a rate of 100/min followed by 2 breaths. The key thing to keep in mind when doing chest compressions during CPR is to push fast and hard. Care should be taken not to lean on the patient between compressions, as this prevents chest recoil and worsens blood flow.

When done properly, CPR can be quite fatiguing for the provider. If possible, in order to give consistent, high-quality CPR and prevent provider fatigue or injury, new providers should intervene every 2-3 minutes (i.e., providers should swap out, giving the chest compressor a rest while another rescuer continues CPR).

3.2.7 Ventilation

If the patient is not breathing, 2 ventilations are given via a bag-valve-mask (BVM) or if not available the provider's mouth.

The BVM or invasive airway technique is performed as follows:

- The provider ensures a tight seal between the mask and the patient's face.
- The bag is squeezed with one hand for approximately 1 second, forcing at least 500 mL of air into the patient's lungs.
- The mouth-to-mouth technique is performed as follows (see the video below):
 - The nostrils of the patient are pinched closed to assist with an airtight seal
 - The provider puts his mouth completely over the patient's mouth
 - The provider gives a breath for approximately 1 second with enough force to make the patient's chest rise
- Effective mouth-to-mouth ventilation is determined by observation of chest rise during each exhalation. Failure to observe chest rise indicates an inadequate mouth seal or airway occlusion. As noted (see above), 2 such exhalations should be given in sequence after 30 compressions (the 30:2 cycle of CPR). When breaths are completed, compressions restarted.

3.2.8 Administering CPR to an Infant or Child

Infants and children usually only have respiratory arrest (stopped breathing) and may only need the A & B (Airway and Breathing). The infant or child's airway may be blocked by food, a small object such as a coin or toy or fluids such as water (in drowning), saliva, or blood.

1. Clear and open the airway.
2. If necessary, administer abdominal thrusts by straddling the child's legs; position your hands by placing the heel of one hand on the middle of the abdomen just above the

umbilicus with your fingers pointing toward the child's head and the one hand on top of the other.

3. Confirm that the infant/child is unconscious: attempt to rouse by shaking and shouting.
4. Call for help if available.
5. Position the infant/child so that they are lying flat, on his or her back and on a level surface. CPR does not work as well if the infant/child is sitting up or is on a soft surface like a mattress.
6. Confirm the absence of spontaneous breathing then, tilt the infant/child's head back (to avoid getting air in the stomach), use the pediatric bag mask valve or close the infant/child's mouth and seal your mouth around the infant/child's nose. Breathe SLOWLY into the infant/child just enough to make the chest rise.
7. Give 5 initial breaths. Each breath should last about 1 second.
8. Check pulse and confirm absence, and begin chest compressions. For an infant, use 2 fingertips; for a child, use the palm of one hand. Place your fingers/palm of the hand on the breast bone in the middle of the infant/ child's chest. Give 15 chest compressions.
9. The 15 chest compressions should take about 9 seconds to administer.
10. Continue this cycle of 15 compressions and 1 breath for about 1 minute, and then recheck pulse and breathing. Check every few minutes (at least every 5 minutes).
11. If pulse is absent, continue CPR until help arrives or the infant/child is declared dead by the physician.

Session 3.3: Adjunct and Pitfalls in Pre – Hospital Trauma Life Support

Specific objectives of the session

At the end of the session the participants:

- 1- Identify adjuncts in pre – hospital trauma life support assessment
- 2- Define pitfalls in pre – hospital trauma life support assessment
- 3- Identify Pitfalls in pre – hospital trauma life support assessment

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time

50 minutes

3.2.2 Definition of Pitfalls in pre – hospital Trauma Life Support Assessment Patient

Objectives	Contents	Methods\ Activities
3.3.1 Identify adjuncts in pre-hospital trauma life support assessment (20min.)	<ul style="list-style-type: none"> • Plain films • Ultrasound • Laboratory studies • Blood preparations • Urinary and gastric catheterization • Temperature monitoring 	Brain storming
3.3.2 Define pitfalls in pre-hospital trauma life support assessment. (20min.)	Are concealed danger or trap to an unsuspecting person. Potential human errors, associated latent failures in a system of care	Questions and answers
3.3.3 Identify six pitfalls in pre – hospital trauma life support (20min.)	<ul style="list-style-type: none"> • Focusing on the obvious injury rather than using a systematic approach • Failing to anticipate a difficult airway • Failing to protect the cervical spine when managing the airway • Not recognizing an esophageal intubation • Sealing an open pneumothorax : can lead to tension pneumothorax • Not recognizing compensated hemorrhagic shock 	Discussion in planary

Session 3.3

Management

The term “pitfall” refers to a concealed danger or trap to an unsuspecting person. In the context of this curriculum it refers to situations encountered in the management of trauma that may result in the clinician being misled or rendered unaware, resulting in errors and adverse outcomes. Any discussion of clinical management pitfalls is, almost by definition, a discussion of potential human errors as well as associated latent failures in a system of care. While the focus of this curriculum is on individual decision making and potential practitioner – based errors, practitioners are increasingly being viewed as one element in a complex system of care.

Practitioner errors in this context are increasingly being viewed more as manifestations of system based failure (inadequate training, insufficient backup, hard – to – use equipment, fatigue, etc.) than as avoidable lapses in expected human behavior.

Pitfalls in pre – hospital trauma life support

- Focusing on the obvious injury rather than using a systematic approach (primary and secondary survey)
- Failing to anticipate a difficult airway
- Failing to protect the cervical spine when managing the airway
- Not recognizing an esophageal intubation
- Sealing an open pneumothorax on all four sides: can lead to tension pneumothorax
- Not recognizing compensated hemorrhagic shock
- Attributing tachycardia to pain without searching for occult hemorrhage
- Attributing hemorrhagic shock to a head injury
- Administering large volumes of crystalloid to a patient in hemorrhagic shock: they need blood
- Failing to fully undress, roll, and examine a patient: leads to missed injuries
- Blindly probing wounds in the neck, chest or abdomen to gauge their depth: can lead to uncontrolled hemorrhage
- Blindly clamping within a wound to stop it from bleeding: can lead to nerve injury
- Assuming a patient with an altered level of consciousness is intoxicated
- Placing a nasogastric tube in a patient with a midface or basilar skull fracture: can lead to intracranial tube placement
- Relying on physical exam alone to diagnose an intra-abdominal injury: serious injuries may present with minimal findings initially
- Failing to recognize that penetrating injuries below the nipple line may enter the peritoneal cavity
- Failing to bind an unstable pelvis or place a femur fracture in traction
- Placing a Foley catheter in a patient with a urethral disruption: can convert a partial urethral tear into a complete tear

- Waiting for a loss of pulses before recognizing a compartment syndrome

Session 3.4: Transport of critically ill patients

Specific objectives of the session

At the end of the session the participants will be able to:

- Explain the importance of quick And safe transportation critically ill patients
- List considerations of planning and preparation of critically ill patients
- Explain effective communication procedures
- Explain effective stabilization necessitates

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time

1hour

Session Plan

Objective	Content	Methods/ Activities
3.4.1 Explain the importance of quick And safe transportation critically ill patients (15min.)	Transporting patients requires good communication, planning and appropriate staffing. Patient must be effectively stabilized before departure. Patients should be transported only if they are going to get a higher level of care.	Questions and answers
3.4.2 List considerations of planning and preparation of critically ill patients (15min.)	<ul style="list-style-type: none"> • the type of transport (car, land rover, boat etc.) • the personnel to accompany the patient • the equipment and supplies required en route for routine and emergency treatment • potential complications • the monitoring and final packaging of the patient. 	Brain storming
3.4.3 Explain effective communication procedures (15min.)	<ul style="list-style-type: none"> • the receiving center • the transport service • escorting personnel • the patient and relatives. 	Question and answers
3.4.4 Explain effective stabilization necessitates (15min.)	<ul style="list-style-type: none"> • prompt initial resuscitation • control of hemorrhage and maintenance of the circulation • immobilization of fractures • analgesia. 	Brain Storming

Session 3.4

Transport of Critically Ill Patients

3.4.1 Transporting patients has risk. It requires good communication, planning and appropriate staffing. Any patient who requires transportation must be effectively stabilized before departure. As a general principle, patients should be transported only if they are going to a facility that can provide a higher level of care.

3.4.2 Planning and preparation include consideration of:

- The type of transport (car, land rover, boat etc.)
- The personnel to accompany the patient
- The equipment and supplies required en route for routine and emergency treatment
- Potential complications
- The monitoring and final packaging of the patient.

3.4.3 Effective communication is essential with:

- The receiving center
- The transport service
- Escorting personnel
- The patient and relatives.

3.4.4 Effective stabilization necessitates:

- Prompt initial resuscitation
- Control of hemorrhage and maintenance of the circulation
- Immobilization of fractures
- Analgesia.

Remember: if the patient deteriorates, re-evaluate the patient by using the primary survey, checking and treating life-threatening conditions, then make a careful assessment focusing on the affected system.

Module 4: Glasgow Coma Scale

Module Objectives:

At the end of this module the participants will be able to:

- Identify GCS.
- Implement GCS for trauma patient's assessment.

Session 1: Glasgow coma scale.

Session 2: Traumatic brain injury scale (TBI).

Evaluation/ Assessment

Questions and answers, participants' summaries, trainer's evaluation

Estimated Training Time

2:20 hour

Session 4.1: Glasgow Coma Scale

Specific objectives of the session

At the end of the session the participants:

- 1- Define Glasgow Coma Scale
- 2- Identify the three measured responses
- 3- Explain grades of best motor response
- 4- Explain the grades of best verbal response
- 5- Explain the grades of eye opening

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time

1 hour

Session plan

Objectives	Contents	Methodology\ Activities
4.1.1 Define Glasgow Coma Scale (10min.)	Reliable , universally and comparable way of recording the conscious state of a person	Question and answers
4.1.2 Identify the three measured responses (10min.)	<ul style="list-style-type: none"> • Best motor response - maximum score -6 • Best verbal response - maximum score - 5 • Eye opening - maximum score -4 	Brain storming
4.1.3 Explain grades of best motor response (15min.)	<p>6- Patient does simple things you ask.</p> <p>5- Localizing response to pain.</p> <p>4- Pulls limb away from painful stimulus.</p> <p>3- Flexor response to pain.</p> <p>2- Extensor posturing to pain.</p> <p>1- No response to pain.</p>	Question and answers
4.1.4 Explain the grades of best verbal response (15 min.)	<p>5- Oriented.</p> <p>4- Confused conversation.</p> <p>3- Inappropriate speech.</p> <p>2- Incomprehensible speech.</p> <p>1- No verbal response.</p>	Question and answers
4.1.5 Explain the grades of eye opening (10min.)	4- Spontaneous eye opening.	Question and answers

Objectives	Contents	Methodology\ Activities
	3- Eye opening in response to speech 2- Eye opening in response to pain. 1- No eye opening.	

Glasgow Coma Scale

The Glasgow coma scale (GCS) is a reliable and universally comparable way of recording the conscious state of a person. Three types of response are measured, and added together to give an overall score. The lower the score the lower the patient's conscious state. The GCS is used to help predict the progression of a person's condition.

The three responses measured are:

Best motor response - maximum score of 6

Best verbal response - maximum score of 5

Eye opening - maximum score of 4

The lowest score for each category is 1, therefore the lowest score is 3 (no response to pain + no verbalization + no eye opening).

A GCS of 8 or less indicates severe injury, one of 9-12 moderate injury, and a GCS score of 13-15 is obtained when the injury is minor

Grades of Best Motor Response

- 6 Carrying out request ('obeying command') -patient does simple things you ask.
- 5 Localizing response to pain.
- 4 Withdrawal to pain - pulls limb away from painful stimulus.
- 3 Flexor response to pain - pressure on nail bed causes abnormal flexion of limbs - decorticate posture.
- 2 Extensor posturing to pain - stimulus causes limb extension - decerebrate posture.
- 1 No response to pain.

Grades of Best Verbal Response

- 5 Oriented - patient knows who and where they are, and why, and the year, season and month.
- 4 Confused conversation - patient responds in conversational manner, with some disorientation and confusion.
- 3 Inappropriate speech - random or exclamatory speech, with no conversational exchange.
- 2 Incomprehensible speech - no words uttered; only moaning.
- 1 No verbal response.

Eye opening

- 4 Spontaneous eye opening.
- 3 Eye opening in response to speech - that is, any speech or shout.
- 2 Eye opening in response to pain.
- 1 No eye opening.

Session 4.2: Traumatic Brain Injury

Specific objectives of the session

At the end of the session the participants:

- 1- Define traumatic brain injury
- 2- Explain symptoms of TBI
- 3- Identify TBI treatment
- 4- Explain TBI prognosis

Trainer preparation

- Review the reading material and the session plan.
- Prepare the presentation as appropriate and as recommended in the method column of the session plan, or write the information on a flipchart or board where all participants can see it.
- Prepare copies of the reference materials/handouts and exercises.
- Arrange the training room.

Methods and activities

Exercises, questions and answers, discussion in plenary, brain storming and simulation.

Resources

- Reference material/handouts: features of the team, ways of operating successful teams, the role of the manager in a team, the difference between groups and teams, The process of team development, and characteristics of effective teams.
- Other: newsprint on easel, markers, masking tape, LCD projector

Evaluation/assessment

Questions and answers, trainer's observation and participant's summaries

Trainer

Experienced with management of primary health care in Iraq

Estimated training time

1:20 hour

Session plan

Objective	Contents	Methods \ Activities
4.2.1 Define traumatic brain injury 20 Minutes	Occurs when a sudden trauma causes damage to the brain	Question and answers
4.2.2 Explain symptoms of TBI 20 minutes	<ul style="list-style-type: none"> • Mild TBI: patient may remain conscious or may experience a loss of consciousness for a few seconds or minutes • Moderate or severe loss of coordination, increased confusion, restlessness or agitation 	Brain storming
4.2.3 Identify TBI treatment 20 minutes	<ul style="list-style-type: none"> • Little can be done to reverse the initial brain damage caused by trauma • Medical personnel should try to stabilize an individual with TBI and focus on preventing further injury 	Mini lecture
4.2.4 Explain TBI prognosis 20 minutes	Approximately half of severely head-injured patients will need surgery to remove or repair hematomas or contusions	Discussion in plenary

4.2.1 What is Traumatic Brain Injury?

Traumatic brain injury (TBI), a form of acquired brain injury, occurs when a sudden trauma causes damage to the brain. TBI can result when the head suddenly and violently hits an object, or when an object pierces the skull and enters brain tissue.

4.2.2 Symptoms of a TBI

can be mild, moderate, or severe, depending on the extent of the damage to the brain. A person with a mild TBI may remain conscious or may experience a loss of consciousness for a few seconds or minutes. Other symptoms of mild TBI include headache, confusion, lightheadedness, dizziness, blurred vision or tired eyes, ringing in the ears, bad taste in the mouth, fatigue or lethargy, a change in sleep patterns, behavioral or mood changes, and trouble with memory, concentration, attention, or thinking. A person with a moderate or severe TBI may show these same symptoms, but may also have a headache that gets worse or does not go away, repeated vomiting or nausea, convulsions or seizures, an inability to awaken from sleep, dilation of one or both pupils of the eyes, slurred speech, weakness or numbness in the extremities, loss of coordination, and increased confusion, restlessness, or agitation.

4.2.3 Is there any treatment?

Anyone with signs of moderate or severe TBI should receive medical attention as soon as possible. Because little can be done to reverse the initial brain damage caused by trauma, medical personnel try to stabilize an individual with TBI and focus on preventing further injury. Primary concerns include insuring proper oxygen supply to the brain and the rest of the body, maintaining adequate blood flow, and controlling blood pressure. Imaging tests help in determining the diagnosis and prognosis of a TBI patient. Patients with mild to moderate injuries may receive skull and neck X-rays to check for bone fractures or spinal instability. For moderate to severe cases, the imaging test is a computed tomography (*CT*) scan. Moderately to severely injured patients receive rehabilitation that involves individually tailored treatment programs in the areas of physical therapy, occupational therapy, speech/language therapy, physiatry (physical medicine), psychology/psychiatry, and social support.

4.2.4 What is the prognosis?

Approximately half of severely head-injured patients will need surgery to remove or repair hematomas (ruptured blood vessels) or contusions (bruised brain tissue). Disabilities resulting from a TBI depend upon the severity of the injury, the location of the injury, and the age and general health of the individual. Some common disabilities include problems with cognition (thinking, memory, and reasoning), sensory processing (sight, hearing, touch, taste, and smell), communication (expression and understanding), and behavior or mental health (depression, anxiety, personality changes, aggression, acting out, and social inappropriateness). More serious head injuries may result in stupor, an unresponsive state, but one in which an individual can be aroused briefly by a strong stimulus, such as sharp pain; coma, a state in which an individual is totally unconscious, unresponsive, unaware, and unarousable; vegetative state, in which an individual is unconscious and unaware of his or her surroundings, but continues to have a sleep-wake cycle and periods of alertness; and a persistent vegetative state (PVS), in which an individual stays in a vegetative state for more than a month.

What research is being done?

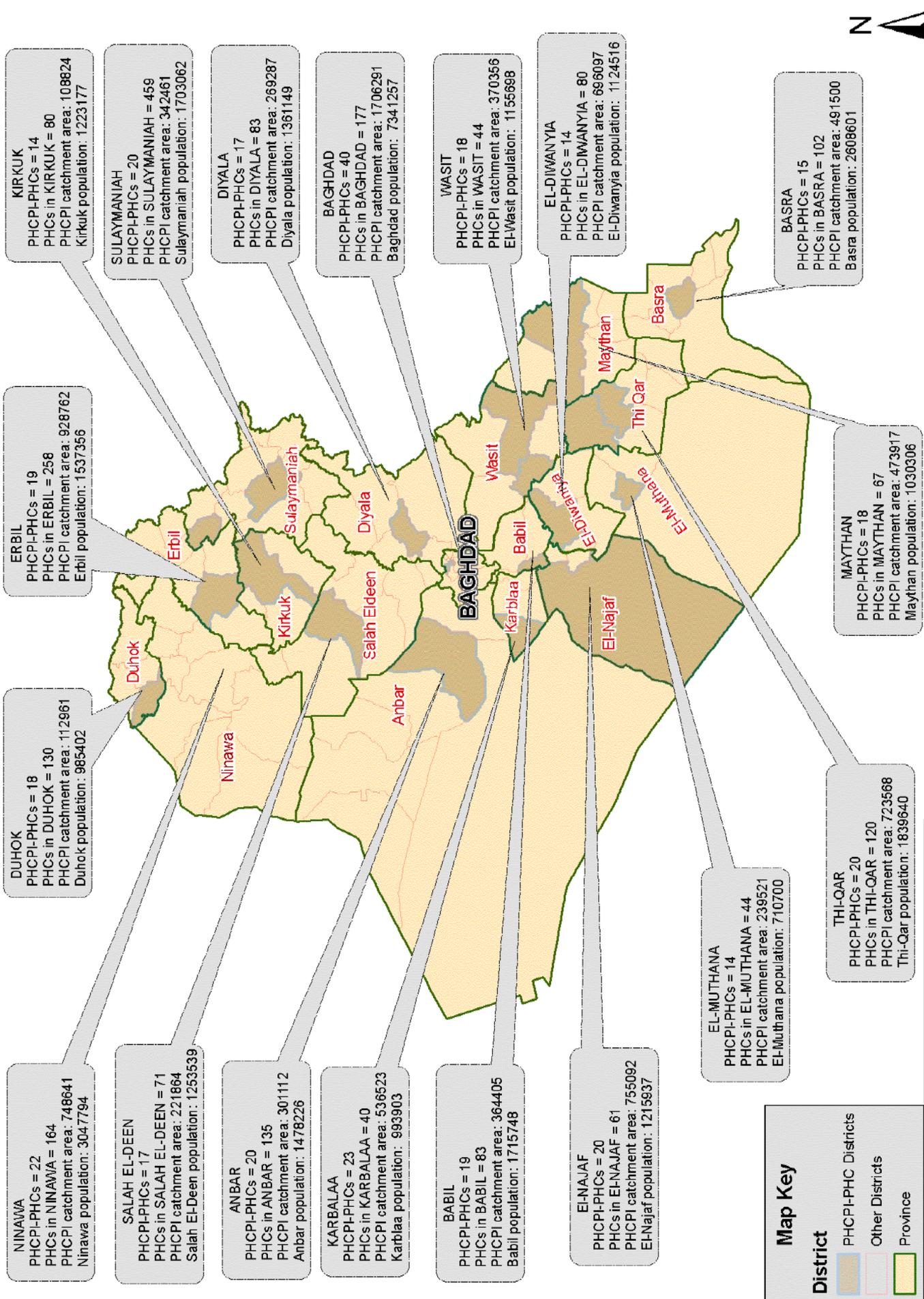
The National Institute of Neurological Disorders and Stroke (NINDS) conducts TBI research in its laboratories at the National Institutes of Health (NIH) and also supports TBI research through grants to major medical institutions across the country. This research involves studies in the laboratory and in clinical settings to better understand TBI and the biological mechanisms underlying damage to the brain. This research will allow scientists to develop strategies and interventions to limit the primary and secondary brain damage that occurs within days of a head trauma, and to devise therapies to treat brain injury and improve long-term recovery of function.

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PHCPI-PHCs population mapped to IRAQ population



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