

A photograph of a hospital room, likely an emergency department or intensive care unit. In the foreground, a patient is lying on a gurney, partially covered by a white sheet. The gurney has yellow safety straps. In the background, there is a white cabinet with a shelf holding various medical supplies, a whiteboard with some faint writing, and other medical equipment. The lighting is bright and clinical.

The ALS in BLS

The Role of Basic Life Support in the Modern Era

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What do we do in EMS?

To provide care for all patients that is

- compassionate,
- competent,
- courteous,
- regardless of circumstances;
- to do no harm, and
- to treat others as we wish to be treated.



When Considering Care...

**What do we do CLINICALLY in the field
that makes a difference in
patient outcomes?**



Literature and Research Review

Lead Author	Year	Study Type	Findings
Jacobs LM	1984	Retrospective chart review	ALS improves trauma scores and long-term survival in trauma patients
Potter D	1988	Retrospective chart review	ALS improves short tem, but not long-term survival
Murphy JG	1993	Retrospective chart review	ALS confers better outcomes in victims of blunt trauma, but not penetrating trauma
Sampalis JS	1993	Prospective cohort	ALS provided no benefit over BLS
Cayten CG	1993	Prospective observational	ALS showed no benefit in trauma patients with transport times <35 minutes
Eckstein M	2000	Retrospective chart review	ALS does not improve survival rates in major trauma victims
Liberian M	2000	Meta-analysis	ALS shows no benefit over BLS in trauma patients
Liberian M	2003	Prospective cohort	ALS shows no benefit in trauma patients in areas with Level-1 trauma patients
Evanson JE	1998	Epidemiological	ALS improves survival among pediatric trauma victims
Rutledge R	1994	Epidemiological	ALS improves survival for rural trauma victims
Reines HD	1988	Epidemiological	ALS improves survival for rural trauma victims
Messick WJ	1992	Epidemiological	ALS is associated with decreased trauma deaths
Rutledge R	1992	Epidemiological	ALS is associated with decreased trauma deaths
Alexander RH	1984	Epidemiological	ALS is associated with decreased trauma deaths
Eisen JS	1998	Prospective cohort	ALS provided no benefit over BLS in for all complaints in an urban setting
Rainer TH	1997	Prospective observational	ALS skills provide no advantage over defibrillation
Adams J	1996	Prospective observational	Intubation showed no advantages over bag-valve-mask in cardiac arrest
Pitetti R	1997	Retrospective chart review	ALS provided no benefit over BLS in pediatric cardiac arrest
Nichol G	1999	Meta-analysis	Cardiac arrest survival is improved by bystander CPR, early defibrillation, and ALS; cannot differentiate benefits of defibrillation versus ALS
Stiell IG	2004	Multicenter clinical trial	ACLS provides no advantage over rapid defibrillation
Shuster M	1995	Prospective chart review	ALS provides no benefit to cardiac patients in an urban setting
Adams J	1996	Retrospective chart review	ALS provided no benefit over BLS to patients with altered levels of consciousness except for hypoglycemic patients

Table 1—Overview of articles and findings (ACLS = advanced cardiac life support; ALS = advanced life support; BLS = basic life support; CPR = cardiopulmonary resuscitation)

Traumatic Emergencies

“Conclusions: The benefits of ALS care vary with the illness or injury being treated, as well as some other variables, such as transport time and the severity of the pathology.”

In trauma patients, no evidence that ALS care improves survival in patients with short transport times to Level-I trauma centers as well as for patients with penetrating trauma.

Does Advanced Life Support Provide Benefits to Patients?: A Literature Review

D. Isenberg, R. Bissell. Prehospital and Disaster Medicine, July - August, 2005, pp. 265 - 270.

Ontario Prehospital Advanced Life Support Trauma Study 2008

The OPALS Major Trauma Study showed that systemwide implementation of full advanced life – support programs did not decrease mortality or morbidity for major trauma patients. “We also found that during the advanced life support phase, mortality was greater among patients with Glasgow Coma Scale scores less than 9”.

“We believe that emergency medical services should carefully re-evaluate the indications for and application of prehospital advanced life-support measures for patients who have experienced major trauma.”

Journal of the Canadian Medical Association
April 22, 2008, Pages 1141-1152

Cardiac Emergencies

What Works?

– Timely
defibrillation?

- Definitely

– Advanced
Cardiac Life
Support?

- Very little



Ontario Prehospital Advanced Life Cardiac Arrest Study 2004

Conclusions: The addition of advanced life support interventions *did not improve the rate of survival* after out-of-hospital cardiac arrest in a previously optimized emergency medical services system of rapid defibrillation.

In order to save lives, health care planners should make cardiopulmonary resuscitation by citizens and rapid-defibrillation responses a priority for the resources of emergency medical services systems.

New England Journal of Medicine
August 12, 2004
Pages 647-656

Respiratory Emergencies?

- Asthma/Allergic Reaction/Heart Failure?
 - Yes: Albuterol, Nitroglycerin, CPAP
 - EMT's can perform these treatments



So in Respiratory Emergencies?

- **Basic Airway management - assuring good oxygenation and ventilation?**
 - Yes! This is an EMT Skill
 - Is CPAP an EMT Skill? **Probably YES!!**



Ontario Prehospital Advanced Life Respiratory Study 2007

“Conclusion: The addition of a specific regimen of out-of-hospital advanced life support interventions to an existing EMS system that provides basic life support was associated with a decrease in the rate of death of 1.9 percentage points among patients with respiratory distress.”

Study of 8138 patients in respiratory distress. Began with BLS only, and then they added drugs and endotracheal intubation. Very little difference found, and almost all ALS improvement was provided by the bronchodilator and nitroglycerin.

*New England Journal of Medicine
May 24, 2007
Pages 2156-2164*

Ontario Prehospital Advanced Life Respiratory Study 2007

“The most substantial change in therapeutic intervention was the marked increase in the use of medications for symptom relief; this intervention is not a component of advanced life support...

Thus, the benefit of the intervention in this trial may have been primarily due not to the availability of advanced-life-support techniques but to the use of nebulized salbutamol and sublingual nitroglycerin.”

New England Journal of Medicine
May 24, 2007
Pages 2156-2164

Fowler's Law of Improved Work of Breathing

- A patient's work of breathing will appear to get better for one of two reasons:

➤ **They're getting better**

➤ **They're getting WORSE!!!**

Prehospital Intubation?

- The Paramedic/ALS Skill?
 - Not so much
- Lets look at it...



Literature and Research...

- “Prehospital intubation...has not been shown to improve outcomes and may cause significant harm in the hands of inexperienced operators.”
- “Anything which delays transfer to definitive care in severe trauma is inappropriate.”

Academic Emergency Medicine
February 16, 2006

EMS Literature and Research

Concluding Thoughts

- **“If at all possible, endotracheal intubation is a procedure to avoid. If BLS adjuncts can maintain an open airway, promote good oxyhemoglobin saturations and adequately protect the patient from aspiration, then they are clearly the preferred choice of care.”**

**Howard Rodenberg, MD, MPH
Journal of Emergency Medical Services**



Status of Current Protocols

- They are already designed for both BLS and ALS care
- EMT - staffed Ambulances are already in policy because medical directors often have already approved their use

Potential Ambulance Designs

–BLS

–ILS

–ALS

–MICU

E.P.A.B. Emergency Physicians Advisory Board	Page:	1-0
Medical Control for MedStar System	Effective Date:	January 1, 2008
	Replaces:	April 9, 2007

1 EXPLANATION OF THE LEVELS OF CARE

Basic Life Support

1. Emergency Care Attendants
 - a. First Responder Agency ECA level employee

Intermediate

1. Emergency Medical Technician-Intermediate

ALS First Responder

1. Emergency Medical Technician-Paramedic

FRO Advanced / Lead Secondary Paramedic

1. Emergency Medical Technician-Paramedic

Conditional Primary Paramedic / Primary Paramedic

1. Emergency Medical Technician-Paramedic
 - c. Conditional Paramedic: MedStar Lead Conditional Primary Paramedic level employee approved by EPAB and assigned to all level Priority calls. They may be on “restricted” status to perform a certain EPAB specialty skill. (i.e. Crash Airway)
 - d. Primary Paramedic: MedStar Lead Primary Paramedic level employee approved by EPAB and assigned to all level Priority calls without any restrictions.

BSP Orders

1. EPAB approved Base Station Physician.

EMT Ambulance

- **A “Basic Life Support” Ambulance**
 - **Staffed with Emergency Medical Technicians (EMTs)**
 - **Perform According to National Clinical Standards of Care**

National Standard Treatments by EMT's

- **Airway Adjuncts and Oxygen Delivery**
- **Bag-Valve-Mask**
- **CPAP**
- **Bleeding and Shock Management**
- **Cardiac Arrest Management/AED**
- **Bandaging/Splinting**
- **Medication Administration**
 - Bronchodilators
 - Epinephrine SQ / IM
 - Nitroglycerin
 - Aspirin
 - Glucose
- **Optional Airway:**
 - Dual Lumen Airway Insertion
 - Endotracheal Intubation??

Suggested Policies Governing EMS Response / Levels

- We CANNOT be in a position of being unable to respond in a timely manner
- Basic EMT Trucks are a safe and timely answer
- We must stop responding to calls that we can prevent

Critical Element

*EMT Truck does NOT equal
“old Basic Life Support”*

From Dr. Ed Racht, 5/27/08
Chairman of the Texas
Governor's EMS and Trauma
Advisory Council

***“We are stuck using antiquated
nomenclature. ‘BLS and ALS’
no longer accurately fit EMS.
It is the clinical results
that matter.”***

Suggested Policies for Basic EMS Unit Implementation

- We can produce EMT-staffed ambulances more quickly than paramedic ambulances**
- Trained by us, QA'd by us**
- Be on the street quickly**
- A “license to learn”**

Questions and Comments

