Preemptive Care for Frequent ER Users

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Houston Fire Department
911 Nurse Triage Pilot Project

Creating a Community Nurse Triage Operation
Harris County Healthcare Alliance

Serving as a catalyst for improving the healthcare system of Houston/Harris County
PILOT COLLABORATORS

HARRIS COUNTY HEALTHCARE ALLIANCE

Serving as a catalyst for improving the healthcare system of Houston/Harris County

[Images of various individuals and emergency responders]
911 EMERGENCY CALL TYPES

- Emergency medical dispatchers (EMD), using the computer-assisted medical priority dispatch system, interview callers in order to determine the location, nature, and priority of the caller’s situation. The calls are then classified into EMS Event Types.

- There are 44 different EMS Event Types classified by the medical priority dispatch system—the program began conservatively, allowing only 2 call types eligible for referral.

- There are currently 5 call types being used for referral to the triage nurse.

NURSE TRIAGE PILOT EMERGENCY CALL TYPES AVAILABLE

- ABDOMINAL PAIN
- SICK PERSON
- ALLERGIC REACTION
- HEADACHE
- PEDIATRIC FEVER
## Pre-Pilot Estimated Annual Triage Referral Volume

<table>
<thead>
<tr>
<th>911 Call Types</th>
<th>Estimated Triage Referrals</th>
<th>Estimated Field Referrals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal Pain</td>
<td>4,583</td>
<td>7,417</td>
</tr>
<tr>
<td>Sick Person</td>
<td>2,918</td>
<td>12,100</td>
</tr>
<tr>
<td>Allergic Reaction</td>
<td>73</td>
<td>777</td>
</tr>
<tr>
<td>Headache</td>
<td>258</td>
<td>1,500</td>
</tr>
<tr>
<td>Pediatric Fever</td>
<td>485</td>
<td>215</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,317</strong></td>
<td><strong>22,009</strong></td>
</tr>
</tbody>
</table>

Source: HEC CAD-RMS/2006 Medical Dispatch Protocol statistical analysis
PILOT 1ST YEAR TOTAL CALL VOLUME

322
397
400
345
334
323
329
365
392
338
419

322
298
106
345
334
323
329
365
392
338
419

0 50 100 150 200 250 300 350 400 450

Jul-08 Aug-08 Sep-08 Oct-08 Nov-08 Dec-08 Jan-09 Feb-09 Mar-09 Apr-09 May-09 Jun-09

Added 2 call types
Added 1 call type & Hurricane Ike

357 Average Calls Per Month
12 Average Calls Per Day
PILOT REPORTING
CALL DISPOSITION CATEGORIES

TOTAL CALLS SENT TO TRIAGE NURSE

1. TOTAL CALLS REQUIRING DISPATCH
   - TRANSPORTATION ISSUES
   - REFUSED NURSE ASSISTANCE
   - BUSY/TECHNICAL DIFFICULTIES
   - MCKESSON PROTOCOL STANDARDS

2. TOTAL CALLS NOT REQUIRING DISPATCH
   - HOME CARE
   - HAS OWN TRANSPORTATION
TOTAL CALL VOLUME BY CALL DISPOSITION

- Dispatch Required: 80%
- No Dispatch Required: 20%

925 calls

JUNE 30, 2008 - JUNE 30, 2009
DISPATCH REQUIRED

REASONS FOR DISPATCH

- Transportation Issues: 47%
- Needs ER: 33%
- Refused Nurse Assistance: 13%
- Busies/Unsuccessful Transfer: 7%
- Swine Flu-Like Symptoms: 0.25%
PROPOSED TRANSPORTATION OPTION

HFD TELE-HEALTH NURSING PILOT
REVISED PROCESS DIAGRAM

CALL COMES INTO 911

911 DISPATCHER TRANSFERS CALL TO CARENET TRIAGE NURSE

CARENET

TRIAGE NURSE DETERMINES CALL DISPOSITION

- Activate EMS 911
- See ED Immediately

AMBULANCE DISPATCHED

- See Provider within 4 hours

END PROCESS

TRIAGE NURSE SCHEDULES TRANSPORTATION TO THE NEAREST ER FOR THE PATIENT

TRIAGE NURSE makes patient appointment for patient at clinic via My Health Direct System

TRANSPORTATION IS SCHEDULED FOR THE PATIENT

- Provide Home/Self Care

PATIENT IS REFERRED TO GATEWAY FOR FOLLOW-UP, ETC...

TRANSPORTATION IS PICKED UP PATIENT AND PROVIDES 1-WAY TRANSPORTATION TO CLINIC

END PROCESS

- CAB PICKS UP PATIENT AND PROVIDES 1-WAY TRANSPORTATION TO CLINIC

END PROCESS
With Transportation Plan (1\textsuperscript{st} Month)

<table>
<thead>
<tr>
<th>Dispatch Result</th>
<th>Nov*</th>
<th>Dec**</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Dispatched</td>
<td>318</td>
<td>86%</td>
<td>217</td>
</tr>
<tr>
<td>Not Dispatched</td>
<td>52</td>
<td>14%</td>
<td>149</td>
</tr>
<tr>
<td>Total</td>
<td>370</td>
<td>100%</td>
<td>366</td>
</tr>
</tbody>
</table>

12 calls per day; 5 no ambulance dispatch required
Field Referrals

- April – 92 referrals = average 3.07/day
- May – 104 referrals = average 3.35/day
- June – 131 referrals = average 4.37/day
- July – 118 referrals = average 3.81/day
- August – 128 referrals = average 4.13/day
Success of Field Referrals

- First 5 Months (Apr/May/Jun/Jul/Aug)

  - Amb. 103 18%
  - Taxi 371 65%
  - POV 57 10%
  - Home Care 13 2%
  - Refused 27 5%

  573 100%
CareHouston: A New Approach

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Education Coordinator
Houston Fire Department
A period of **90 days** was selected as the time criteria to capture frequent callers that may only call once this month but over time are consistent in requesting 911 services.

A rate of **8 or more times in 90 days** was chosen as the inclusion range.

– This translates to about once every 11 days.
Overall, 18 patients were identified in the Sunnyside area from April 1, 2006-June 30, 2006 (2\textsuperscript{nd} quarter ’06). These patients accounted for 113,911 EMS responses during this period.

18 clients = 113 responses in 90 days
During September, the responses in the Sunnyside area were evaluated again.

The 18 addresses/patients accounted for only 33 responses during July-September, a decrease of 70.80%

Approximately 40% of the identified patients did not call 911 at all
During the fourth quarter, (Oct-Dec), no additional contact was made with the pilot clients.

Of the original 18 clients, 17 had no increase in calls, maintaining a 70% reduction.
CareHouston Call Reduction Project - Sunnyside Pilot Area

- Initial # of Runs: 120
- Q1 # of Runs: 20
- Q2 # of Runs: 30

Evaluation Periods
Expansion of CareHouston

The client list was forwarded to the DHHS team in early September.

The procedure remained the same.

55 clients were identified across Houston.

The first evaluation period was Oct-Dec 2007.
Expansion of Care Houston

- The 55 clients accounted for 574 responses, initially.
- The Q1 evaluation showed a reduction to 140 responses, (75.6% reduction).
- The Q2 evaluation showed a reduction to 65 responses, (an additional 13% reduction for a total of 88.6% from the initial response total).
Expansion of CareHouston

CareHouston Call Reduction Project
Jun-Aug 2007

Initial # of Runs | Q1 # of Runs | Q2 # of Runs
--- | --- | ---
574 | 140 | 65
Expansion of CareHouston

CareHouston Call Reduction Project
Sep-Nov 07

Initial # of Runs | Q1 # of Runs | Q2 # of Runs
--- | --- | ---
370 | 105 | 57

Number of Responses

Evaluation Periods
CareHouston Call Reduction Project
Dec 07-Feb 08

Expansion of CareHouston
Expansion of CareHouston

CareHouston Call Reduction Project
Mar-May 08

- Initial Number of Runs: 1117
- Q1# of runs: 313
- Q2# of Runs: 117
Overall, during the September 2007-September 2008 period the total number of clients seen was 215 clients.

The Houston Fire Department uses a statistical amount of $1500 for operational cost of any response.

The call reduction allowed HFD to redirect $4,038,000.00 in resources to other areas.
What we learned from CareHouston

- Typically the intent of the client was sincere
  - There was no evidence in the majority of cases of malicious overuse of the 911 system
Most clients felt they were using 911 appropriately

- Our education program about the 911 system years ago was VERY successful. When they didn’t know who to call, they called 911
“There are frequent callers EVERYWHERE!”

– FALSE – the number of true frequent callers is actually very low

- Houston has a population of approximately 2,200,000
  – 100 individuals considered frequent callers would constitutes 0.005% of the population
Myths Regarding the Frequent Caller

“All frequent callers are 911 abusers!”

– FALSE – most frequent callers fall into two categories
  
  - Chronically ill
  - Those with overriding social issues
    – Don’t know who to call, so they call 911
Myths Regarding the Frequent Caller

“All frequent callers are low income ‘poverty’ cases!”

– FALSE – frequent callers are not separated by income, home location or status

– The issues determining frequency of calling are those listed before
  - Chronically ill
  - Some overriding social issue
What we learned from CareHouston

- Affirmed the Fire Department/EMS Department’s status as the “safety net” for the healthcare system in general
  - If a client didn’t have a “medical home”, they obviously didn’t hesitate to call on us.
What we learned from CareHouston

Transportation issues were the largest contributor to the increased requests for service

- Expanding or establishing additional public transportation resources should trickle down to a reduction in non emergent calls for service from the 911 system
Face to face contact by the DHHS team was MUCH more effective than a phone call or letter

- Once the team actually met with the clients, the drop in calls for service was evident within days
What we learned from CareHouston

- A “Big Brother” effect was noted
  - Clients that met with DHHS team but reported no real issues decreased their use of the 911 system
  - Clients that declined services from the DHHS team decreased their use of the 911 system
  - The fact that they were identified and contacted appeared to contribute to a decrease in their 911 usage
Certain methods that have been used for long periods of time were not effective or had an unfortunate rebound effect

- Health Fairs held in the pilot study area resulted in a substantial INCREASE in calls for service following the event
- Letter campaigns alone were not effective
  - Letters came from the same agency sending them bills for services rendered
The morale effect on the EMS providers was a sense of being heard by the Administration and having an impact on their working conditions.

- Too often many providers feel that their concerns are not heard or addressed by their superiors. This program allows for direct input from the field with the ability to provide direct relief back to these providers.
You Can Do This Too!

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