Study Finds Medical Necessity, Perceived Quality, Convenience and Cost Drive Emergency Department Visits

Studying patients' use of emergency room care

SUMMARY

During 2001 and 2002, researchers at Mount Sinai School of Medicine of New York University, New York, examined how people use emergency rooms.

The researchers analyzed information gathered from patients as they entered emergency rooms along with data in emergency room patient charts. The project is the first stage of Emergency Medicine Patients' Access to Healthcare (EMPATH), a national study sponsored by the Society for Academic Emergency Medicine.

Investigators analyzed 1,547 patient interviews and 1,956 chart reviews from a diverse sample of emergency room patients.

Key Findings

In presentations to the 2003 annual meeting of the Society for Academic Emergency Medicine, investigators reported the following:

- "For most patients, [emergency room] utilization is not driven by lack of other affordable options, but rather by the scope, quality and availability of [emergency room] services as compared to other sources of health care."

- "For minority and younger patients, financial constraints may dictate their access to healthcare options..." In four of the five regions studied, "[s]ignificantly more minority patients reported financial reasons for seeking care in the E[mergency D[epartment] than did white patients."

Funding

The Robert Wood Johnson Foundation (RWJF) supported this phase of the study with a grant of $108,968 between May 2001 and April 2002.
THE PROBLEM

The hospital emergency room (emergency department, or ED)—intended primarily for the treatment of urgent health problems—also frequently serves as the provider of last resort for poor and uninsured people who may have no regular source of care. Relatively high charges for emergency care and ED crowding brought attention to what have been labeled "inappropriate" emergency department visits: visits for non-urgent health problems.

What constitutes an "inappropriate" visit to the ED has been difficult to pin down. At registration, ED personnel routinely collect information from a patient about their symptoms and their medical history. But ED data systems typically capture only the diagnosis, arrived at after a thorough examination.

In studying ED use, researchers often use the ED diagnosis—called retrospective data—to decide whether a patient needed emergency care. These kinds of data do not provide a sound basis for evaluating ED use. For instance, if a 50-year old man is sent home from the ED with a diagnosis of muscle-related chest pain (a non-urgent health problem), researchers might retrospectively categorize the visit as "inappropriate."

But prospectively, when he entered the ED complaining of chest pain and nausea—warning signs of a heart attack—researchers would have classified this visit as urgent, regardless of what the final diagnosis turned out to be. Existing ED data also fall short in identifying which visits for urgent health problems (such as respiratory failure in a patient with asthma) might have been avoided with adequate primary care.

Researchers need a more accurate analysis of ED use in order to help identify vulnerable populations, to develop a method to interpret routinely collected ED data and to map the relationship between ED use and access to primary care.

CONTEXT

In 2000, a study by the Institute of Medicine, a branch of the National Academy of Science, concluded that the increasing number of uninsured Americans, eroding public subsidy and other factors place some health care "safety-net" providers at risk (America's Health Care Safety Net: Intact but Endangered). Public hospitals, clinics and other providers that deliver a significant portion of their services to the uninsured, Medicaid and other vulnerable populations comprise the safety net.

In response to this report, RWJF—as part of its commitment to increase access to health care—established a line of funding to improve the health care safety net. Before developing its strategy, RWJF wanted information about how ED crowding affects the safety net, particularly about last resort use of the ED by those without insurance. This project analyzed the current demand for ED care. It also explored the relationship
between local ED use and access to primary care, a potentially valuable tool to assess local health care needs and design accessible systems of care.

THE PROJECT

During 2001 and 2002, researchers at Mount Sinai School of Medicine of New York University examined how people use EDs. They analyzed information gathered from patients as they entered EDs, along with data in ED patient charts. The project is the first stage of Emergency Medicine Patients' Access to Healthcare (EMPATH), a national study sponsored by the Society for Academic Emergency Medicine. RWJF supported this phase of the study with a grant of $108,968.

Investigators selected 28 hospitals to provide a geographically diverse sample of EDs (see Appendix 2 for a list of regional leaders and participating hospitals). During a single 24-hour period at each hospital, researchers interviewed all consenting adult patients who came to the ED, and reviewed all ED patient charts from the same period.

- **Patient interviews** included questions on patient demographics, reasons for coming to the ED, access to other sources of care, type of health insurance and chief complaint.

- **Chart reviews** summarized information on patient triage status (critical, urgent or non-urgent), initial vital signs, chief complaint, clinical services provided, type of health insurance and outcome of the ED visit (such as admission to the hospital or discharge).

Researchers matched data from patient interviews with corresponding data from patient charts. An average of 77.8 percent of all eligible patients participated in the study. (Researchers did not interview patients transferred from nursing homes or hospitals. Illness prevented about 10 percent of those eligible from being interviewed; 2.2 percent declined to participate. See Appendix 3 for more about the study's methods.)

Lynne D. Richardson, M.D., chair of the Society for Academic Emergency Medicine's workgroup on health care access and vice chair of emergency medicine at Mount Sinai School of Medicine of New York University, led the project with an advisory group (see Appendix 1 for a list of members). The Mount Sinai School of Medicine contributed approximately $70,000 to cover unanticipated expenses of the study.
FINDINGS

Investigators presented their first findings in May 2003 at the annual meeting of the Society for Academic Emergency Medicine. After analyzing 1,547 patient interviews and 1,956 chart reviews from a diverse sample of ED patients, they reported that:

- "For most patients, [ED] utilization is not driven by lack of other affordable options, but rather by the scope, quality and availability of [ED] services as compared to other sources of health care." Analysis revealed four types of reasons patients reported for visiting the ED, consistent across all geographic areas:

  - Medical necessity—95.9 percent of those interviewed agreed that they were "too sick to go anywhere else," or "it's a medical emergency."

  - ED preferred—88.8 percent went to the ED because they receive "better care in the Emergency Department," or could "get everything done here."

  - Convenience—86.3 percent agreed that the ED is the "only place open," or that "no appointment is needed."

  - Affordability—29.9 percent "cannot afford anywhere else," or have "no insurance."

- "For minority and younger patients, financial constraints may dictate their access to healthcare options… Significantly more minority patients reported financial reasons for seeking care in the Emergency Department than did white patients." This was true in four of the five regions studied (Northeast, Mid-Atlantic, Southeast, Midwest). In some regions, minority patients were also more likely to attribute their ED visit to medical necessity (Mid-Atlantic, Midwest, Northwest). In three regions, younger patients were more likely to use the ED due to affordability than older patients (Northeast, Midwest, Northwest). Researchers found no gender differences in reasons for seeking care in the ED.

Limitations

- EMPATH findings may not represent all ED patients at that hospital or other hospitals over the course of a year, because data collection focused on ED patients in each hospital during one day.

- Researchers analyzed only selected aspects of ED use, and only among English- and Spanish-speaking adults in urban and suburban hospitals.

- The study relies on patient's self-report, information that cannot be verified.

Communications

Investigators presented their initial findings at the annual meeting of the Society for Academic Emergency Medicine in May 2003 (see the Bibliography for details). They
have begun work on articles on the following series of topics about the EMPATH study. Investigators plan to submit completed articles to peer-reviewed journals:

- Reasons for Seeking Care in the Emergency Department
- Racial/Ethnic-, Gender- and Age-Related Differences in Emergency Department Use
- Building a Measure to Assess Patient's Reasons for Coming to Emergency Departments: Some Methodological Considerations
- Verification of Self-Reported Patient Data
- Cluster Analysis: A Must-Use Tool for National, Multi-Site Studies of Access to Health Care
- Patient's Perception of Affordability of Healthcare: Is This a Barrier to Care?
- Are There Predictable Patterns in Reasons for Seeking Care?

LESSONS LEARNED

1. **Allow sufficient time for institutional review boards to complete a full review of the proposed study protocols.** In the wake of highly publicized human subjects violations prior to this study, many institutional review boards increased their scrutiny and adopted stricter policies. Only one institution approved this study's protocol using an expedited review; all others conducted a full review. One review required a five-month delay and significant changes to the protocol in order to collect data in any of the region's hospitals, and several hospitals could not obtain approval within the project schedule. One hospital's review board—where researchers had already collected data—asked that investigators drop those data from the study. (Project Director)

2. **Interviews in the ED should be short: ten minutes is the outside limit, but five minutes would be better.** Although some patients stay in an ED for a long time, many move from place to place as clinicians determine what they need. Interviewers must be able to approach everyone, collect data quickly and work flexibly with clinicians to avoid disrupting care. (Project Director)

3. **Small, well-adapted teams were able to complete the most ED interviews and disrupt care the least.** Capturing interviews from all adult patients in an ED challenged investigators. They found that:
   - The size of the interviewing team had to be gauged to the size of the ED and its peak capacity.
   - Having one person coordinate the interviews improved the number of interviews completed.
— Using some people on the interview team who were familiar with ED procedure (such as medical students) smoothed data collection.

(Project Director)

**AFTERWARD**

In 2002, RWJF began *Urgent Matters*, a $4.6-million national program to help hospitals eliminate emergency department crowding and help communities understand the challenges facing the health care safety net. *Urgent Matters* provides funding to selected hospitals for technical assistance to improve patient flow in the emergency department, and to do a safety-net assessment in that community. For more information, see the program website.

Investigators continue to analyze data collected for the EMPATH study. They have begun using EMPATH data to develop preliminary rules (an algorithm) to categorize ED visits. Because EMPATH data does not include seasonal influences (such as extreme heat) on ED use, they will seek additional funding for a study to collect data at various times throughout the year. This second study will be used to validate the preliminary algorithm.

Investigators shared local data with each hospital in the study (along with regional and national comparisons). At the conclusion of this grant, researchers had begun to assist each site to translate local findings into policy recommendations to ease ED crowding.

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APPENDIX 1

Advisory Group

(Current as of the end date of the program; provided by the program’s management; not verified by RWJF.)

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APPENDIX 2

Regional Leaders and Hospitals Participating in the EMPATH Study

(Current as of the end date of the program; provided by the program’s management; not verified by RWJF.)

Mid-Atlantic Region

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Northeast Region

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Southeast Region

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Midwest Region

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Sacred Heart Medical Center, Eugene, Ore.
Salem Hospital, Salem, Ore.
Southwest Washington Medical Center, Vancouver, Wash.
APPENDIX 3

Methods for the EMPATH Study Reported at the 2003 Society for Academic Emergency Conference

(Current as of the end date of the program; provided by the program’s management; not verified by RWJF.)

Investigators chose 28 U.S. hospitals stratified by geographic region and by hospital and patient demographics to participate in this cross-sectional, observational study. Data, collected during one 24-hour period at each site, were obtained through a structured interview* administered to all consenting adults patients who sought treatment during that period, and a chart review conducted on all presenting patients during the same time interval. Investigators also collected demographic, clinical and insurance data. In the interview, interviewers read 21 carefully worded statements designed to capture a range of possible reasons for seeking care in the ED. The patient then indicated his or her level of agreement with each statement (on a three-point scale) as a reason for that visit. Researchers analyzed correlation between responses to these 21 items in order to construct more robust measures of patients' reasons for coming to the ED.

Researchers completed 1,547 patient interviews and 1,956 chart reviews on a diverse sample of patients. They were 53.5 percent female; 56.5 percent white, 24.8 percent African American, 6.1 percent Hispanic, 1.9 percent Asian American, and 10.2 percent other, mixed or missing data on this question. The mean age was 48 years.

* The interview included selected questions from such national surveys as the National Health Interview Survey (NHIS) Access to Care supplement and the National Hospital Ambulatory Medical Care Survey (NHAMCS).

BIBLIOGRAPHY

(Current as of date of the report; as provided by the grantee organization; not verified by RWJF; items not available from RWJF.)

Presentations and Testimony

(Available from the Project Director)


**Audio-Visuals and Computer Software**

*Emergency Medicine Patient's Access to Healthcare (EMPATH) Study: Training Tape.* New York: Mount Sinai School of Medicine. Videotape used to train team members across the country who were responsible for collecting data in emergency rooms; copies distributed to each hospital participating in the EMPATH study.

**Survey Instruments**

"Emergency Medicine Patients' Access to Healthcare Study Patient Interview." Fielded in:

- Newark and Jersey City, NJ; New York
- Providence, Wakefield and Warwick, RI
- Albany and Atlanta, GA; Birmingham, AL
- Gastonia, NC
- Akron, Cleveland and Lorain, Ohio
- Eugene, Medford, Portland and Salem, OR and Vancouver, WA

"Emergency Medicine Patients' Access to Healthcare Study Chart Extraction Instrument." Fielded in:

- Newark and Jersey City, NJ; New York
- Providence, Wakefield and Warwick, RI
- Albany and Atlanta, GA; Birmingham, AL
- Gastonia, NC
- Akron, Cleveland and Lorain, Ohio
- Eugene, Medford, Portland and Salem, OR and Vancouver, WA