

Preparing for the Future

Jerris R. Hedges, MD, MS

Oregon Health Sciences University,
Department of Emergency Medicine,
Portland, Oregon

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Dr. Hedges is the Editor-in-Chief of
Academic Emergency Medicine, the official
medical journal of the Society of
Academic Emergency Medicine.

Correspondence: Jerris R. Hedges, MD, MS,
OHSU, Department of Emergency
Medicine, 3181 SW Sam Jackson Park
Road, UHN-52, Portland, OR 97201-3098
USA

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Abbreviations:

CHF = congestive heart failure

ED = emergency department

EMS = emergency medical services

SVT = supraventricular tachycardia

I will address briefly the future of emer-
gency medical services (EMS) and the
role of EMS research in that future.

The foreseeable future of health care
will be dominated by *managed-care* systems
that will limit health-care funding. These
systems are evolving earlier in several
areas of the country. It is ironic that Min-
neapolis, Minnesota, and Portland, Ore-
gon, the sites of the last two National
Association of EMS Physicians annual
meetings, are on the leading edge of the
managed-care movement.

Keeping things in simple terms, I see
three general themes in *managed care*.

- 1) less pay for medical services;
- 2) consolidation of medical providers;
and
- 3) health care administrated on a pop-
ulation-based model.

First, how each of these general
themes impacts EMS will be addressed
briefly, and then the role of research in
this environment will be discussed.

Impact on EMS

How will "less pay for medical services"
affect EMS systems? Primarily, insurance
companies providing managed care will
negotiate in advance for a fixed annual
sum to provide EMS care for their
patient population. This will limit funds
available for physician supervision,
research, and clinical innovations.

How will consolidation of medical pro-
viders affect EMS systems? Basically, hos-
pitals, clinics, and physician providers will
network and merge their services. Ambu-
lance destinations for patients will be
determined by contractual arrangements
that the providers have made with the
insurers (sometimes the providers will be
the insurers). The general concept of re-
gional health resources (e.g., the trauma
center concept) will be challenged as
major medical provider organizations
begin to clash for *total control* of their
patients (or more correctly, total control

over the cost of health care for their
insured patients).

How will a population-based model for
health care affect EMS systems? Basically,
decisions regarding clinical care will be
shifted from the needs of the **individual**
to the needs of the **community**. However,
the *community* will be defined as those
who are covered by major insurers.

The needs of the indigent population
may be ignored in policy decisions by
major insurers **unless** a governmental
health plan is developed that adequately
pays for their needs. This governmental
involvement is the driving force of the
Oregon Health Plan. However, the indi-
vidual *provider* will remain responsible for
the individual *patient*, although the
provider will be expected to provide care
under rules developed for the masses
rather than tailored for the individual.

Is this a doom-and-gloom scenario? I
really don't think so. Our current health-
care system has considerable problems:
1)expensive therapies are provided to a
select few; 2)the health-care industry is
encouraged to treat illness and injury,
but does *not* account for its expenditures,
nor does it necessarily promote health;
and 3)health-care rationing is a way of
life for the poor, but currently is denied
by insurers and other administrators.
These problems will be attacked under
managed care. If EMS systems truly pro-
vide valued and effective services to a
large population of patients for a reason-
able cost, justification for increased sup-
port can be made.

Role of Research

I believe that EMS systems will *not* just
survive in the future, but will **thrive**. How-
ever, they must adjust to this new practice
environment. Population-based EMS
research can help. Your EMS system's
database can show health-care planners
which services people *want*. Scientific
analysis of EMS outcomes can help deter-

mine which services people *need*.

Our task as researchers and physician supervisors is to educate those who are emerging as the brokers in the population-based health-care arena as to the true value of using the EMS system:

- 1) monitor communitywide health-care use;¹
- 2) identify potential injury and illness preventative measures;¹ and
- 3) provide some health care entirely out-of-hospital.

We will need to demonstrate cost-effectiveness in our patient assessments and interventions. This will require us to monitor "customer satisfaction" and will challenge traditional EMS care practices. For example, much of EMS is focused on getting patients to the emergency department (ED), but often patient care should begin and end at the scene . . . entirely out of the hospital.

Out-of-Hospital Care

Fourteen years ago when I supervised the Thrust County Medic One Program in Washington, we established individualized, out-of-hospital care protocols for many complex patients who commonly required ED evaluation and hospital admission. A couple of examples that may guide future cost-effective analyses should be valuable.

One such patient had end-stage chronic congestive heart failure (CHF) and lived approximately 40 minutes from the hospital. She was seen in the ED and admitted several times each month for her CHF. The patient and her family preferred that she *not* be treated further in the hospital. However, the patient *did* want further treatment for her CHF episodes when they did occur.

With her primary-care provider, we developed a care plan for home treatment. The patient received oxygen (and bag-valve-mask ventilatory support as needed), intravenous furosemide, intravenous morphine as needed for undue anxiety, and nitroglycerin paste.

During an exacerbation, the patient was managed for 30 to 60 minutes at her home. If she was improving, the paramedics continued to provide care until they believed she was stabilizing, and then they left the patient

at home. If the patient was considered to need additional therapy, medical command was contacted and options discussed. Her visits to the ED and corresponding hospitalizations dropped to almost none. When the patient did die after more than a year of intermittent home EMS treatments, her death occurred at home where she chose it to occur.

Another frequent ED patient had recurrent bouts of supraventricular tachycardia (SVT) requiring pharmacologic conversion every few months in the ED. A treatment protocol was developed permitting paramedics to use intravenous verapamil for known SVT patients who had responded to this treatment in the past. This patient and others were converted pharmacologically out-of-hospital, observed by the paramedics, and then released in the absence of chest discomfort, pulmonary edema, or hypotension. Of note, this approach was adopted years before adenosine became available.

The future practice environment requires that physician supervisors develop clear guidelines for the treatment and release of patients out-of-hospital. In present EMS systems, I suspect that hypoglycemic diabetic patients and previously diagnosed seizure patients commonly are treated and released at the scene.^{2,3} However, in many systems this requires a lengthy *against medical advice* process and perhaps even contact with on-line medical command.³

The Future

Why is all this necessary? Can't we develop guidelines that permit and even encourage release of the patient under specific conditions?⁴ Can't we become partners with primary providers and develop unique plans for specific patients that permit care usually reserved for the ED to be provided at the patient's home?

These concepts have associated medicolegal issues, but a different practice paradigm is feasible. After all, EMS physician supervisors should determine the standard of care through clinical evaluation of practice innovations. Hence, the future will be *exciting* for EMS and EMS research. Today's research is tomorrow's practice.

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