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Interest

PRINCIPAL INVESTIGATOR: Dennis K. Leedom, Ph.D.

CONTRACTING ORGANIZATION: Army Research Laboratory
Aberdeen Proving Ground, MD 21005-5067

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Leedom, Dennis K., Ph.D.

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13. ABSTRACT *(Maximum 200 words)*

The objective of this research work package is to improve advanced trauma life support through improved coordination of the extended team of medical personnel that provides this type of initial medical care--e.g., EMT, trauma nurse, emergency medicine physician. the research approaches this goal through (1) the analysis of team tasks and information flow to identify task conflicts, information bottlenecks, and skill deficiencies within advanced trauma life support, (2) the refinement of medical team evaluation techniques for assessing overall performance along specific behavioral dimensions, (3) the development and evaluation of focused training interventions for reducing certain types of coordination errors common to advanced trauma life support, and (4) the selective demonstration and evaluation of telemedicine, information management, and decision aid technologies that have the potential for improving medical team coordination and collaboration. The initial year of this research focuses on trauma patient care within a definitive care trauma center (e.g., Madigan Army Medical Center), with linkages to EMT services. Subsequent phases of the research will be extended to address field operations more representative of the combat casualty care setting. Through its systematic behavioral investigation of the extended team process involved in advanced trauma life support this research complements current Army and DARPA initiatives in the fields of telemedicine and trauma care informatics.

14. SUBJECT TERMS

Advanced Trauma Life Support, Emergency Medical Team Coordination, Team Error Reduction, Emergency Medical Team Training, Trauma Patient Information Management

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Dennis K. Leedom, Ph.D.   3 Sep 97
PI - Signature   Date

TABLE OF CONTENTS

E-2411U

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Measurement Instruments

8 August 1997

Prepared By:

Dynamics Research Corporation
Systems Division
60 Frontage Road
Andover, MA 01810

PM: Robert Simon
(508) 475-9090

Prepared For:

US Army Research Laboratory
Aberdeen Proving Ground, MD 21005

POC: Mr. Michael Golden

DRC DYNAMICS RESEARCH CORPORATION

E-2411U

Interim Report on Measurement Instruments Developed for The Emergency Team Coordination Course Validation

John C. Morey
Dynamics Research Corporation

Mary Salisbury
Gregory D. Jay
Rhode Island Hospital

8 August 1997

Interim Report on Measurement Instruments Developed for The Emergency Team Coordination Course Validation

Contents

LIST OF TABLES

Introduction

This report describes a variety of objective and subjective measures of performance specifically designed for hospital emergency departments (EDs). Dynamics Research Corporation (DRC), in cooperation with Rhode Island Hospital (RIH), is developing the data collection instruments to evaluate the Emergency Team Coordination Course (ETCC™), a training course in the principles and specific behaviors of effective teamwork designed for emergency department personnel. Because ETCC™ is based on a philosophy of evaluation-based instruction, the content and scope of the course evaluation instruments are a central concern for validation of the course. A complete description of the antecedents of the course and its goals and content are described in Simon, Morey, Locke and Blair (1995)[1]. A brief summary is provided here.

A review of the medical malpractice literature suggested that teamwork errors are implicated in emergency medicine misadventures. Field observations in emergency departments provided examples of team processes such as communication, workload management, team building and leadership, planning, and decision-making wherein team effectiveness and efficiency could be improved. These field observations, supplemented with information on emergency department operations, resulted in a structure of essential team functions referred to as the emergency Team Dimensions (TDs). Specifications of superior, average, and very poor team behavior were developed for each of the five TDs as behaviorally anchored rating scales (BARS). These provided a basis for a suite of subjective and objective team assessment instruments developed earlier in the project. The one-day ETCC™ training program was developed that included lecture, discussion, and practical exercises to teach team skills.

This report summarizes the results of pilot tests of the original suite of instruments, and new instruments developed to fulfill specific measurement needs. The pilot tests were undertaken at the Davol adult emergency department of RIH. Note that the ETCC™ curriculum was not taught to Davol staff. However, the measures and instruments described in this report assess ED operations and staff processes that exist independent of the training. The training is designed to improve the quality of these operations and processes. The training is not required as a prerequisite to assessing the adequacy and performance of the instruments or measures. This design consideration permits the use of the instruments to develop baseline statistics prior to the training.

After introducing and describing the suite of measurement instruments in general terms, this report presents a detailed description of the instruments developed and data related to their

---

[1] Simon, R., Morey, J. C., Locke, A. M., & Blair, E. *Emergency team coordination course™ phase one report.* (Final Report). Wilmington, MA: Dynamics Research Corporation, 1995

administration and scoring. The next portion of the report provides descriptions of the manpower requirements to collect the data at a typical ETCC™ validation site. Course validation will consist of one or more pretraining measurement episodes lasting 30 days followed by one or more posttraining measurement episodes. Collection of selected operational data such as length of stay and quality assurance indicators is planned for the ten months surrounding the three months of full measurement suite data collection.

Evaluation Concept

The measurement instruments developed to assess the effectiveness of the team training program were designed to collect both subjective data (attitudes and opinion ratings) from hospital staff and patients and objective performance data (i.e., data reflecting the operational performance of the emergency department). The measurement philosophy is to conduct a broad assessment of the impact of the teamwork training by examining changes in staff and patients' attitudes, the behavior of teams, and the operational performance of the ED. It is unlikely that one type of measure will provide sufficient evidence of the course's impact, but collectively the measures will provide a comprehensive, multi-faceted account of its effectiveness. The variety of measurement instruments is shown in Table 1.

DRC and RIH developed all the subjective measurement instruments with the exception of the Maslach Burnout Inventory and the RIH patient satisfaction survey which are commercially available instruments. With respect to patient satisfaction, all other validation hospitals use their own locally-developed surveys. For the entire measurement suite, the goal was to create instruments that could be used in a wide variety of hospitals.

Objective performance data consists of length of stay data, times associated with selected treatment procedures such as thrombolytic therapy, times recorded in medical records at which significant patient assessment and treatment activities occurred, in-patient unit assessment of patient preparation for admission while in the ED, and data obtained from quality assurance (QA) reports, personnel reports, and the trauma registry. Attitude and opinion information consists of the Maslach Burnout Survey, ED staff members' satisfaction with their working environment and their attitudes towards teamwork. Patient satisfaction is assessed with a locally-developed or, as is the case at RIH, a commercially available patient satisfaction survey. Teamwork behavior is assessed with the BARS, subjective workload assessment, a stress scale, the Teamwork Nursing Assessment, and distance walked per shift (pedometer studies). Program evaluation consists of a student critique and course evaluation form presented to ETCC™ students at the completion of their classroom training.

2

Table 1. Evaluation Measures and Instruments

Measurement Area	Measures and Instruments
ED Performance	• ED operations (e.g., length of stay, timed treatment procedures) • Admission Evaluation Survey • QA indicators • Administrative measures (e.g., absenteeism) • Trauma registry data elements
Attitude and Opinion	• Maslach Burnout Inventory • Staff attitudes towards teamwork • Staff job satisfaction • Patient satisfaction • Patient wellbeing
Team Behavior	• Behaviorally anchored ratings scales (BARS) measuring 5 Team Dimensions • Observed Error Record • Subjective workload • Stress scale • Teamwork Nursing Assessment • Pedometer studies
Program Evaluation	• ETCC™ course critique

Development Activities

ED operations at RIH were examined with respect to data normally collected for administrative and quality assurance purposes. Examples of these types of measures are length of patient stay and number of patients who sign out against medical advice. Other measures were developed based on key concepts of the ETCC™ curriculum. Examples include assessment of subjective workload and degree to which physicians inform nurses that a patient will be admitted to the hospital. Operational data required an examination of the source and details of the particular information collected. No data collection instrument was required to collect these data, but a process for isolating the relevant data elements was established. Instruments based on the ETCC™ curriculum required a conceptualization of the process to be measured, and either identification of an existing instrument or creation of an instrument to collect the data. Once a data collection approach or instrument had been developed, the data collection process was begun to examine its operational characteristics. These characteristics included the efficiency of data collection and user acceptance and accuracy in completing specially-designed instruments. Some instruments underwent or are undergoing test-revise-retest cycles to arrive at their final form.

During the instrument development cycle, data were gathered on the amount of time it took a respondent to complete an instrument and the amount of time required to score or record

information from that instrument or an operational data source. This information was added to a data specification sheet that was created for each kind of operational datum or instrument.

The following section provides the current versions of the measurement instruments and the data specification sheets associated with selected instruments. Data specification sheets will be developed for all measures. Data specification sheets in this report are developmental drafts; they will be standardized and contain descriptive and implementation information helpful to validation site users. The instruments themselves and the data specification sheets will provide the basis for a measurement reference manual that DRC and RIH will develop for use by the validation sites. This manual will contain hardcopy and electronic versions of each instrument, detailed instructions on instrument administration and scoring, and other guidance on the measurement activities required for the course validation effort.

Measurement Instruments

This section contains all instruments developed to date together with specifications for these instruments and others still being pilot tested. The instrument is introduced by a title page that is followed by the instrument and the data specification sheets for some instruments. Table 2 presents a listing of the measures developed and their location in this report.

Table 2. Index to Evaluation Measure and Instrument Specifications

Measure	Page Number
ED Performance Measures	
Length of Stay	6-7
Throughput Times	8
Timed Procedures	9-11
Quality Assurance Indicators	12-13
Administrative Indicators	14
Trauma Registry Indicators	15-16
Admission Evaluation Survey	17-19
Attitude and Opinion	
Maslach Burnout Inventory	20-27
Staff Attitude and Job Satisfaction Survey	28
Patient Satisfaction Survey	29-35
Patient Wellbeing Survey	36-38
Team Behavior	
Behaviorally Anchored Rating Scales (BARS)	39-40
Observed Error Record	41
Subjective Workload and Stress Scales	43-47
Teamwork Nursing Assessment	48-50
Pedometer Studies	51
Program Evaluation	
ETCC™ Course Evaluation	52-54

Length of Stay

1. **Measure Category:**   ED Performance

2. **Type of Measure:**   Operational

3. **Status of Development:** Completed

4. **Data Elements:**   Fixed

5. **Data Fields:**

   a. Date patient enters ED or is registered
   b. Time patient enters ED or is registered
   c. Date patient is discharged from ED
   d. Time patient is discharged from ED

6. **Comments:**   At some institutions this measure is collected by an automated system. For those institutions without automated support, a sample of medical records will be conducted to obtain these data elements.

LENGTH OF STAY

Data Specifications

Data Item Descriptor	Definition and Specifications	Notes
Length of Stay (LOS)	Examines ED teamwork as it related to throughput time: Triage-Discharge. Retrospective measure designed to determine the functional relationship between ETCC™ and the impact upon LOS.	
Sampling Scheme	All patients admitted and discharged from the ED.	
Collection	• Resources Needed: QA monitor. • Measure: QA reporting tool. • Time Estimation: site specific.	

Throughput Times

1. **Measure Category:**   ED Performance

2. **Type of Measure:**   Operational

3. **Status of Development:** Completed

4. **Data Elements:**   Fixed

5. **Data Fields:**

   a. Date patient enters ED
   b. Time patient enters ED
   c. Time patient is registered
   d. Time of triage
   e. Time patient is placed in treatment area
   f. Time to first medication or procedure
   g. Time physician sees patient
   h. Date patient is discharged from ED
   i. Time patient is discharged from ED

6. **Comments:**   At some institutions these measures are collected by an automated system. For those institutions without automated support, a sample of medical records will be conducted to obtain these data elements.

Timed Procedures

1. **Measure Category:**   ED Performance

2. **Type of Measure:**   Operational

3. **Status of Development:** Completed

4. **Data Elements:**   Variable

5. **Data Fields:**

   a. **Thrombolytic Therapy for Chest Pain**

      1) Arrival time in ED
      2) Time to EKG
      3) EKG to Decision for tPA
      4) Discharge time

   b. **Thrombolytic Therapy for Stroke**

      1) Arrival time in ED
      2) Time to CT
      3) EKG to Decision for tPA
      4) Discharge time

   c. **Chest Pain - Time to Catheterization Laboratory**

      1) Arrival time in ED
      2) EKG Time
      3) Time to Catheterization Lab
      4) Time patient left ED

   d. **Time to Charcoal Treatment**

      1) Arrival time in ED
      2) Time to medication or treatment

   e. **Pediatric Asthma Pathway**

      1) Arrival time in ED
      2) Time to medication or treatment

f. Time to Antibiotic in Meningitis or Septic Children

1) Arrival time in ED
2) Time to medication or treatment

g. Time from Medication Order of Medication Administration

1) Arrival time in ED
2) Time to medication or treatment

h. Time to Antibiotic in Fever in Children under 3 Months of Age

1) Arrival time in ED
2) Time to medication or treatment

TIMED PROCEDURES:
THROMBOLYTIC THERAPY FOR CHEST PAIN

Data Specifications

Data Item Descriptor	Definition and Specifications	Note
Thrombolytics	Objective outcome measure: Assess for ED teamwork throughput time: door to drug.	
Sampling Scheme	All ED patients receiving tPA.	
Collection	- Resources Needed: QA monitor. - Measure: -site specific QA tool. - Time Estimation: site specific	

Quality Assurance Indicators

1. **Measure Category:**   ED Performance

2. **Type of Measure:**   Operational

3. **Status of Development:** Completed

4. **Data Elements:**   Variable

5. **Data Fields:**

   a. Number of patients who left against medical advice (AMA)
   b. Number of patients who left without being seen (LWBS)
   c. Number of patients who left before treatment completed
   d. Number of mislabeled laboratory specimens
   e. Number of mislabeled blood tubes
   f. Number of blood culture specimens contaminated
   g. Number of medication errors
   h. Number of patient complaints
   i. Number of patient compliments
   j. Number of unexpected patient returns within 48 or 72 hours
   k. Number of treatment delays due to consultants
   l. Number of patient falls
   m. Number of ED deaths

6. **Comments:**   Validation sites collect one or more of these elements, but not necessarily all of them. Frequency of reporting may be weekly or monthly.

QUALITY ASSURANCE INDICATORS

Data Specifications

Data Item Descriptor	Definition and Specifications	Note
Quality Assurance Data	Longitudinal adverse medical event report; retrospective measure designed to determine the functional relationship between MedTeams (training) Emergency Team Coordination Course and adverse medical events.	
Sampling Scheme	All patients admitted to ED currently have their care reviewed against the standards.	

Location for Data Components	Indicator/Variable:
	- LWBS - not registered - ER01
	  SMS Report.
	- AMA - registered ER01 SMS Report.
	- Unscheduled returns (72 hours)
	  PMS-5NPA - Davol IS report.
	  PMS-5NPC - Hasbro IS report.
	- Complaints - falls, MED errors,
	  incident reports.
	- Pt. in ED > 6 hrs - SMS report.
		• Know where to find the data currently gathered by your institution.
		• Know what information service report it is retrieved from if relevant.

Administrative Indicators

1. **Measure Category:**   ED Performance

2. **Type of Measure:**   Operational

3. **Status of Development:** Completed

4. **Data Elements:**   Variable

5. **Data Fields:**

   a. Hours of sick leave used
   b. Number of incidents of tardiness
   c. Number of unexcused absences
   d. Number of staff resignations or terminations
   e. Net revenue per visit
   f. Total expense per visit
   g. Number of visits per day
   h. Number of admissions to inpatient units
   i. Census per hour
   j. Acuity level of ED patients per day

6. **Comments:**   Frequency of measurement of these indicators varies from daily, weekly, or monthly.

Trauma Registry Indicators

1. Measure Category: ED Performance

2. Type of Measure: Operational

3. Status of Development: Completed

4. Data Elements: Fixed (National TRACS Data Base)

5. Data Fields:

a. Demographics
1) 11 indicators that identify the patient are collected at sites but will not be recorded in the validation database
2) Patient sex
3) Patient date of birth

b. Injury
1) Date of injury
2) Time of injury
3) City of injury
4) State of injury
5) Zip code of injury
6) Blunt or penetrating injury
7) Cause of injury (E-Code)
8) Site of injury
9) Police report number
10) Position of patient in vehicle
11) Safety equipment in use

c. Prehospital
1) Name of EMS
2) EMS run number
3) Condition of patient at scene
4) Dispatch date of EMS
5) Dispatch time of EMS
6) Scene arrival time of EMS
7) Scene departure time of EMS
8) Arrival time at first hospital
9) Total scene time
10) Total transport time
11) Pulse at scene
12) Respiratory rate at scene
13) Blood pressure at scene
14) Eye movement at scene
15) Verbal response at scene
16) Motor response at scene
17) Glasgow Coma Score at scene

18) Revised Trauma Score at scene
19) Use of CPR at scene
20) Airway management at scene
21) Use of MAST trousers at scene
22) Use of fluids at scene

d. Referring Hospital
1) Hospital transfer
2) Referring hospital name
3) Referring physician
4) Arrival date at ref hospital
5) Arrival time at ref hospital
6) Discharge date from ref hospital
7) Discharge time from ref hospital
8) Pulse at ref hospital
9) Respiratory rate at ref hospital
10) Blood pressure at ref hospital
11) Eye movement at ref hospital
12) Verbal response at ref hospital
13) Motor response at ref hospital
14) Glasgow Coma Score at ref hospital
15) Revised Trauma Score at ref hospital

e. Emergency Department Admission
1) Mode of transport
2) Arrive from
3) Direct admission
4) Arrival date in ED
5) Arrival time in ED
6) Discharge time from ED
7) Chief complaint
8) Arrival condition
9) Trauma surgeon response time
10) Neurosurgeon response time
11) Temperature at ED
12) Pulse in ED
13) Respiratory rate in ED
14) Blood pressure in ED

15) Eye movement in ED
16) Verbal response in ED
17) Motor response in ED
18) Glasgow Coma Scale on ED arrival
19) Revised Trauma Score on ED arrival

f. **Emergency Department Treatment**
1) Head CT scan in ED
2) Abdominal CT scan in ED
3) Peritoneal lavage in ED
4) Arteriogram in ED
5) Airway management in ED
6) Use of CPR in ED
7) Units of blood given in ED
8) Drug screen results in ED
9) Blood alcohol level in ED
10) Hematocrit in ED
11) Base deficit in ED
12) ED disposition
13) Admit services

g. **Hospital Diagnoses**
1) ICD-9 diagnosis codes 1 through 10 (uses 10 data fields)
2) AIS score of diagnoses 1 through 10 (uses 10 data fields)
3) Automatic calculation for AIS Score for: head and neck, face, chest, abdomen, extremities, skin and soft tissue
4) Automatic calculation for ISS

h. **Operations**
1) Operation ICD-9 for codes 1 through 10 (uses 10 data fields)
2) ICD-9 description codes 1 through 10 (uses 10 data fields)
3) Date of operation for codes 1 through 10 (uses 10 data fields)
4) Time of operation for codes 1 through 10 (uses 10 data fields)

i. **QA Indicators**
1) Scene time greater than 20 minutes
2) No EMS report
3) GCS less than 13 and no head CT
4) No neurological documents
5) No hourly chart documents
6) Uncontrolled airway in comatose patient
7) Patient readmitted within 72 hours after initial evaluation
8) Nonoperative abdominal GSW
9) Late craniotomy for intracranial hemorrhage
10) Late laparotomy (>2 hours)

11) Interhospital transfer (>6 hours)
12) Late treatment of open tibial fracture (>8 hours)
13) Unplanned reoperation within 48 hours
14) Late truncal, cranial or vascular operation (> 24 hours)
15) Nonsurgeon admission
16) Nonoperative fixation of femoral shaft fracture
17) Cervical spine fracture missed on admission

j. **Complications**
1) Deep venous thrombosis
2) Hemo/pneux thorax
3) Shock
4) Empyema
5) Cardiac arrest
6) Intra-abdominal abscess
7) Myocardial infarction
8) Other abscess
9) Congestive heart failure
10) Sepsis
11) Coagulopathy
12) GI bleed
13) Compartment syndrome
14) Pseudomemb. Colitis
15) Arrythmia
16) Small bowel obstruction
17) Arterial occlusion
18) Ent. Cutan fistula
19) Abd wound complication
20) Enterotomy
21) Decubiti
22) Cholecystitis
23) Acute renal failure
24) Hyperbilirubinemia
25) UTI
26) Stroke
27) Respiratory failure
28) Encephalopathy

k. **Outcome**
1) Self care
2) Mobility
3) Verbal
4) FIM score
5) Days in the ICU
6) Days in the hospital
7) Hospital charges
8) Reimbursed charges
9) Hospital disposition
10) Data entry complete

Admission Evaluation Survey

1. **Measure Category:**   ED Performance

2. **Type of Measure:**   Survey

3. **Status of Development:** Completed

4. **Data Elements:**   Fixed
                              Comments text

5. **Data Fields:**   Form

- **You have just received a patient admitted through the ED.**
- **In support of MEDTEAMS, an ED Research project, please take a moment to provide the ED with process feedback.**
- **This form is self explanatory and meant to be completely anonymous. Please do not write any caregiver or patient names on the form or the information must be discarded.**
- **When the form is completed place in the specially provided envelope on your unit labeled "Mary Salisbury RN". Your Clinical Manager will return the completed forms on a regular basis.**

Thank you for your time; although voluntary, your participation is very supportive.

Emergency Department Admission Evaluation Survey

1. Time elapsed between report and patient arrival to patient unit. _____hrs _____min

2. Is the patient in pain? Yes   No
   If the answer is YES, does the patient know
   what to do with respect to pain? Yes   No
   Examples: *Call for the nurse*
   Is aware pain Rx is ordered every 4 hours

3. Have all **ordered** ED medications been given? Yes   No
   If the answer is NO, were you informed why not? Yes   No

4. Are intravenous line and medications running at their
   described rate? Yes   No   NA

5. Is the patient aware of why he or she was admitted? Yes   No   See Comments

6. Were family members or guardians advised of the patient's condition? Yes   No   See Comments

7. Are family members or guardians aware that the patient was admitted to
   your unit? Yes   No   See Comments

8. Is the patient's condition consistent with the ED report? Yes   No

9. Has the patient been provided with an identification bracelet? Yes   No

10. Was report given by that patient's primary nurse? Yes   No

11. Was the ED nurse's report professional? Yes   No
    Examples of professional expectations:
    (1) A clear and well communicated systems report
    (2) The ED nurse identifies self by name
    (3) The ED nurse encourages "call back" from receiving RN
    if there are any questions or concerns.

Comments:

_____

_____

_____

_____

ADMISSION EVALUATION SURVEY

Data Specifications

Data Item Descriptor	Definition and Specifications	Note
Admission Evaluation Survey	• Outcome oriented dichotomous assessment measure: Designed to measure ED team achievement of specific standard based outcomes. • Dichotomous type assessment chosen to gather factual information. • Closed question efficiency increases predictability of time-to-completion.	• Envisioned as a "high risk" questionnaire from the ED practitioners' perspective. • Staff received education specific to the tool and the intent of the tool. all info confidential • all info reported in the aggregate
Sampling Scheme	• Placed on admission record/chart for all admitted patients. • All data accounted for by numbering assessment forms.	Admission clerk function.

Collection Time Estimate	• Resources Needed:
	  -Completed by "in-house" nursing staff.
	  -Scored by research assistant.
	  -Data entered by research assistant.
	  -Analyzed by PI
	• Time Estimation: 1 minute average per respondent. ↑ time to complicated medical plans of care.	

Maslach Burnout Inventory

1. **Measure Category:**   Attitude and Opinion

2. **Type of Measure:**   Survey

3. **Status of Development:** Completed

4. **Data Elements:**   Fixed

5. **Data Fields:**   Form

Rhode Island Hospital

593 Eddy Street
Providence, R.I. 02903

_____
RIH Project #

_____N/A_____
Name of Patient

AGREEMENT TO PARTICIPATE IN CLINICAL INVESTIGATION

Occupational Stress Within the Medical Profession:
An Assessment of Burnout and Coping Methods

You are being asked to participate in a research project as described in this form below. All such research projects carried out in this Hospital are covered by the rules of both the Federal Government and the Rhode Island Hospital. These rules require that you give your signed agreement to participate in this project.

The co-investigators will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask him/her any questions you may have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss any questions you might have with the co-investigators.

If you then decide to participate in the project, please sign this form on the line below in the presence of a witness and the person who explained the project to you. You should be given a copy of this form to keep.

1. **Nature and Purpose of the Project**

    The purpose of this project is to determine both the level of burnout and coping mechanisms among Rhode Island Hospital health care workers. Burnout is a condition that can seriously impair the performance of health care workers; it often causes stress, depersonalization and reduced productivity in individuals. Various studies have been performed examining the correlation between burnout and gender, intradepartmental workers, and prehospital personnel. In this study, however, we hope to assess the level of burnout in Rhode Island Hospital medical professionals, in particular emergency physicians, surgeons, and internal medicine physicians. We will compare the levels of burnout both among three departments and also among prehospital personnel, secretaries, nurses, medical students, residents, and attending physicians within these departments. Furthermore, we would like to evaluate the coping mechanisms of those surveyed.

2. **Explanation of Procedures**

Physicians from the above three departments will be asked to voluntarily complete a survey to determine respondent demographics, burnout levels, and coping mechanisms. The portions of this survey designed to assess burnout and coping methods are modeled after the Malsach Burnout Inventory (1993), a standard model used to assess these parameters.

Any questions regarding the survey should be directed to Dr. Bruce Becker through any of the three co-investigators, Dinesh Bahl (401)863-4858, Eric Blackiston (401) 863-6428, and Carl Chang (401) 863-4858. Dr. Becker may be contacted at (401) 444-5411 (Rhode Island Hospital Emergency Department).

3. **Discomforts and Risks**

We do not foresee any risks or discomforts by participating in this survey.

4. **Benefits**

We hope that we will both learn much about physician burnout from this study and that it will eventually result in changes in policy that may lead to alterations in your work environment.

5. **Alternative Therapies**

Non-applicable.

6. **Confidentiality**

All records relating to this project will be handled and safeguarded according to standard Hospital policy for all medical records. Your medical record will always be handled in conformity with the Rhode Island Act relating to the confidentiality of health care information.

The information provided in this survey will be kept confidential. The principal investigator will not have access to the completed survey or database used in this study. When the results are reported there will be no way for readers to single out individual responses. Furthermore, when data is reported, no correlation will be made between demographic parameters and individual items in the survey; however, data from the survey will be correlated with the three subscales.

7. **Refusal/Withdrawal**

Participation in this project is completely voluntary.

8. <u>Information</u>

We do not expect any (further) unusual risks as a direct result of this project. However, should an unforeseen physical injury occur, appropriate medical care, as determined by the Hospital, will be provided but no financial compensation will be given. Further information in regard to this provision can be obtained by calling the Office of Research Administration at 444-6246.

If you are experiencing difficulties of any type, please feel free to call the appropriate resource(s).

RIH EAP Program   **(401) 732-9444**
                            (800) 445-1195

- counseling for any issues in an environment of strict confidentiality.

Alcoholics Anonymous   **(401) 438-8860**

Cocaine Anonymous   **(401) 276-3039**

Narcotics Anonymous   **(401) 461-1110**

Appendix A

<u>I ACKNOWLEDGE THAT I HAVE READ AND FULLY UNDERSTAND THE
ABOVE CONSENT, THAT ALL OF MY QUESTIONS HAVE BEEN
SATISFACTORILY ANSWERED, AND I AGREE TO PARTICIPATE IN THIS
PROJECT.</u>

☐ YES   ☐ NO

The purpose of this survey is to discover how medical professionals view their job and
the people with whom they work closely.

Age: _____

Gender: _____

Marital Status: _____

Ethnicity: _____

Position and Year (if applicable): _____
       example: 3rd-year medical student

Hours worked per week: _____

Number of hours per shift: _____

Please indicate the shift worked most often:

☐ 7 AM - 3:15 PM   ☐ 11:15 PM - 7:15 AM

☐ 3 PM - 11:30 PM   ☐ Other:_____

Number of years in particular profession: _____

Number of years you expect to remain in

    your current profession: _____

Below are 41 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way *about your profession*. If you have *never* had this feeling, write a "0" (zero) in the space before the statement. If you have had this feeling, indicate *how often* you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way. Below is an example:

Example:

HOW OFTEN:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday

HOW OFTEN
　　　　0-6　　　　Statement:

＿＿＿＿＿　　I feel depressed at work.

If you *never* feel depressed at work, would write the number "0" (zero) under the heading "HOW OFTEN." If you *rarely* feel depressed at work (a few times a year or less), you would write the number "1". If your feelings of depression are fairly frequent (a few times a week, but not daily) you would write a "5."

HOW OFTEN:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday

HOW OFTEN
　　　　0-6　　　　Statements:

1. ＿＿＿＿＿　I feel emotionally drained from my work.

2. ＿＿＿＿＿　I feel used up at the end of the workday.

3. ＿＿＿＿＿　I feel fatigued when I get up in the morning and have to face another day on the job.

4. ＿＿＿＿＿　I can easily understand how my patients feel about things.

5. ＿＿＿＿＿　I feel I treat some patients as if they were impersonal objects.

6. ＿＿＿＿＿　Working with staff and patients all day is really a strain for me.

7. ＿＿＿＿＿　I deal very effectively with the problems of my patients.

8. ＿＿＿＿＿　I feel burned out from my work.

9. ＿＿＿＿＿　I feel I'm positively influencing other people's lives through my work.

10. ＿＿＿＿＿　I've become more callous toward patients since I took this job.

11. ＿＿＿＿＿　I worry that this job is hardening me emotionally.

12. ＿＿＿＿＿　I feel very energetic.

13. _____ I feel frustrated by my job.

14. _____ I feel I'm working too hard on my job.

15. _____ I don't really care what happens to some patients.

16. _____ Working with staff and patients directly puts much less stress on me.

17. _____ I can easily create a relaxed atmosphere with my patients.

18. _____ I feel exhilarated after working closely with my patients.

19. _____ I have accomplished many worthwhile things in this job.

20. _____ I feel like I'm at the end of my rope.

21. _____ In my work, I deal with emotional problems very calmly.

22. _____ I feel patients blame me for some of their problems.

Thank you for completing this survey!

*Please return this survey to either Dinesh, Eric, or Carl, or deposit it in
in the ACM Room.*

MASLACH BURNOUT INVENTORY

Data Specifications

Data Item Descriptor	Definition and Specifications	Notes
Maslach Burnout Inventory	• Self report rating survey used to determine the degree of burnout for hospital ED personnel. • Rating Statements: Respondents asked to judge statement along an ordered dimension. • Maslach & Jackson (1986)* define emotional exhaustion as being "emotionally overextended and exhausted by one's work." Depersonalization is described as having "an unfeeling and impersonal response towards recipients of one's care of service," and personal accomplishment is characterized as having feelings of "competence and successful achievement in one's work with people".	
Sampling Scheme	• Target population: All ED RNs, Drs. and technicians • All data accounted for by numbered surveys.	

Collection	• Resources needed: research assistant.
	• Measure:
	   -administered by research assistant.
	   -scored by research assistant.
	   -Data entered by research assistant.
	   -Analyzed by PI.
	• Time Estimation - 15 min/respondent.	

*Maslach, C., and S.E. Jackson. (1986). *Maslach Burnout Inventory Manual*. 2nd Ed. Palo Alto: Consulting Psychologist Press.

Staff Attitude and Job Satisfaction Survey

1. **Measure Category:**   Attitude and Opinion

2. **Type of Measure:**   Survey

3. **Status of Development:** Under Development

4. **Data Elements:**   Fixed

5. **Data Fields:**   Form

Patient Satisfaction Survey

1. **Measure Category:**   Attitude and Opinion

2. **Type of Measure:**   Survey

3. **Status of Development:** Review and modification of hospital-specific instruments

4. **Data Elements:**   Fixed

5. **Data Fields:**   Form

6. **Comments:**   Hospitals use a set of questions and a survey format (either printed form or telephone interview) either developed locally or obtained from a commercial vendor. Pages 30 to 33 provide a copy of the instrument used at RIH. Page 35 provides a form used at a military hospital.

Questions specific to teamwork processes or outcomes are being investigated as additions to existing patient satisfaction surveys.

Emergency Department Patient Experience Survey [SM]

Our Commitment to Quality Patient Care

⚓ Rhode Island Hospital

Please help us to improve the emergency services at Rhode Island Hospital. Listed below are experiences patients sometimes encounter. We sincerely hope that your most recent visit went smoothly. If, however, it didn't, we want to know.

In each of the following sections, please check the appropriate box ☑ to indicate whether any item was experienced during your visit. If the question does not apply to your experience, please leave it blank. Then, check the box ☑ under the grade that represents your evaluation of hospital performance in that category. Space is provided at the end of the questionnaire for any comments you may wish to make.

_____ 1-4
5=1
8-9

PARKING AND ACCESS

(If you arrived by ambulance, skip to Registration Procedures)

Please indicate ☑ your experience in the following areas:

Yes	No		
☐	☐	20	Emergency Department parking area was easy to find.
☐	☐	21	You easily found a parking space.
☐	☐	22	The designated parking area was convenient to the Emergency Department.
☐	☐	23	A wheelchair was available, if needed.
☐	☐	24	You had to pay for parking.
☐	☐	25	The parking area was well lighted.
☐	☐	26	Assistance from staff in getting you out of your vehicle was provided, if needed.

Overall, your parking and access experience was:

Excellent		Good			Fair			Poor		Unacceptable	
A	A-	B+	B	B-	C+	C	C-	D+	D	F	
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
10	09	08	07	06	05	04	03	02	01	00	29-30

TRIAGE PROCEDURES

Did a nurse (we call this person a "triage nurse") see you at the front desk prior to being registered?   ☐1 Yes ☐2 No 33

Please indicate ☑ your experience in the following areas:

Yes	No		
☐	☐	34	Your physical condition was adequately assessed by the triage nurse.
☐	☐	35	Triage nurse treated you kindly.
☐	☐	36	Privacy during triage was adequate.
☐	☐	37	The triage area was adequately staffed for the number of patients.

Overall, triage procedures were:

Excellent		Good			Fair			Poor		Unacceptable	
A	A-	B+	B	B-	C+	C	C-	D+	D	F	
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	38-39

6398

REGISTRATION PROCEDURES

Please indicate ☑ your experience in the following areas:

Yes No
- ☐ ☐ 40 Registration procedures were clear.
- ☐ ☐ 41 You were treated kindly by the staff during registration.
- ☐ ☐ 42 The number of forms required for registration was reasonable.
- ☐ ☐ 43 Privacy during registration was adequate.
- ☐ ☐ 44 Time spent on registration procedures was appropriate.
- ☐ ☐ 45 Adequate information about payment or billing was provided.
- ☐ ☐ 46 You were informed of reason for any delay in registration.
- ☐ ☐ 47 The reception area was adequately staffed for the number of patients.

Overall, registration procedures were:

Excellent	Good				Fair			Poor		Unacceptable
A	A-	B+	B	B-	C+	C	C-	D+	D	F
☐ 10	☐ 09	☐ 08	☐ 07	☐ 06	☐ 05	☐ 04	☐ 03	☐ 02	☐ 01	☐ 00

48-49

WAITING ROOM

Please indicate ☑ your experience in the following areas:

Yes No
- ☐ ☐ 52 Waiting room was quiet.
- ☐ ☐ 53 Waiting room was clean.
- ☐ ☐ 54 Waiting room was comfortable.
- ☐ ☐ 55 Waiting room seating capacity was adequate.
- ☐ ☐ 56 You were informed of reason for any delay.

Yes No
- ☐ ☐ 57 Television was available.
- ☐ ☐ 58 Length of waiting time was reasonable.
- ☐ ☐ 59 The restroom was easy to find.
- ☐ ☐ 60 The restroom was clean.
- ☐ ☐ 61 Refreshment facilities were available.

Overall, the waiting room was:

Excellent	Good				Fair			Poor		Unacceptable
A	A-	B+	B	B-	C+	C	C-	D+	D	F
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

64-65

TREATMENT

Please indicate ☑ your experience in the following areas:

Yes No
- ☐ ☐ 68 Length of wait to see a nurse was reasonable.
- ☐ ☐ 69 Privacy during treatment was adequate.
- ☐ ☐ 70 You were informed of reason for any delay.
- ☐ ☐ 71 Length of wait to see a physician was reasonable.
- ☐ ☐ 72 Family member/friend who accompanied you was kept informed about your condition.
- ☐ ☐ 73 You spent an appropriate amount of time with a physician.
- ☐ ☐ 74 Length of wait to see a specialist, if required, was reasonable.
- ☐ ☐ 75 Your condition was correctly diagnosed and treated.

	Nurses		Emergency Physicians		Specialist Physicians		Technicians		
	1	2	1	2	1	2	1	2	
	Yes	No	Yes	No	Yes	No	Yes	No	5=2
Appropriate time was spent in identifying problem by:	☐	☐	☐	☐	☐	☐	Not Applicable ☐	☐	20-22
Staff introduced themselves and identified their role:	☐	☐	☐	☐	☐	☐	☐	☐	23-26
Adequate explanation about condition or treatment was given by:	☐	☐	☐	☐	☐	☐	Not Applicable		27-29
You were treated kindly by:	☐	☐	☐	☐	☐	☐	☐	☐	30-33
All of your questions were answered by:	☐	☐	☐	☐	☐	☐	☐	☐	34-37
Your problem was taken seriously by:	☐	☐	☐	☐	☐	☐	☐	☐	38-41
Your privacy was respected by:	☐	☐	☐	☐	☐	☐	☐	☐	42-45

Overall, treatment was:

Excellent	Good				Fair			Poor		Unacceptable
A	A-	B+	B	B-	C+	C	C-	D+	D	F
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

48-49

X-RAY AND LABORATORY SERVICES

(If you did not receive X-ray or Laboratory services, please skip this section.)

Please indicate ☑ your experience in the following areas:

	X-ray Services		Lab Tests		
	1	2	1	2	
	Yes	No	Yes	No	
			Not Applicable		52
Transportation to X-ray area was satisfactory.	☐	☐	☐	☐	53-54
Length of wait for X-ray or laboratory tests was reasonable.	☐	☐	☐	☐	55-56
You were treated with concern by staff.	☐	☐	Not Applicable		57
Privacy during X-ray was adequate.	☐	☐	☐	☐	58-59
Staff provided a satisfactory explanation of test procedures.	☐	☐	Not Applicable		60
An attendant was present during X-ray services.	☐	☐	☐	☐	61-62
Length of wait for results of X-ray or lab tests was reasonable.	☐	☐	☐	☐	63
Privacy and comfort for specimen collection was satisfactory.	Not Applicable		☐	☐	64-65
Staff demonstrated adequate skill in performing tests.	☐	☐			

Overall, **X-ray** services were:

Excellent		Good				Fair				Poor			Unacceptable	
A		A-	B+	B		B-	C+	C		C-	D+	D	F	68-69
☐		☐	☐	☐		☐	☐	☐		☐	☐	☐	☐	
10		09	08	07		06	05	04		03	02	01	00	

Overall, **Laboratory** tests were:

Excellent		Good				Fair				Poor			Unacceptable	
A		A-	B+	B		B-	C+	C		C-	D+	D	F	70-71
☐		☐	☐	☐		☐	☐	☐		☐	☐	☐	☐	

DISCHARGE PROCEDURES

(If you were admitted to the hospital through the Emergency Department, please skip this section.)

Please indicate ☑ your experience in the following areas:

Yes	No		
☐	☐	20	Discharge procedures were understandable.
☐	☐	21	You were treated with courtesy by nursing staff during discharge procedures.
☐	☐	22	After physician ordered discharge, your wait was appropriate.
☐	☐	23	Instructions about medications, continued care, or condition were adequate.
☐	☐	24	A wheelchair was available, if needed.
☐	☐	25	Appropriate assistance was provided by staff upon departure.
☐	☐	26	Transportation pick-up area was convenient.

5=3

Overall, discharge procedures were:

Excellent		Good				Fair				Poor			Unacceptable	
A		A-	B+	B		B-	C+	C		C-	D+	D	F	29-30
☐		☐	☐	☐		☐	☐	☐		☐	☐	☐	☐	

OVERALL SATISFACTION

Overall, the care provided during your visit at this hospital was:

Excellent		Good				Fair				Poor			Unacceptable	
A		A-	B+	B		B-	C+	C		C-	D+	D	F	33-34
☐		☐	☐	☐		☐	☐	☐		☐	☐	☐	☐	

How do you compare our Emergency Department services with other local hospitals?

☐1 Better   ☐2 About the same   ☐3 Worse   ☐4 Don't know

35

How willing are you to:

	Very Willing	Somewhat Willing	Somewhat Unwilling	Very Unwilling	
	1	2	3	4	
Use our emergency services again:	☐	☐	☐	☐	36
Recommend our services to others:	☐	☐	☐	☐	37
Be hospitalized at our hospital:	☐	☐	☐	☐	38

ADDITIONAL INFORMATION

Did you arrive by ambulance? ☐₁ Yes ☐₂ No ₄₁

If you came by ambulance, were you able to choose the hospital? ☐₁ Yes ☐₂ No ₄₂

Were you transferred from another hospital to Rhode Island Hospital? ☐₁ Yes ☐₂ No ₄₃

Have you ever used a hospital Emergency Department before? ☐₁ Yes ☐₂ No ₄₄

    If yes, have you used this Emergency Department before? ☐₁ Yes ☐₂ No ₄₅

    If yes, how many times in the last 12 months? _____ ₄₆₋₄₈

Do you have a Primary Care physician for routine care? ☐₁ Yes ☐₂ No ₄₉

    If YES, why didn't you go to your Primary Care Physician?
    ☐₅₄ No appointments available ☐₅₅ Need was urgent ☐₅₆ Physician referred me ☐₅₇ Other

If there were a walk-in center for urgent care in another convenient location that were open, would you have gone there instead of the Emergency Department? ☐₁ Yes ☐₂ No ₆₄

Please indicate the reason(s) for selecting this hospital for your emergency care.

☐₆₆ Close to home   ☐₆₉ Insurance reasons   ☐₇₂ Ambulance personnel
☐₆₇ Referred by physician   ☐₇₀ Hospital reputation   selected
☐₆₈ Recommendations of family/friend ☐₇₁ Previous experience ☐₇₃ Other

Have you or a family member used any of the following services at this hospital in the last 12 months?

Outpatient clinics/ambulatory surgery ₂₀ ☐₁ Yes ☐₂ No   Inpatient treatment ₂₁ ☐₁ Yes ☐₂ No   5=4

How long did you have to wait:

	0-15 minutes 1	16-30 minutes 2	1/2-1 hour 3	1-2 hours 4	2-3 hours 5	3-6 hours 6	
To be registered?	☐	☐	☐	☐	☐	☐	30
In the waiting room?	☐	☐	☐	☐	☐	☐	31
In the treatment room to see the nurse?	☐	☐	☐	☐	☐	☐	32
In the treatment room to see the physician?	☐	☐	☐	☐	☐	☐	33
To get blood drawn or an ECG?	☐	☐	☐	☐	☐	☐	34
For an X-ray?	☐	☐	☐	☐	☐	☐	35
For laboratory test results?	☐	☐	☐	☐	☐	☐	36
In all, how much time did you spend in the Emergency Department?	☐	☐	☐	☐	☐	☐	37

What day of the week was this visit?
☐₁ Monday   ☐₂ Tuesday   ☐₃ Wednesday   ☐₄ Thursday
☐₅ Friday   ☐₆ Saturday   ☐₇ Sunday   43

What time of day did you arrive for this visit?
☐₁ 7 am - 3 pm ☐₂ 3 pm - 11 pm ☐₃ 11 pm - 7 am   44

Your age: ☐₁ Under 18 ☐₂ 18-24 ☐₃ 25-40 ☐₄ 41-64 ☐₅ 65 and over   45

Your sex: ☐₁ Male ☐₂ Female   46

Type(s) of Health Insurance:
☐₅₄ None/Self-pay   ☐₅₇ Medicare   ☐₆₀ HMO/PPO   ☐₆₃ Other
☐₅₅ Blue Cross/Blue Shield ☐₅₈ Medicaid/Welfare   ☐₆₁ CHAMPUS
☐₅₆ Commercial   ☐₅₉ Worker's Compensation ☐₆₂ General Public Assistance (GPA)

We would appreciate any additional comments or suggestions, favorable or unfavorable:

_____

_____

_____

Patient Name/Address/Telephone (Optional) _____

THANK YOU VERY MUCH FOR YOUR HELP

Please place the questionnaire in the envelope provided and mail it as soon as possible to:

GORDON S. BLACK CORPORATION, 135 Corporate Woods, Rochester, NY 14623-1457

♻ Printed on recycled paper

PATIENT SATISFACTION SURVEY
EXAMPLE: GORDON BLACK PATIENT EXPERIENCE SURVEY

Data Specifications

Data Item Descriptor	Definition and Specifications	Notes
Gordon Black ED Patient Experience Survey	Multi Method; outcome oriented survey. Respondent is queried regarding ED experience. Provides an ability to study the relationship between ED patient satisfaction and the variables related to ED experience.	Know the type of patient satisfaction survey currently used at your institution.
Sampling Scheme	Pre and post MedTeams Training to all patients seen and discharged from ED within one month timeframe.	Know how often and when the survey is administered at your site.

Collection	- Resources - TBD* - Measure: Gordon Black time to administer-site specific
	  -scoring - TBD
	  -analyzed by PI
	  -data entry - Time Estimation - TBD
		- Know who administers and scores the survey for your institution. - Come prepared to discuss your ability to gain access to patient satisfaction scores. We would need the ability to report data in the aggregate to demonstrate the impact of MedTeams training on those scores.

Emergency Medicine Department Exit Survey

Please take a few seconds to help us serve you better!

Age:_____ Date:_____ Time:_____ AM / PM

Sex:____ M / F Race:_____ Status:_____ AD / Ret. / Family Member

Please circle the number that best shows how you feel.

"1" = Strongly Disagree   *"5" = Strongly Agree*

1. I understood what my Doctor told me to do when I go home.
         1   2   3   4   5
2. I understood what my Nurse or Corpsman told me to do when I go home.
         1   2   3   4   5
3. I understand the AferCare™ Instruction Sheet(s).
         1   2   3   4   5
4. I can read and understand the Hand-Written Instructions.
         1   2   3   4   5
5. I understand how to use the Medicines I was prescribed.
         1   2   3   4   5

   I was not prescribed any Medicine_____

6. I understand what to do if I have any more problems.
         1   2   3   4   5
7. I was treated with respect during check-in.
         1   2   3   4   5
8. I was treated with respect in the ER.
         1   2   3   4   5
9. The ER Staff kept me informed about the progress
   of my evaluation while I was in the ER.
         1   2   3   4   5
10. I was satisfied with the care I received in the Emergency Room today.
         1   2   3   4   5

Comments:_____

_____

_____

_____

_____

Patient Wellbeing Survey

1. **Measure Category:** Attitude and Opinion

2. **Type of Measure:** Survey

3. **Status of Development:** Field-testing underway

4. **Data Elements:** Fixed

5. **Data Fields:** Form

6. **Comment:** Two questions will be asked at triage and discharge. Written and oral methods of presentation of the questions are being pilot-test at four hospitals.

Patient wellbeing Survey

BEFORE TREATMENT

1. Wellness - How sick are you feeling on a scale of 1 - 10, with 1 being not very sick and 10 being very sick.

1	2	3	4	5	6	7	8	9	10

Not Very
Sick
Very Sick

2. Pain - How bad is your pain on a scale of 1 - 10, with 1 being no pain and 10 being severe pain.

1	2	3	4	5	6	7	8	9	10

Not much
Pain
Severe
Pain

AFTER TREATMENT

1. Wellness - How sick are you feeling on a scale of 1 - 10, with 1 being not very sick and 10 being very sick.

1	2	3	4	5	6	7	8	9	10

Not Very
Sick
Very Sick

2. Pain - How bad is your pain on a scale of 1 - 10, with 1 being not much pain and 10 being severe pain.

1	2	3	4	5	6	7	8	9	10

Not much
Pain
Severe
Pain

PATIENT WELLBEING SURVEY

Data Specifications

Data Item Descriptor	Definition and Specification	Notes
Patient Wellbeing Survey	• Two outcome-oriented bipolar rating questions. Each question (posed verbally) will assess for a difference pre and post treatment. • The respondent may be asked either question #1, question #2, or both #1 and #2. The survey asks the respondent to rate: (1) how sick they are (2) how severe their pain is	• The respondent is the patient. • The triage nurse determines, based on the patient's chief complaint, which questions (#1, #2, or both) apply. With this tool a patient may be sick but not in pain or a patient may be in pain from an isolated injury but overall not sick. Additionally, a third scenario exists where both questions would apply to a patient who (for example) presents with fever and abdominal pain.
Data Components:	Judgement is indicated on a 10 point scale. The scale value is circled to record the respondent's judgment of overall sickness or pain.	
Data Collection Instrument	Field-testing underway	
Sampling Scheme	• All patients in which the triage nurse (based on their assessment) anticipates treatment and discharged from the urgent area of care. • The respondents (patients) will be surveyed verbally pre and post treatment: (1) at triage and (2) prior to discharge. • Walk-In pts. excluded from RIH data collection. Walk-In data has not been used in any of RIH measurement development and sampling schemes.	The questions assess for relevant information. The ability to provide a response will carry the potential to ultimately ↑nurturing, ↑ satisfaction, and ↑ the opportunity for the team to support pt. with information relating to their state of wellbeing.

Behaviorally Anchored Rating Scales

1. **Measure Category:**   Team Behavior

2. **Type of Measure:**   Observational

3. **Status of Development:** Under development

4. **Data Elements:**   Fixed

5. **Data Fields:**   Form

6. **Comment:**   Rating categories have been determined. Developmental efforts surround the (a) length of time that the observer needs to observe a team, (b) which teams to observe, and (c) the categories of patient acuity or chief complaint to select for observing team behavior.

The narrative description of the rating scales appears in Appendix A.

Team Dimensions Rating Form

Use the instructions in the MedTeams Resource Guide to Complete this form

Team: _____   Shift:_____   Date:_____

No	Team Dimension	Descriptors	Rating
1	Team Structure and Climate	Establish leader, form team, delegate team role, establish expectations, demonstrate respect, issue challenge, explore alternatives, use constructive exchanges, accept resolution	
2	Apply Problem Solving Strategies	Engage members in planning, identify protocol or develop plan, engage team in decision making, alert team to potential biases and errors, report slips, lapses, and mistakes to team, use advocacy and assertion, apply 2 challenge rule	
3	Support Team with Information	Employ common terminology, call out requests for info, use check backs to verify info, systematically handof responsibilities during transitions, offer info to support decisions, communicate decisions to team members, offer information to support planning, communicate plans to team members, seek information for decision making, seek info for planning	
4	Execute Plans and Manage Workload	Execute protocol or plan, resolve deviations from protocol or plan, integrate individual assessments of patient needs, replan patient care in response to overall caseload, prioritize patient tasks, prioritize all tasks for all team's patients, balance workload within team, request help for task overload, offer help for task overload, use periods of low workload, cross monitor actions, redirect team focus back to team and clinical tasks, request SA updates, provide SA updates, monitor execution of protocol or plan	
5	Improve Team Skills	Provide situation-specific teaching, explain previous actions unexplained due to urgency, engage in team review	

Evaluator:

Notes: Consult the behaviorally anchored rating scales for details. Enter a summary rating (1, 2 ... 7) in the rating block for each Team Dimension. Refer to the rating scale below.

Rating Scale						
Very Poor	Poor	Marginal	Acceptable	Good	Very Good	Superior
1	2	3	4	5	6	7

Observed Error Record

1. **Measure Category:**   Team Behavior

2. **Type of Measure:**   Observational

3. **Status of Development:** Under development

4. **Data Elements:**   Fixed

5. **Data Fields:**   Form

6. **Comment:**   This instrument will be available to record any team errors that data collectors may observe while collecting other data, such as BARS assessments, in the ED.

Observed Error Record for BARS Assessment

1. Did you observe any errors? _____Yes _____No

2. If you answered Yes to the Question 1, provide a brief one or two sentence description of what you observed.

3. Did you intervene? _____Yes _____No

4. If you answered Yes to Question #3, what actions did you take?

5. In your opinion, would teamwork have eliminated the error or reduced it?
   _____Yes _____No

6. If you answered Yes to Question 4, which BARS behaviors would have been employed to eliminate or reduce the error?

Subjective Workload and Stress Scales

1. Measure Category: Team Behavior

2. Type of Measure: Survey

3. Status of Development: Completed

4. Data Elements: Fixed

5. Data Fields: Form A. Six scale NASA Task Load Index
Form B. Overall Workload and Stress Scale

6. Comment:

Subjective Workload Assessment
(Form A)

Time _____   **Location** _____   **Position** _____

Rate your workload in providing care to this patient by completing the following six scales. Place an X on the vertical line of each scale

Mental Demand
How mentally demanding was the care you provided?

Very Low   Very High

Physical Demand
How physically demanding was the care you provided?

Very Low   Very High

Time Demand
How hurried or rushed was the care you provided?
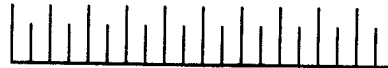
Very Low   Very High

Performance
How successful were you in accomplishing the
care you provided?
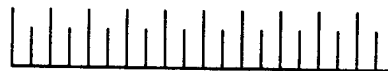
Failure   Perfect

Effort
How hard did you have to work to provide
the patient's care?
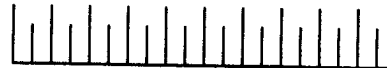
Very Low   Very High

Frustration
How insecure, discouraged, irritated and annoyed
were you in providing the patient's care?
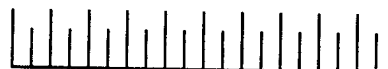
Very Low   Very High

Subjective Workload and Stress Assessment
(Form B)

For this point in your shift, rate your workload and level of stress using the scales below.

Overall Workload

Overall Workload: Rate your overall
workload for all the patients and the
responsibilities you have at this moment.
Place an X on one of the vertical lines of
the scale.

Very Low   Very High

Stress Scale

Circle **one** word that best describes how you feel <u>right now.</u>

Wonderful

Fine

Comfortable

Not bothered

Steady

Unsteady

Worried

Uncomfortable

Overwhelmed

Melt down

Form B. Overall Workload (OW)

Data Specifications

Data Item Descriptor	Definition and Specifications	Notes
Form B. Overall Workload (OW)	A Bipolar Rating question: asks the respondent to judge their workload along an ordered dimension. Bipolar ends specify opposite extremes of the workload continuum. The number of gradations correlate with odd numbers to allow for neutral point.	
Sampling Scheme	• Collect from each RN, Dr., and technician on duty. • Triage, Trauma, WI, and OU gathered and labeled to indicate gathering site.	• Attempts made to account for all data points. Respondents absent-on-duty for breaks and meals. • Distinguishing individual gathering sites provides PI with the ability to determine impact of site specific data.

Collection	• Administered with Stress Scale
	• OW & SS time to administer and scored.
	• Resources Needed - administered by research assistant.
	• Measure
	    -produced by research team.
	    -scored by research assistant.
	    -date entered by research assistant.
	    -analyzed by PI.
	• Time Estimation:
	    -10 seconds per respondent.
	    -20 respondents/15 minutes.	

FORM B: STRESS SCALE (SS)

Data Specifications

Data Item Descriptor	Definition and Specifications	Notes
Form B: Stress Scale	• Measure is cafeteria style question: asks respondents to "select a response that most closely corresponds to their perspective". • Composite Scale: assigned numerical values, placed on a continuum with respect to attributes being measured. • Quantitatively discriminates between respondents with differing perspectives.	
Sampling Scheme	• Collect from each RN, Dr., and technician on duty. • Triage, Trauma, WI and OU gathered and labeled to indicate gathering site.	• Attempts made to account for all data points. Respondent "absent - on-duty" for breaks and meals. • Distinguishing individual gathering sites provides PI with the ability to determine impact of site specific data.

Collection	• Resources Needed - administered by research assistant.
	• Measure
	  -produced by research team.
	  -scored by research assistant.
	  -data entered by research assistant.
	  -analyzed by PI.
	• Time Estimation - 10 seconds per respondent	

Teamwork Nursing Assessment

1. **Measure Category:**   Team Behavior

2. **Type of Measure:**   Survey

3. **Status of Development:** Completed

4. **Data Elements:**   Fixed

5. **Data Fields:**   Form

6. **Comment:**

TEAMWORK NURSING ASSESSMENT
(TNA)

Record the time delay between the point you believed the patient would be admitted and when the ED physician communicated the admit decision to you.

Date_____   Communication Delay:_____hrs._____min.
                                            (If no delay, enter 0)

Did the delay in communication cause a delay in the patient's admission? ☐Y ☐N

TEAMWORK NURSING ASSESSMENT

Data Specifications

Data Item Descriptor	Definition and Specifications	Note
Teamwork Nursing Assessment (TNA)	Objective Communication Measure: Asks two questions: 1. Is there a communication issue; and if so 2. Does that issue impact operations.	Assesses for TD3, Communicate with Team, of the ETCC™Team Dimensions
Sampling Scheme	Collect for all patients admitted where a difference exists between time points of RN to Dr. communication.	Monitoring admissions and prompting of professionals is essential initially to assure reliable outcomes.

Collection	• Resources: respondent self administers.
	• Measure:
	  -produced by research team.
	  -scored by research assistant.
	  -analyzed by PI.
	• Time Estimation: Dependent on number of patient admissions. 10 minutes per each 10 nurses (example 80 minutes per 10 nurses for an eight hour shift).
		• Hypothesis: As self prompting to record each admission event increases the aggregate data collection time will decrease.

Pedometer Studies

1. **Measure Category:**   Team Behavior

2. **Type of Measure:**   Observational

3. **Status of Development:** Under development

4. **Data Elements:**   Fixed

5. **Data Fields:**   Form

6. **Comment:**

ETCC™ Course Evaluation

1. **Measure Category:**   Team Behavior

2. **Type of Measure:**   Program Evaluation

3. **Status of Development:** Completed

4. **Data Elements:**   Fixed

5. **Data Fields:**   Form

6. **Comment:**

Emergency Team Coordination Course

Course Evaluation

Name: _____ (optional)   **Date:** _____

A. Listed below are the program objectives. Please rate the extent to which you are now able to:

	Low	High
1. Identify the benefits and key elements of teams.	1 2 3 4 5	
2. Describe team structure and climate as it relates to the emergency environment	1 2 3 4 5	
3. Describe several problem-solving strategies that can be applied in the emergency environment.	1 2 3 4 5	
4. Discuss ways to execute plans and manage workload in the emergency environment.	1 2 3 4 5	
5. Describe how to support the emergency department team(s) with information and actions.	1 2 3 4 5	
6. Identify methods to improve team skills	1 2 3 4 5	
7. Discuss the clinical integration of team coordination in the emergency environment.	1 2 3 4 5	
8. Employ a variety of team coordination skills in the emergency environment.	1 2 3 4 5	

B. Content:

Related to Objectives	1 2 3 4 5
Well Organized	1 2 3 4 5

C. Teaching Strategies:

Effective Teaching Methods	1 2 3 4 5

For the following ratings, 1 = poor and 5 = excellent

D. Faculty

	Instructor A	Instructor B	Instructor C
Presentation Style	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Knowledge of Subject	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

E. Physical Facilities   1 2 3 4 5

F. How will you use the information you received today to improve your practice?

H. Comments:

Emergency Team Coordination Course

Course Evaluation (continued)

I. Other Ratings

1. Time available for the instructor to adequately present and discuss each team dimension topic.

Not enough time				Too much time
1	2	3	4	5

2. Pace of instruction

Too slow				Too fast
1	2	3	4	5

3. Vignettes presented realistic problems

Unrealistic				Realistic
1	2	3	4	5

4. Vignettes helped me to understand how to apply the team dimensions.

Not Helpful				Helpful
1	2	3	4	5

5. Team coordination techniques I learned today will become an integral part of my daily ED activities

Disagree				Agree
1	2	3	4	5

6. After attending this training, rate the usefulness of this course.

Of slight use				Very useful
1	2	3	4	5

7. Rate the format of the student workbook

Poor				Excellent
1	2	3	4	5

Resource Requirements for Data Collection

This section contains information on the resources required for data collection. As instruments were administered at RIH, a journal was kept of the time required to present an instrument to respondents, the time required for the respondent to complete the instrument, and the time required to score the instrument or record its data elements. These basic data form the basis for making estimates for the amount of time necessary to collect and record data during the actual implementation of the measurement suite.

Table 3 provides a listing of four factors associated with data collection. The factor What refers to the target of data collection such as the individual patient or the ED as a whole. The factor Who lists the person or functional entity most likely to collect the data. The third factor, When, is how frequently the data are collected. The final factor, How, lists the various forms in which the data are reported or available for use.

Two important findings emerge from the data in Table 3. The first is that a considerable amount of data of interest to the validation effort is probably collected by automated systems. These data can be entered into the data base through electronic means. The second is that most of the instruments developed for the validation can be administered by a research assistant trained in their administration and scoring. The expertise of a physician or nurse is required only for (1) observing and recording team behavior using the Behaviorally Anchored Rating Scales and (2) for recording clinical or procedural errors using the Observed Error Record.

In order to develop an estimate of the manhours required to collect a month's worth of data at a typical validation site, a scenario was created that integrates information gathered on the length of time needed to collect data with information provided in Table 3. The assumptions of the data collection scenario are the following

- A research site will employ a research assistant for data collection
- The site does not have automated support for length of stay data. The research assistant will review 50 medical records a day for 30 days to obtain length of stay data and other timed data.
- A physician or nurse will observe teams and provide behaviorally anchored rating scale data
- The research assistant has personal computer support for transferring data to a data base.

Tables 4 and 5 show the manhour estimates for collecting, recording, and entering data into a data base assuming a frequency of survey instrument administration at the moderate level. Table 5

Table 3. Factors Associated with Collecting Measurement Suite Data.

Measure or Instrument	Collection Factors				Actions		
	What	Who	When	How			
Performance							
Overall LOS	IP	A, RA	D	A, MRR			
Throughput Time Measures	IP	A, RA	D	A, MRR			
Subclassifications of LOS (admit/disch, teams, traumas, billing codes, ED sections)	IP	A, RA	D	A, MRR			
Timed Procedures or Events							
TPA-Stroke	IP	RA	IE	MRR			
Chest Pain Evaluation	IP	RA	IE	MRR			
Time to Treatment (charcoal, antibiotics for menigitis or septic children, asthma)	IP	RA	IE	MRR	Time to see MD perhaps best measure		
Quality Indicators					RA transfers data to database		
AMA	ED	QAO	M	QAR			
LWBS	ED	QAO	M	QAR			
Left Before Treatment Completed	ED	QAO	M	QAR			
Mislabeled labs	ED	QAO	M	QAR			
Mislabeled Bloods	ED	QAO	M	QAR			
Blood culture contamination rate	ED	QAO	M	QAR			
Medication errors	ED	QAO	M	QAR			
Incident Reports	ED	QAO	M	QAR			
Patient Complaints	ED	QAO	M	QAR			
Pt Compliments	ED	QAO	M	QAR			
Returns within 48 or 72 hrs	ED	QAO	M	QAR			
Treatment Delays - Consults	ED	QAO	M	QAR			
Treatment Delays - Charts	ED	QAO	M	QAR			
Falls	ED	QAO	M	QAR			
Other Indicators	ED	QAO	M	QAR			
Administrative							
Sick Leave	ED	HAO	M	AR			
Tardiness	ED	HAO	M	AR			
Unexcused Absences	ED	HAO	M	AR			
Staff Turnover	ED	HAO	M	AR	Nurses, techs, physicians		
Trauma Registry (Subset used for initial analyses)							
Arrival date at ED	IP	RA	W	AR			
Arrival time in ED	IP	RA	W	AR			
Discharge time from ED	IP	RA	W	AR			
Glasgow scale on ED arrival	IP	RA	W	AR			
Revised Trauma Score on ED arriv	IP	RA	W	AR			
ED disposition	IP	RA	W	AR			
Days in the ICU	IP	RA	W	AR			
Days in the hospital	IP	RA	W	AR			
GCS < 13, no CT	IP	RA	W	AR			
Cerv spine fracture missed	IP	RA	W	AR			

Table 3. Factors Associated with Collecting Measurement Suite Data (continued).

Attitudes and Opinion								
Maslach Burnout Survey		IS	RA	SE	DRCF	Twice before, then post?		
Staff Attitudes		IS	RA	SE	DRCF			
Patient Satisfaction		IP	RA	SE	LF, TS	Review and adapt local instruments for teamwork items or wellness questions		
Admission Evaluation Survey		IP	RA	AAP	DRCF	Review and revise for local use		
Patient Wellbeing Survey		IP	RA	AP	DRCF	Survey most likely to be dischg'd		
Team Behavior								
Behaviorally Anchored Rating Scal		IT	SME	SE	DRCF			
Teamwork Nursing Assessment		IP	RA	SE	DRCF			
Subjective Workload (full TLX and OWL)		IS	RA	SE	DRCF			
Stress Scale		IS	RA	SE	DRCF			
Pedometer studies		IS	RA	SE	DRCF			
Program Evaluation								
ETCC Course Critique		IS	RA	SE	DRCF			
Dept Demographics								
Number of visits		ED	RA	D	AR			
Number of admissions to inpatient units		ED	RA	D	AR			
Census per day		ED	RA	D	AR			
Net revenue per visit		ED	RA	M	AR			
Total expense per visit		ED	RA	M	AR			
Total cost per visit		ED	RA	M	AR	Material cost only		

bbreviation Codes

What: ED = emergency department IP = individual patient IS = individual staff member IT = individual team

Who: A = automated system HA = hosptial administration QAO = quality assurance office SME = subject matter expert RA = research assistant

When: AP = all patients AAP = all admitted patients D = daily IE = individual event M = monthly SE = scheduled event (specific schedule) W = weekly

How: A = automation AR = administrative report DRCF = Dynamics Research Corp form LF = local form MRR = medical record review QAR = quality assurance report TS = telephone survey

Table 4. Scenario Example: Time Estimate for Research Assistant to Gather Data

Measurement Activity	Subareas	Time Estimate (Hours)
Scheduled time in ED to collect data	3 hours per day for 30 days	90.0
ED Performance Collection	Quality Assurance Admin/Personnel Other Operations Data Length of Stay and Other Intermediate Times (see data entry) Timed Procedures (see data entry)	10.0
Attitudes, Opinion, and Team Behavior Collection	Admission Eval Survey (250 x .25 min) Maslach (100 x 2 min) Subjective Workload (100 x 1 min) Staff Attitudes (100 x 2 min) TNA (100 x .10 min) Pedometer Readings (50 x 5 min) Patient Wellbeing (300 x 1 min) Patient Satisfaction (see data entry)	1.0 3.3 1.7 3.3 0.2 4.2 5.0 18.7
	GRAND TOTAL	**118.7**

Table 5. Scenario Example: Time Estimate for Research Assistant to Score and Enter Data

Measurement Area	Subareas	Time Estimate (Hours)
ED Performance	Quality Assurance	4.0
	Admin/Personnel	1.0
	Other Operations Data	4.0
	Length of Stay and Other Intermediate Times (30 days x 50 MR/day x 2 min/MR)	50.0
	Timed Procedures (30 forms x 2min/form)	1.0
		60.0
Attitudes, Opinion, and Team Behavior	Admission Eval Survey (250 x 1 min)	4.2
	Maslach (100 x 3 min)	5.0
	Subjective Workload (100 x .10 min)	1.3
	Staff Attitudes (100 x 3 min)	5.0
	TNA (100 x .10 min)	0.2
	Pedometer Readings (50 x .10 min)	0.1
	Patient Wellbeing (300 x .40min)	2.0
	Patient Satisfaction (250 x 1.5 min)	6.3
		24.1
	GRAND TOTAL	**84.1**

Table 6. Scenario Example: Total Times for Data Collection, Scoring, and Entry

Researcher	Data Activity	Time Estimate
Physician or Nurse	Behaviorally Anchored Rating Scales: 30 1.0 hour observations 20 0.5 hour observations	40 hrs
Research Assistant	ED Performance, Attitudes and Opinion, Other Team Behavior	203 hrs
	TOTAL	243 hrs (30 days)

summarizes the manhours required for the physician or nurse and research assistant data collection team. This scenario indicates that a full-time research assistant will be required at the typical site to collect data for the full validation suite of instruments. The physician or nurse will be required to complete 40 hours of data collection during the same period. Note that automated support for collecting length of stay data will reduce the data collection effort by 50 hours. Other automated data sources could reduce this "worse case" scenario manhour estimate further.

APPENDIX

Behaviorally Anchored Rating Scales

Emergency Medical Team Dimension 1: Maintain team structure and climate

Overview

This rating assesses the quality of professional relationships among physicians, nurses, and other personnel comprising the emergency care team, and the overall interpersonal climate of the emergency department. Team members acknowledge the essential team objective--provide the highest standard of patient-centered care. The team's goals are both patient-centered and task-centered with the focus on achieving both goals rather than who specifically accomplishes them.

The team leader in emergency medicine is the attending physician who has final authority in clinical matters. The senior attending physician sets the tone of the team and maintains a cooperative working environment by sharing or delegating authority and promoting the participation of all team members.

This rating also concerns the importance of the timely dissemination of information essential to team formation and coordination. Team formation consists of learning who is serving on the team and knowing each team member's responsibilities, becoming aware of the clinical status of the team's patients, and knowing the operational issues in the emergency department and elsewhere affecting overall operations. All team members communicate essential information through face to face contact or other means.

Because emergency care is a team effort, each member recognizes his or her own special skills, and acknowledges and appreciates the skills of other team members. Team members understand their interdependence and demonstrate a willingness to assume responsibility, act autonomously, and offer assistance to other team members. Team members assist each another in achieving the highest technical competence and advocating respect for patients and coworkers. While the physician has clear lines of clinical authority and responsibility, team leadership is flexible since situations may require any team member to assume situational leadership. Decisions are supported by the team even when there may not be complete agreement.

Superior Rating (7)

Each team member assumes responsibility for becoming aware of relevant clinical and operational issues. The attending physician and a nursing team member ensure that actions, duties, and task responsibilities are partitioned and clearly assigned to specific individuals. Questions and discussion about tasks and specific responsibilities are encouraged.

The team members have very good interpersonal relationships. They respect others' skills and appear to enjoy being with each other. There is a genuine concern for good working relationships. Team members go beyond common workplace courtesies to express appreciation of other member's contributions and to reinforce good teamwork. No degrading comments or negative voice tones are used in interactions. The climate is very open; team members freely talk and ask questions. Team members encourage the individual with the most information about the situation-at-hand to participate. Disagreements are perceived as a normal part of team interactions, and the team directly confronts the issues over which the disagreement began. Arguments or disagreements focus on the specific situation behavior or solution rather than on personalities. Each team member carefully listens to others' comments. Senior team members accept challenges from junior team members. Alternative solutions are explored. The solution produced is a "win-win" situation in which all team members' opinions are considered. The team members have no hard feelings at the conclusion of the incident. Offers of assistance are freely given and appreciatively acknowledged. Each team member demonstrates patient-centered care attitudes. Team members monitor the attitudes of other team members and offer positive and negative feedback.

Acceptable Rating (4)

A brief description of the current emergency department status is provided to some or all members of the team. The attending physician and nursing team members ensure that task responsibilities are partitioned and assigned to specific individuals. Routine assignments are adequately covered, but contingencies for special situations are not carefully planned. One or more team members seek necessary information during the course of organizing the team, but some team members remain less well informed than others.

The team members have sound interpersonal relationships and seem to respect one another's skills. However, staff members interact on clinical and operational issues in a business-like manner and engage in only limited socially-oriented interchanges. Although team members are courteous, the tone of interactions is formal and businesslike. The climate is an open one, and team members are free to talk and ask task-oriented questions. Regardless of rank, duty position, or professional status, individuals with information about the situation-at-hand are allowed to participate. When disagreements arise, the team directly confronts the issues over which the disagreements began. The primary focus is on behavior or solutions, and no personal attacks are made in the heat of discussion. The solution is generally seen as reasonable. Problem resolution ends on a positive note with very little hostility or grumbling among team members. Mutual respect is clearly intact. Team members generally remain focused on their assigned tasks, but assistance is offered as conditions allow. Obvious disregard of patient-centered attitudes is not apparent. Team members correct instances of improper patient-centered attitudes.

Very Poor Rating (1)

A team member provides some or all team members with essential work-related information with little or no attendant explanation. There is little or no discussion of responsibilities or their assignments to specific team members. Team members tend not to ask questions about the operations for their shift. If asked, questions tend to be cut off, only briefly addressed, or ignored by the other team members.

Team interactions are often awkward and uncomfortable. The team members do not appear to like or respect each other. Team members may be curt and impolite to each other. Requests for assistance are made as commands rather than as requests for support. When disagreements arise, the team fails to directly confront the issues. Personal attacks may arise. Senior team members are resistant to recommendations from junior team members. Team members do not explore the range of possible solutions. They may shout or argue without finding a solution. One or more team members may retreat and say nothing at all. A "win-lose" situation develops in which one team member is shown to be right and the other to be wrong. The team members show little respect to one another except for deferring to formal rank or professional status. Assistance may be withheld or provided only in cases of extreme need. Team members exhibit attitudes that may jeopardize patient welfare.

Emergency Medical Team Dimension 2:   **Apply Problem-solving Strategies**

Overview

This rating evaluates the team's ability to apply established algorithms, protocols, and other preplanned actions, and to demonstrate flexibility in modifying these or planning for emergent situations. The quality of the team's engagement in the decision-making and planning processes is assessed. The openness to contributions of information or ideas from team members is evaluated.

The team engages in planning activities required for unusual situations in patient care, and carries out established routines and practices for anticipated clinical and administrative situations in the emergency department. Planning for unusual situations involves collecting essential information, identifying potential problems and courses of action, assessing risks, and determining required tasks and assigning specific responsibilities to each team member. Planning also may include mental rehearsal or practice of the anticipated course of action. Team members also implement department-wide plans, protocols, and algorithms covering routine operational and clinical situations.

Although the physician or situational leader is responsible for leading planning activities, this rating evaluates the extent and manner in which the entire team participates. Also, the time constraints on the team is considered. If there was insufficient time to conduct comprehensive planning and rehearsal, the team is assessed on its planning and rehearsal of the most critical segments of a significant situation. That is, either before the situation or while it was unfolding, did the team address the most important issues given the time available? Note: The relationship among team members should be observed during this period but the team climate evaluation should be made on rating Emergency Medical Team Dimension 1, Maintain Team Structure and Climate.

Factors to consider in making an evaluation of decision-making include (a) information available to the team members, (b) time urgency of the decision, and (c) level of involvement and information exchange among the team members. The time-critical demands of emergency medicine require many decisions to be made on an event-driven basis with only a minimum level of information exchange. However, when adequate time and information are available, team members are expected to engage in a more deliberate and interactive style of decision making. The evaluation of team decision making performance should ask the following questions:

1. Did the team use all of the available information?
2. Was the type of decision process (event-driven versus analytical) appropriate for the time available?

3. Was the level of information exchange among team members appropriate and sufficient for the decision process used?

The actions of team members in establishing and maintaining an error-free environment is included in this assessment. Team members understand that judgemental biases impede effective decision-making, and that slips, lapses and mistakes are naturally-occurring events instrumental to substandard care. Failures of team members to correct specific instances of biased decision making or errors are assessed in this team dimension. That is, the absence of error-correcting behavior when one or more team members is aware, or should be aware, of erroneous behavior is assessed in this team dimension. The team's proactive use of emergency department error-avoidance systems and procedural safeguards is also assessed. However, the use of situation-specific team actions to intervene to correct an error, such as cross-monitoring or maintaining situational awareness, is assessed under the appropriate team dimensions.

Finally, this rating evaluates the extent to which team members advocate a course of action they consider best, even when it may differ with the one being followed or proposed. Note: Except under extreme conditions where time is absolutely critical, it is usually in the team's best interest to hear the full range of viewpoints available. Invoking the Two-Challenge Rule is an action assessed in this team dimension.

Superior Rating (7)

The team acquires new and updated information and uses it to develop or modify the plan of action. All actions, duties, and task responsibilities of the plan are partitioned and clearly assigned to specific individuals. Questions and discussion about the situation and specific responsibilities are encouraged. Potential problems are noted and discussed. Courses of action and individual responsibilities are established in the event that potential problems actually occur. The physician or situational leader leads the team in mentally rehearsing or practicing the plan by visualizing and talking the team through potential problems and contingencies. Team members acknowledge understanding their assigned responsibilities and cues for action.

Team decision- making consistently reflects proper attention to available information. The level of team participation and deliberate analysis of options is appropriate for the decision time available. Resulting decisions are timely and appropriate given the time urgency and level of information available in each situation. Team members effectively use existing error-avoidance systems and procedures, and anticipate or actively corrrect emergent error situations. Team members appear motivated to seek the most effective, unbiased, and safe decision in each situation. The team decides and implements a course of action before the situation jeopardizes team performance or patient welfare.

A-6

Team members state to the rest of the team a course of action that they consider best. They clearly explain their reasons for believing this to be the best course. Other team members listen to the argument before presenting any criticism or proposing alternate courses. Discussions focus on the strengths and weaknesses of the proposed course of action, not on the professional status or personality of the team member who proposed the action. Other team members expect such open comments and view them as positive contributions to team performance. The two-challenge rule is an accepted method for avoiding serious actions by any team member.

Acceptable Rating (4)

A brief description of the situation is provided to the entire team. Responsibilities are partitioned and assigned to specific individuals. Actions are taken to update current information that adds to the situation briefing and helps develop the plan. One or more team members make comments during the course of developing the plan. Potential problems are only briefly discussed. There is adequate preparation for contingencies. Team members briefly discuss the operational risks in the plan. Mental rehearsal or practice is initiated by the physician or another team member who talks through potential problems or contingencies for one or more aspects of the intended action. Some discussion takes place to clarify responsibilities in the event of unexpected problems or contingencies.

Team decisions sometimes reflect a reluctance to share or use available information. Occasionally, team members dwell too long on some issues while neglecting more time urgent requirements. Most decisions are timely, but on occasion are not well resolved or understood by the team. Most decisions are appropriate for the situation with the team occasionally overlooking one or more factors or options. Occasionally, team members do not recognize or exploit opportunities for additional planning or rehearsal, substituting *ad hoc* strategies or plans. Team members avoid errors by using systems, procedures, and team actions. Decision biases are avoided. The situation may worsen slightly without seriously degrading patient treatment before the team decides and implements a course of action.

Team members state their support for a course of action or suggest improvements to other proposed actions. Each team member makes an effort to explain his or her position and convince others to concur on the course of action to be taken. Other team members may counter with their views and alternatives. Team members usually speak out when they recognize a risky departure from standard procedures or when they have a piece of information that is important to another's task execution. Other team members view such comments as constructive and not as a challenge to authority. The two-challenge rule is a formal policy reserved for only the most serious cases of impaired capacity for team members.

Very Poor Rating (1)

The physician briefs the situation with little or no attendant explanation. There is little or no discussion of specific team member responsibilities. Team members tend not to ask questions about the situation. If asked, questions tend to be cut off, only briefly addressed, or ignored by the other team members. Little or no mention is given to potential problems or complications. No team member says anything about operational risks or weaknesses in the plan. Any suggestion to talk through a potential problem or rehearse responsibilities is rejected as unnecessary. Interactions are abrupt and impersonal.

Planning reflects an inflexible style of decision making (either event-driven or analytical) despite time urgency. Team members may engage in excessive deliberation, overlook the relative urgency of competing decision requirements, or act impulsively. As a result, decisions frequently lack timeliness, ignore important factors, or appear out of context. Information exchange and team member interaction is minimal, so that critical input is ignored or not sought. Serious errors may be captured before they have serious consequences, but error-avoidance for less serious errors is not adequate. Decision biases may not be challenged . Theteam may be unable to decide or implement a course of action before a situation becomes critical.

Except for the team leader, team members almost never suggest a course of action. Team members attempting to propose a course of action may be cut off before they can propose the action or explain the rationale for that action. Team members proposing courses of action may receive personal attacks. Team members may even fail to intervene when risks such as incorrect procedures or using faulty equipment arise. The two-challenge rule is not involked by team members.

Emergency Medicine Team Dimension 3: Communicate with the Team

Overview

This rating covers the assessment of the quality of information exchange within the team and the degree of reciprocity among team members in giving and receiving information and assistance. The rating also includes an evaluation of the team's adequacy in obtaining information from patients and providing information to patients.

Completeness, timeliness, and quality of information transfer. Consider both oral and written communications. Rate the information value and clarity of team member communication in terms of its timeliness, completeness, and avoidance of ambiguity (e.g., the use of standard terminology). Include in the evaluation the use of call-outs, check backs, feedback, and acknowledgments to verify information transfer and hand-offs to ensure coordination of patient care. Evaluate the quality of instructions and statements associated with a patient's evaluation and emerging treatment plan. Also, take into consideration information exchange with patients. Patient-oriented examples include obtaining essential history and symptom information, updating patients on the status of their diagnosis and treatment, and providing discharge instructions.

Supporting information and actions sought from the team. Rate the extent to which team members, particularly the physician or situational leader, seek supporting information and actions from the team. Evaluate the degree to which team members raise questions regarding plans, revisions to plans, actions to be taken, and the status of key information. Note: The extent to which team members contribute to decision making should be observed here but evaluated under Emergency Medicine Team Dimension 2: Apply Problem Solving Strategies.

Supporting information and actions offered by the team. Rate the extent to which team members anticipate and offer both supporting information and actions. Supporting information is offered by team members to the decision maker or situational leader evaluating a situation or preparing to make a decision. Team members' initiatives and responsiveness to help others perform their tasks are also evaluated.

Decisions and actions communicated and acknowledged. Rate the extent to which a course of action is announced to the team members after decision-making input is solicited from them. Team members should respond verbally or with appropriate adjustment to their behavior and actions to clearly show that they understand when a decision has been made and what it is. Failure to announce a decision may confuse team members and lead to uncoordinated operation. Note: Due to time constraints in

certain situations, there is often little or no time for teams to make inputs to a decision. In such cases, raters should focus on the extent to which decisions are announced and acknowledged verbally or through coordinated, pre-planned action.

Superior Rating (7)

Team members communicate with each other and their patients frequently. Both senders and receivers use standard terminology and unambiguous language for all communications. Senders provide clear, concise information. Receivers acknowledge nearly all messages in sufficient detail so that the sender can verify that the receiver understands the message. Receivers freely ask questions to clarify their understanding. Senders pursue feedback when no response is forthcoming. Senders and receivers integrate check-backs and call-outs into clinical situations. Whenever a workload change or task responsibility transfer (hand-off) occurs, the change is communicated and acknowledged by the team. In the case of communicating with patients, team members offer frequent updates in language the patient can understand. Patients' questions are answered as completely and thoroughly as possible. Discharge instructions are carefully explained and supplemented with written instructions.

When the physician is formulating a diagnosis or a situational leader is making a decision, he or she alerts the primary care team and seeks suggestions on possible solutions and important information to consider. The physician or situational leader is open to all suggestions. Team members respond to these inquiries with sound, task-focused discussions and clear answers provided in a timely manner. Team members raise questions on diagnoses and treatment plans or changes to plans and actions. Nearly all these inquiries surface information that contributes to the decision making process. The physician or situational leader states decisions and intended actions and, time permitting, explains the reasons and intent. Team members acknowledge the decisions with a clear verbal response and ask questions to clarify any confusion. The leader answers all questions in a positive, straightforward manner.

Team members are particularly attentive to communicating workload changes and information essential for maintaining situational awareness. All team members seek assistance and information from others in performing their tasks. Similarly, all team members anticipate the task needs of other team members and offer relevant information and assistance. Offers of assistance cover the range from highly skilled to mundane tasks. Team members keep one another informed of the results of their activities and changing task responsibilities.

Acceptable Rating (4)

Team members communicate about individual patients and general operational issues as required. Standard terminology and unambiguous language are usually used. Receivers acknowledge most messages. Receivers generally ask questions for clarification. Senders usually pursue feedback when no response is forthcoming. Team members are appraised of changes to significant factors and task responsibilities during clinical events. Duties are specified and communicated to others. Patients' questions are answered in understandable language and updates are offered intermittently. Discharge instructions are brief and to the point and supplemented with written instructions.

The physician reviews available patient clinical data and asks team members for essential information to arrive at a diagnosis, make decisions, and formulate a plan of action. Time permitting, the physician offers team members a brief explanation his or her diagnosis and plans. The team acknowledges its awareness of the physician's decisions and directions. Team members may ask questions to clarify confusion. The physician or situational leader answers questions clearly and quickly. In situations of less well-defined diagnostic or problem resolution certainty, the physician or situational leader alerts the team to the need for more extensive information exchange. Team members usually respond to these inquiries with brief exchanges that may provide previously uncommunicated information or insightful suggestions. The physician or situational leader listens to new information and suggestions without interruption or criticism and asks for clarification as necessary. Team members regularly use check-backs and call-outs.

Team members tend to focus their information gathering and exchange on patients within their individual spheres of responsibility. The team as a whole maintains a general awareness of the status of all patients being cared for by the team. The team may or may not be aware of the general status of operations within the emergency department. Changes to situation awareness are verbalized across the team as the workload changes. Team members sometimes seek assistance and information from others in performing their individual tasks. Similarly, all team members anticipate the task needs of others and offer relevant information and assistance as their individual workload permits. Task demands dictate the level of information exchange and reciprocity of helping behaviors. That is, urgent or emergent situations reveal heightened levels of verbal exchange and greater task interaction than nonurgent situations.

Very Poor Rating (1)

Team members may fail to make statements regarding critical information. Non-standard terminology is used or standard terminology is used inappropriately. Sender messages may be inappropriately delayed or irregular and may be confusing. Receivers usually do not verbally acknowledge the receipt of messages. Receivers do not ask questions. Senders do not pursue feedback when no response is forthcoming.

A-11

Check backs and call-outs are seldom or never used. Changes in responsibilities during an event are often not communicated and may result in confusion over who has a task responsibility. Information may be incomplete or confusing. Patients' questions are answered, but without regard to the clarity or understandability of the answers. Generally, updates are provided to patients only on request; they are not offered voluntarily. Discharge instructions are cursory and written instructions may not be reviewed.

The physician or situational leader makes decisions without seeking inputs from other team members nor alerting the team that a decision is required or is being made. Decisions and intentions of the physician or situational leader are often not passed on to the team. [Note. Decision making and planning are done by one individual with little or no discussion–an observer will have difficulty noting this quality for "very poor" teams since it is hard to detect individual decision making.] The team is often not aware that a decision has been made. As a result the team does not offer suggestions and inputs to support decision making or actions. Team members almost never raise questions about plans, actions, or changes to plans. The physician or situational leader may not acknowledge or respond to questions, or may abruptly answer them. Two physicians may attempt to simultaneously take control of a patient when control authority has not been negotiated.

Team members infrequently ask for team assistance with tasks even when they are overloaded to the point of nearly failing to properly execute them. The team generally does not offer its services to support task execution by other team members. Team members may discourage others from asking questions or seeking assistance by the tone of voice they use or by failing to respond. Team members may take uncoordinated actions without stating intentions or expected results.

Emergency Medicine Team Dimension 4:   **Execute Plans and Manage Workload**

Overview

This rating concerns the adequacy of carrying out plans and protocols and managing changing levels of workload. The rating begins at the point where the team has chosen to carry out a routine treatment plan or protocol, or has completed planning activities required for an unusual situation in patient care. The effectiveness of carrying out the course of action for an individual patient and executing ongoing plans for all patients within the team's area of responsibility is the focus of this assessment.

One dimension of the rating is the attentiveness of the team to conducting secondary triage of its patients, and establishing new priorities for patient care. Reprioriatization is necessary as the conditions of patients change or new patients arrive who require higher levels of care. This periodic reassessment may require the team to reenter the decision and planning cycles for one or more patients.

Evaluate the effectiveness of time and work management. Rate the extent to which the team as a whole avoids being distracted from essential activities, perceives transitions in workload levels, distributes workload among team members, and avoids individual team member overload. Evaluate the team's performance under unusual circumstances that may involve high levels of stress. Assess the integration of technical and managerial strategies for contending with stressful and high workload situations. The delegation of task responsibilities among team members is one such strategy that should be considered in this rating. Another strategy is the prioritization of critical and noncritical duties.

Rate the extent to which the team uses cross-monitoring as a mechanism to avoid errors and reduce risk. Team members can catch each other's errors or risky behavior. Such redundancy is particularly important when teams are fatigued, stressed, or too focused on critical tasks.

Finally, include in this rating an evaluation of maintaining situational awareness. Rate the extent to which team members keep each other informed. Information reported includes the status of patients, team member welfare, and significant operational factors within the emergency department such as equipment status and institutional conditions.

Superior Rating (7)
The team remains calm and imposes the maximum amount of control possible over the situation given the available time and internal and external resources. Each team

A-13

member immediately takes on individual workload responsibilities based on prior discussions or rehearsal. Each member handles his or her own responsibilities and seeks to support the team member with the greatest workload. Team members are aware of workload buildup on others and readjust workload by assuming emerging, unassigned tasks. Overloads do not occur.

Virtually all distractions are avoided. Each team member understands precisely what information is relevant to the situation and what information is simply a distraction. If a team member becomes mildly distracted, other team members remind him or her to focus on the task. Each team member is concerned that all tasks are properly executed and checks both his or her tasks and those of others. When mistakes are noted, the team member making the error is quickly informed in a concise manner without excessive formality. The person in error accepts this feedback as a normal part of team operations. All duties are prioritized and noncritical duties are delayed until low workload periods or termination of the event.

The team's planning horizon is proactive, that is, always "one or two steps ahead." This is evidenced through reprioritization of treatment and disposition plans for some or all of the patients within the team's area of responsibility. Replanning may occur for some patients.

Team members maintain situation awareness of the progress of their patients in the emergency department process (evaluation, treatment, and disposition) and of possible operational impediments to that progress. All changes in patient conditions and emergency department operational status are verbalized and acknowledged. Team members also maintain situational awareness of other team members' well-being (e.g., emotional or physical conditions that may affect performance). Team members volunteer information on themselves so that others may be supportive.

Acceptable Rating (4)

The team responds to problems in carrying out a treatment plan or protocol without overreacting. The physician's or situational leader's requests for information are met by feedback from the team. The team generally takes actions to reduce each other's task load and in most situations provides information even if it is not specifically requested. The leader and team make good use of available resources. The team is intense but only mildly flustered by most clinical situations.

Most distractions are avoided. The team performs well in deciding what information and activities are essential to the clinical event. Most nonessential information is discarded or ignored. Non-critical duties are prioritized and delayed until low workload periods or the event has terminated. Team members are aware of individual team member workloads during each phase of a clinical event. When an individual

team member appears to be overloaded, other team members may notice and take on part of the workload. Workload sometimes appears poorly distributed and may require the team leader delegate responsibilities. The team's replanning and reprioritization are adequate for the developing situation.

Team members often check each other's task performance for errors. An individual making an error is informed and makes the needed corrections. Only occasionally are persons in error annoyed at being checked and corrected.

Team members usually provide situation updates on patient and emergency department operational status. Obvious changes in team member welfare are noted and acknowledged without fear of sanctions.
Very Poor Rating (1)

The team becomes disorganized and flustered. The team's requests for information elicit inadequate responses. Team members may focus on the wrong issues, thus delaying correct response to the problem. The team focuses on only one solution to an event, does not consider other plausible alternatives, or chooses an inappropriate solution. Lack of coordinated actions adds to the confusion. The leader and team members make poor use of available resources to resolve the problem.

The team is easily distracted. The team is unable or unwilling to decide what is important and relevant to the immediate situation. There is little prioritizing of duties or actions. Time and energy may be wasted on low priority tasks. Risks to patient safety or welfare may occur as the team focuses on minor tasks while critical tasks requiring immediate attention go unattended. Neither the overloaded party nor other team members take voluntary actions to eliminate an overload condition. The team makes little or no effort to redistribute task responsibilities as situational changes occur and new tasks arise. Individual team members experience workload overloads. The team's planning horizon is "playing catchup."

Team members seldom, if ever, check each other's task execution. Team members are insulted if they are corrected by another team member.

Team members do not routinely provide updates on patient status or operational status of the emergency department. Generally, updates are provided only on request; they are not made voluntarily. Personal welfare problems such as fatigue or lack of attention are not mentioned.

Emergency Medical Team Dimension 5:   Improve Team Skills

Overview

This rating concerns the ability of the team to monitor and review its general performance, evaluate the quality of its work, and improve its teamwork processes. Evaluate the team on spontaneous and planned discussions of its strengths and weaknesses with respect to technical skills and team coordination. Discussion themes include what was done wrong, what might be done better, how improvements can be made, and what was done well.

Rate the occurrence of situational teaching and learning that occurs as events unfold. One example is a physician discussing his clinical impressions with a nurse following his or her examination of a patient. Another is an EMT explaining to a physician the proper positioning of a patient for intubation.

Rate the frequency and adequacy of the team's process reviews. Process reviews provide a mechanism for process analysis and quality improvement and focus on methods for improving team effectiveness. Rate the team's use of the five team dimensions to systematically examine and benchmark its performance. This requires recurrent examination of both technical task and team coordination outcomes, and answers the questions, "What is the team doing?" and "How well is the team doing it?"

Reviews can be informal or formal. Informal reviews tend to occur close to the time of the event and are likely to be limited to those directly involved in the situation. An example is two team members discussing how to improve their coordination on a procedure they have just completed. Formal reviews can occur as retrospective audits or case conferences. They are usually scheduled in advance and provide an opportunity for more team participation. An example of formal reviews are educational forums typically taking place away from the immediate clinical area. They are usually scheduled to maximize team member attendance

Superior Rating (7)

This team demonstrates exceptional attention to critiquing and improving task and process skills. Instruction and case review occur whenever opportunities arise and circumstances allow. Reviews equally address task issues (i.e., quality of clinical interventions) and process issues (i.e., team effectiveness). The team dimensions are integrated into all critiques of team performance.

Expert coaching and teaching are provided by team members. Team members demonstrate an interest in learning and teaching, and actively seek opportunities for both.

Formal reviews are conducted at regularly scheduled intervals. The team reviews clinical outcomes to improve the quality of care delivery. Reviews are conducted in a professional manner with an emphasis on education and improvement of task performance. Superior teams balance clinical case review with team performance review. For example, a clinical case conference is held to discuss a particularly complex clinical case. In addition to reviewing the clinical course of events, the team also considers the effectiveness with which team processes such as decision making, communication, and workload distribution were managed during the case.

Members are comfortable giving and receiving critical feedback; they freely discuss how the team is functioning and make recommendations for improvement. All discussions focus on behavior and information and avoid accusatory tones. Innovation and creative problem solving are encouraged. Recommended improvements are implemented and outcomes reevaluated as part of a continuous process.

Acceptable Rating (4)

Situational teaching and learning occurs on occasion, usually in response to a direct inquiry from another team member. While there is some reluctance to reveal one's limitations, team members will approach certain individuals on the team for assistance with their learning needs. Formal reviews occur on an intermittent basis.

When members engage in performance review, attention is paid more to clinical issues than team process issues. Case reviews focus on obvious errors and identification of methods for avoiding these errors in the future. If one member of the team is technically weak, others can compensate and take advantage of the situation to teach a new skill or improve one that is weak.

Process review occurs most often following an event in which team performance was perceived to be problematic or contributed to a negative patient outcome. The team is less systematic about using the team dimensions as a reference for performance review. Interactions are positive and remain focused on behavior and decisions; there is no "finger pointing." Reviews are aimed at correcting the immediate problem rather than on improving general team performance.

Very Poor Rating (1)

Team effectiveness is rarely reviewed. There is no evidence of internalization of the team dimensions and no systematic approach to performance review. There is little effort to learn from previous actions. Virtually no teaching is observed even when clear opportunities to do so arise.

Obvious errors are corrected with little or no concern about improving future performance. There are times when basic procedures are ignored or violated. Opportunities for skill development are overlooked. Members are uncomfortable giving or receiving feedback. When case reviews occur (which is rare) they usually involve finger-pointing and blaming.