



PCP Autonomous IV Program Module II

Advanced Fluid Management/Intravenous Therapy

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2014 Ontario Base Hospital Group Education Subcommittee

Advanced Fluid Management/Intravenous Therapy

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Section 1.0 - Summary

Rural Remote Modular Program for Advanced Care Paramedic Education

The Rural & Remote Working Group, a subcommittee of the Medical Advisory Committee of the Ontario Base Hospital Group (OBHG), has provided a template for the development of an Advanced Care Paramedic (ACP) training curriculum in a modular format.

The objectives of the Working Group were to provide various stakeholders, i.e. Upper Tier Municipalities (UTMs), Emergency Medical Services (EMS) Directors and recognized educational institutions with the module outlines detailed in the group's position paper entitled, "Advancing ALS in Rural and Remote Communities Throughout Ontario (May 2000)". The modules are matched to the National Occupational Competency Profiles (NOCP) which were developed by the Paramedic Association of Canada (PAC) and the Canadian Medical Association (CMA).

The need to develop standardized curriculum in Ontario and across Canada is critical. The benefits of standardization of the training modules are numerous. These include the assurance that minimum acceptable levels of training are delivered, portability of the skillset throughout Ontario is possible and progression of the training to full ACP status may one day be possible.

The current Ambulance Act regulations state that ACP training programs must be approved by the Director of the MoHLTC – EHS Branch. The Ministry's position is that ACP training programs must be CMA accredited (pending or actual) in order to be approved. In addition to the above, the MAC recently reiterated the position that any modular training packages be reviewed and approved by the MAC prior to implementation.

The National Occupational Competency Profiles provide the blueprint for all Advanced Care Paramedic training programs in Canada. An application has **not** been made to the CMA to seek accreditation of the Rural Remote training modules at this time, however, the training outcomes of the NOCP will be "mirrored" in the modules.

Module II

Module 2 is intended to build on the advanced assessment and critical thinking skills in Module 1 and focus on IV cannulation and fluid therapy. Modules 1 & 2 cannot be used toward the Advanced Care Paramedic certification at this time. However, in an effort to facilitate the advancement of Paramedic education in rural and remote communities in Ontario, it is hoped that recognized educational institutions will one day adopt the Rural Remote Modular concept and seek Canadian Medical Association (CMA) accreditation.



Section 2.0 - Limitation

Completion of Module II - Advanced Fluid Management/Intravenous Therapy cannot be used as a prerequisite for application to write the Provincial Advanced Care Paramedic Certification Exam. Furthermore, the completion of any other cannot be used as a prerequisite for application to write the Provincial Advanced Care Paramedic Certification Exam.

Section 3.0 – Scope of Practice

The following table outlines the changes to the Primary Care Paramedic skillset upon successful completion of the module. The skillset for the PCP will expand as each module is completed.

√ = review and/or expected knowledge

X = change or expansion of scope

PROCEDURE/MEDICATION	PCP	PCP IV MODULE I	PCP IV MODULE II
Pulse oximeter monitoring	√	√	√
Defibrillation (SAED or Manual)	√	√	√
Intravenous Maintenance – Adult (Crystalloid)	√	√	√
Intravenous Access saline lock	X	X	√
Intravenous Access with solution and drip set	X	X	√
Fluid Bolus	X	X	√
Urinary Catheter – transport	√	√	√
ASA (PO)	√	√	√
EPI (IM)	√	√	√
EPI (NEB)	√	√	√
Glucagon (IM)	√	√	√
Glucose Paste	√	√	√
Dextrose (IV)	X	X	√
Nitroglycerin (SL)	√	√	√
Oxygen	√	√	√
Salbutamol	√	√	√
ECG Interpretation (testing)	X	√	√

Explanation of Changes for Module II

The above table identifies only one change in the Primary Care Skillset. The change is the addition of Intravenous Access. All other objectives taught in Module II do not affect or increase the skillset.

NOTE: Further enhancements to the ALS PCS PCP auxiliary scope will as per local authorization

Section 4.0 – Learning Outcomes

OBJECTIVES

In completing this module, the primary care paramedic will:

Effective

- Maintain a patient’s dignity at all times
- Use appropriate language
- Maintain patient confidentiality
- Demonstrate ethical behaviour
- Function as a patient advocate
- Accept and deliver constructive feedback
- Function within the scope of practice defined by provincial regulating agencies and local medical control
- Explain to the patient, when asked, “patient rights”, and be mindful of those rights on the role of provider
- Work collaboratively with other members of the healthcare team
- Demonstrate reasonable and prudent judgement
- Practice effective problem solving skills

Cognitive

- Describe the anatomy and physiology of both upper and lower extremities, as related to intravenous therapy
- Describe pathophysiology of the immune and cardiovascular system, hypovolemia, hypo perfusion and shock.
- Identify factors that effect vasodilation
- List indications and contraindications for IV’s
- Describe the properties of normal saline, its uses and overdose symptom logy
- Describe circumstances where a “bolus” of NS may be required

Psychomotor

Simulated

- Demonstrate the selection of appropriate equipment for given situations
- Demonstrate proper technique in “flushing” and IV line with natural saline
- Identify criteria for vein selection
- Demonstrate aseptic techniques required for IV initiation
- Identify steps required to secure IV cannula and IV tubing
- Identify steps required to secure a saline lock
- “Troubleshooting” difficult IV’s including removing air bubbles, and checking for IV patency.

- Demonstrate competence in giving infusions under pressure

Psychomotor (cont'd)

Simulated

- Calculate IV “drip rates”
- Identify “interstitial” IV’s

CLINICAL

- Demonstrate proper technique in intravenous access on human subjects



Section 5.0 - Program Design

Course Layout

Entrance Requirements

- Primary Care Paramedic (PCP) student in 2nd year* or Certified PCP
- Good standing with local Paramedic Base Hospital Program (certified PCP)
- Current Certification in ALS PCS PCP Core medical directives
- Successful completion of Module I – Advanced Assessment/Critical Thinking

Pre Course Material (Provided at least 4 weeks prior to the commencement of training)

- IV Learners Package
- IV and Fluid Therapy Medical Directives (current version of the ALS PCS)
- PowerPoint Material covering I/V Theory, Practical and Medication Administration
- Review Fluid & Electrolytes

Total Hours – 60

Classroom/Lab

- "A" - IV Therapy, Fluid Resuscitation
- "B" - IV Theory/Practice Labs
- Students will complete a minimum of 20 simulated IV starts on mannequin arm under the supervision of a Base Hospital recognized instructor. This will be documented on check sheets provided.

Total Hours –

Clinical

- "C" - Clinical – IV Rotation
- 20 IV starts minimum on live patients with a minimum 70% success rate
- Signed off by Clinical Instructor
- Written Test

Total Hours –

Consolidation

- "D" – Consolidation
- Students may complete the remainder of their IV starts in the field under the supervision of a recognized preceptor at the Base Hospital's discretion. If Base Hospital qualified preceptors are not available, then all IV starts must be completed in the hospital setting.



Section 6.0 - Evaluation Process

Evaluation

- Exam covering all material from Modules 1 & 2 with a pass grade of 70% - 2 hours
- Certified to provide Intravenous/Fluid Therapy

Section 7.0 - Comparison to the National Occupational Competency Profiles

Development of the curriculum for the individual modules is based on the Paramedic Association of Canada (PAC) and Canadian Medical Association's (CMA) National Occupational Competency Profiles (NOCP). The following NOCPs apply to this training program.

Performance Environment and Performance Actions

For each Specific Competency the profiles list a Performance Environment. The Performance Environment specifies the setting in which the practitioner must demonstrate competence. The following notation and definitions apply to Performance Environments:

Performance Environment	Definition
N	The competency is <i>not applicable</i> to the practitioner.
X	The practitioner should have a <i>basic awareness</i> of the subject matter of the competency. The practitioner must have been provided with or exposed to basic information on the subject, but evaluation is not required.
A	The practitioner must have demonstrated an <i>academic understanding</i> of the competency. Individual evaluation is required.
S	The practitioner must have demonstrated the competency in a <i>simulated setting</i> . Individual evaluation of physical application skills is required, utilizing any of the following: practical scenario, skill station, mannequin, cadaver, live subject (human or non-human). In competency Areas 4 and 5, skills must be demonstrated on a human subject where legally and ethically acceptable.
C	The practitioner must have demonstrated the competency in a <i>clinical setting</i> with a patient. Individual evaluation of physical application skills is required. An acceptable clinical setting is any of the following: hospital health clinic, medical office, nursing home. Alternate clinical settings must be appropriate to the Specific Competency being evaluated.
P	The practitioner must have demonstrated the competency in a field <i>Preceptorship</i> with a patient. Individual evaluation of physical application skills is required. An acceptable field preceptorship setting is a land ambulance service. Alternate field preceptorship settings must be appropriate to the Specific Competency being evaluated.

Section	Performance Environment	Session * PL – Prior Learning
GENERAL COMPETENCY 1.1 Function as a professional.	A	PL
GENERAL COMPETENCY 1.3 Possess an understanding of the medico-legal aspects of the profession.	A	PL
GENERAL COMPETENCY 2.1 Practice effective oral communication skills.		
2.1.a Deliver an organized, accurate and relevant report utilizing telecommunication devices.	A	PL, Module I
2.1.b Deliver an organized, accurate and relevant verbal report.	A	PL, Module I
2.1.c Deliver an organized, accurate and relevant patient history.	A	PL, Module I
2.1.d Provide information to patient about their situation and how they will be treated.	A	PL, Module I

2.1.e Interact effectively with the patient, relatives and bystanders who are in stressful situations.	A	PL, Module I
2.1.f Speak in language appropriate to the listener.	A	PL, Module I
2.1.g Use appropriate terminology.	A	PL, Module I
GENERAL COMPETENCY 2.2 Practice effective written communication skills.		
2.2.a Record organized, accurate and relevant patient information.	A	PL, Module I
GENERAL COMPETENCY 2.4 Practice effective interpersonal relations.	A	PL
GENERAL COMPETENCY 3.1 Maintain good physical and mental health.	A	PL
GENERAL COMPETENCY 3.3 Create and maintain a safe work environment.	A	PL
GENERAL COMPETENCY 4.1 Conduct triage.	A	PL
GENERAL COMPETENCY 4.2 Obtain patient history.		
4.2.a Obtain list of patient's allergies.	A	PL, Module I
4.2.b Obtain list of patient's medications	A	PL, Module I
4.2.c Obtain chief complaint and / or incident history from patient, family members and / or bystanders.	A	PL, Module I
4.2.d Obtain information regarding patient's past medical history.	A	PL, Module I
4.2.e Obtain information about patient's last oral intake.	A	PL, Module I
4.2.f Obtain information regarding incident through accurate and complete scene assessment.	A	PL, Module I
GENERAL COMPETENCY 4.3 Conduct complete physical assessment demonstrating appropriate use of inspection, palpation, percussion and auscultation, and interpret findings.		
4.3.a Conduct primary patient assessment and interpret findings.	A/S	PL, Module I
4.3.b Conduct secondary patient assessment and interpret findings.	A/S	PL, Module I
4.3.c. Conduct cardiovascular system assessment and interpret findings.	A/S	PL, Module I
4.3.d Conduct neurological system assessment and interpret findings.	A/S	PL, Module I
4.3.e Conduct respiratory system assessment and interpret findings.	A/S	PL, Module I
4.3.f Conduct obstetrical assessment and interpret findings.	A/S	PL, Module I
4.3.g Conduct gastrointestinal system assessment and interpret findings.	A/S	PL, Module I
4.3.h Conduct genitourinary system assessment and interpret findings.	A/S	PL, Module I
4.3.i Conduct integumentary system assessment and interpret findings.	A/S	PL, Module I
4.3.j Conduct musculoskeletal assessment and interpret findings.	A/S	PL, Module I
4.3.k Conduct assessment of the immune system and interpret findings.	A/S	PL, Module I
4.3.l Conduct assessment of the endocrine system and interpret findings.	A/S	PL, Module I
4.3.m Conduct assessment of the ears, eyes, nose and throat and interpret findings.	A/S	PL, Module I
4.3.n Conduct multisystem assessment and interpret findings.	A/S	PL, Module I
4.3.o Conduct neonatal assessment and interpret findings.	A/S	PL
4.3.p Conduct psychiatric assessment and interpret findings.	A/S	PL
GENERAL COMPETENCY 4.4 Assess vital signs.		PL, Module I
4.4.a Assess pulse.	A/S	PL, Module I

4.4.b Assess respiration.	A/S	PL, Module I
4.4.c Conduct non-invasive temperature monitoring.	A/S	PL, Module I
4.4.d Measure blood pressure by auscultation.	A/S	PL, Module I
4.4.e Measure blood pressure by palpation.	A/S	PL, Module I
4.4.f Measure blood pressure with non-invasive blood pressure monitor.	A/S	PL, Module I
4.4.g Assess skin condition.	A/S	PL, Module I
4.4.h Assess pupils.	A/S	PL, Module I
4.4.i Assess level of mentation.	A/S	PL, Module I
GENERAL COMPETENCY 4.5 Utilize diagnostic tests.		
4.5.a Conduct oximetry testing and interpret findings.	A/S	PL, Module I
4.5.c Conduct glucometric testing and interpret findings.	A/S	PL, Module I
4.5.l Conduct 3-lead electrocardiogram (ECG) and interpret findings.	A/S	PL, Module I
GENERAL COMPETENCY 5.5 Implement measures to maintain hemodynamic stability.	A/S	PL, Module I
5.5.c Maintain peripheral intravenous (IV) access devices and infusions of crystalloid solutions without additives.	A	PL
5.5.d Conduct peripheral intravenous cannulation.	C	Module II
5.5.f Utilize direct pressure infusion devices with intravenous infusions.	A/S	Module II
GENERAL COMPETENCY 6.1 Utilize differential diagnosis skills, decision-making skills and psychomotor skills in providing care to patients.		PL, Module I
6.1.a Provide care to patient experiencing illness or injury primarily involving cardiovascular system.	A	PL, Module I, II
6.1.b Provide care to patient experiencing illness or injury primarily involving neurological system.	A	PL, Module I
6.1.c Provide care to patient experiencing illness or injury primarily involving respiratory system.	A	PL, Module I
6.1.d Provide care to patient experiencing illness or injury primarily involving genitourinary / reproductive systems.	A	PL
6.1.e Provide care to patient experiencing illness or injury primarily involving gastrointestinal system.	A	PL, Module I
6.1.f Provide care to patient experiencing illness or injury primarily involving integumentary system.	A	PL
6.1.g Provide care to patient experiencing illness or injury primarily involving musculoskeletal system.	A	PL
6.1.h Provide care to patient experiencing illness primarily involving immune system.	A	PL, Module II
6.1.i Provide care to patient experiencing illness primarily involving endocrine system.	A	PL, Module I
6.1.j Provide care to patient experiencing illness or injury primarily involving the eyes, ears, nose or throat.	A	PL
6.1.k Provide care to patient experiencing illness or injury due to poisoning or overdose.	A	PL
6.1.l Provide care to patient experiencing non-urgent medical problem.	A	PL
6.1.m Provide care to patient experiencing terminal illness.	A	PL
6.1.n Provide care to patient experiencing illness or injury due to extremes of temperature or adverse environments.	A	PL
6.1.o Provide care to patient based on understanding of common physiological, anatomical, incident and patient- specific field trauma criteria that determine appropriate decisions for	A	PL

triage, transport and destination.		
6.1.p Provide care for patient experiencing psychiatric crisis.	A	PL
6.1.q Provide care for patient in labour.	A	PL
GENERAL COMPETENCY 6.2. Provide care to meet the needs of unique patient groups.	A	PL