From Observation ward to Emergency Medicine Ward

The paradigm shift in acute and emergency care

Yuen E Ho HF
Emergency Department
Queen Elizabeth Hospital
Observation Ward

- Operated in All emergency department in H.K.
- Temporary observation and treatment of patient.
- Accelerated clinical pathway & interdepartmental collaboration can reduce admission rate\(^1,2,3\)
- Impact of this new model of healthcare delivery on the length of stay (LOS) reduction for patients.

Emergency Medicine Ward (EMW)

- Relocation of observation beds to QEH emergency medicine ward.
- Separate observation area created in A&E
- Feb 2005, 30 beds, 1/F above AED
- Jan 2006, 40 beds
- Accelerated clinical pathways
- Collaboration with medical team and others
- Regular meeting + feedback + New protocol
Why not admit to in-patient ward

Effectiveness – specialist provided
- EP broad scope of training, observe patient with diverse problems
- 24-hr on-site availability, frequent re-evaluation

Patient satisfaction – time spent and the time for interaction with emergency medicine specialist

Efficiency – shorter LOS
- Motivation to expedite patient care
EMW

- Provide clinical care similar to in-patient ward for selected group of patients
- Coordinate care with collaboration from other specialties
- Plan for the subsequent care of the patients
Protocols

- **Airway / Breathing**
  - COPD/ Asthma; Pneumothorax (needle aspiration);

- **Circulation**
  - Fast AF (known); PSVT (known / new); CHF (Known)/ Atypical Chest pain/ Hypertension

- **Disability**
  - T.I.A.; Epilepsy (known / new); Minor head injury; LBP
Protocols

- **Endocrine**
  - Hypoglycemia; hyperglycemia

- **GI**
  - Suspected / mild UGIB (OGD)

- **Geriatric**
  - Decrease GC, Decrease Feeding, SOB, ? Fever, ? Coffee ground vomitus etc

- **Others**
  - Cellulitis/ Psychiatry condition
Method

- The average LOS were compared before and after the implementation of the pathway.
- Data were obtained from AEIS & CDARS.
Disease entities

- Atypical chest pain
- Low back pain
- Hypoglycaemia
- Transient Ischaemic Attack (T.I.A.)
- Psychiatry condition
Admission to IP Ward

• Admission to IP from EMW because of:
  – Unexpected longer treatment time of more than 48 hours
  – Little or no response despite after 48 hours of treatment
  – Clinical condition is more complex than anticipated
## Admission Rate & LOS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Av. No. /day</td>
<td>Median LOS (Hours)</td>
<td>Adm Rate (%)</td>
<td>Av. No. /day</td>
</tr>
<tr>
<td><strong>Atypical Chest Pain</strong></td>
<td>5</td>
<td>10.2</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td><strong>LBP</strong></td>
<td>2.5</td>
<td>20</td>
<td>15.5</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**CGAT visit to EW (5/2/06 – 20/9/06)**
- Average new case / day = 3 (exclude Sat/Sun/PH)
- Admission rate (Medical) = 28%
- Average LOS < 2days (4.4 days)
# Admission Rate & LOS

<table>
<thead>
<tr>
<th></th>
<th>EW (Jan – Jun 2006)</th>
<th>IP (Jan - Jun 2000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Av. No. /day</td>
<td>Median LOS (Hours)</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>2</td>
<td>27.7</td>
</tr>
<tr>
<td>T.I.A.*</td>
<td>0.5</td>
<td>7.2</td>
</tr>
<tr>
<td>Psychiatric^</td>
<td>1.5</td>
<td>16.5</td>
</tr>
</tbody>
</table>

* Very restricted case selection to E Ward with CT brain and Joint Medical Consult

^ Borderline cases requiring psychiatrist consult
Results

- Shorter LOS for each disease entity as compared to in-patient stay.
- Overall re-attendance rate within 48 hours showed no difference between the 2 periods.
- [Limitation: subgroup analysis on re-attendance rate required for a more convincing benefit]
Conclusion

The use of accelerated clinical pathway by EPs reduced the LOS as compared with conventional in-patient management.
1. Crude admission rate = Admission no/ Attendance no
2. Expected no of admission= Based on predicted probability of admission produced from a fully saturated logistic regression model
3. Expected Admission rate = Expected admission no/ Attendance no
Standardised A&E Admission rate in 2006 Q4

Overall HA = 26.6%

Standardised on HA wide age, sex, ambulance case, triage category and payment type profile
Suspected TIA pathway in ‘E’ ward

(1) Assessment Box

<table>
<thead>
<tr>
<th>Chart A</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurological S/S LESS than 1 hour AND resolved in 24 hours</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Absence of all S/S in AED</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>All YES, to chart B</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Any NO, Not candidate for TIA pathway</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

S/S includes: Motor, Sensory, Vestibulobasilar, visual and LOC, Speech impairment

<table>
<thead>
<tr>
<th>Chart B</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently on aspirin/ warfarin</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>ECG: AF, Atrial flutter, Recent MI, Ventricular Anurysm</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Crescendo Attack (&gt; 3 events in 72 hours with increase duration and severity of symptoms)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Previous CVA: TIA</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Cardiac Murrum</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Carotid Bore or significant carotid narrowing by Doppler USG</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Poor Social Support</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Hypercoagulable State</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Any YES, Admit MEDICAL</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>ALL NO, Admit ‘E’ ward</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

(2) Baseline tests

ECG, CBF, KLFT, Clotting, CXR

(3) E Ward Order

- Neuro-observation QIH
- Joint Medical Consultation (JMC)*
- CT brain (plain cut)* as urgent case, preferably not earlier than 6 hours after onset of symptom
- Aspirin after JMC/CT brain if no contraindication
- whichever comes first

More cautious, such as earlier FU, if 2 or more of the following factors present:
1) Age > 60, 2) DM, 3) TIA > 10 mm, 4) Weakness during the episode; 5) Speech impairment during the episode

CHF Protocol in QEH Observation Ward

Assessment Box:

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic BP &lt; 90mmHg</td>
<td>Yes</td>
</tr>
<tr>
<td>SpO2 &lt; 90% (on RA)</td>
<td>Yes</td>
</tr>
<tr>
<td>New onset CHF</td>
<td>Yes</td>
</tr>
<tr>
<td>Sinuscope</td>
<td>Yes</td>
</tr>
<tr>
<td>Chest pain</td>
<td>Yes</td>
</tr>
<tr>
<td>Fust AF/VT</td>
<td>Yes</td>
</tr>
<tr>
<td>Hx of Valvular replacement</td>
<td>Yes</td>
</tr>
<tr>
<td>Concomitant Acute medical illness</td>
<td>Yes</td>
</tr>
<tr>
<td>Inadequate social support</td>
<td>Yes</td>
</tr>
<tr>
<td>All YES, Admit Medical</td>
<td>Yes</td>
</tr>
<tr>
<td>All NO, Admit ‘O’ ward</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Initial Clinical Findings

<table>
<thead>
<tr>
<th>ECG</th>
<th>CXR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloods + CBC, K/3, WBC,</td>
<td>pc/hr,</td>
</tr>
<tr>
<td>T/ST, P/Hr, M/Hr/DM/HCT/</td>
<td>oad</td>
</tr>
<tr>
<td>Hypercoagulable State</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Treatment

- Modification
  - Start / Increase / Unchange / Not start
  - AED
  - Start / Increase / Unchange / Not start
  - Spironolactone
  - Start / Increase / Unchange / Not start
  - Hydralazine + isrdal
  - Start / Increase / Unchange / Not start
  - Others: Dobutamine, Thrombolytic

Disposal

<table>
<thead>
<tr>
<th>Clinical Improvement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiological Improvement (2nd CXR)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Admit Medical</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Discharge &amp; FU 37th day ward</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

May 2005

Sept 2004
Management of Adult Epileptic seizure in A&E, QEH

Initial A&E management (Refer list A)

- Conditions need immediate hospitalization (Refer list B)
- First seizure
- Known epileptic patient

Good drug compliance
- Clinically well & no recurrent of seizure up to 6 hours

Poor drug compliance
- History of frequent epileptic attack
- Discharge & SOPD FU as schedule or Early FU after JMC
  - *6 hours from seizure
  - #For JMC if history of seizure recur at frequent interval
  - JMC=Joint Medical Consultation

1. Admit if condition present in list (B)
2. Discharge and FU as schedule with adequate drugs if no seizure >6 hours (± AED FU / GOPD for drug refill)

Hospitalization
- To ward (Refer List C)
- Arrange CT brain
- Structural brain lesion in CT scan

Discharge & early follow up as arranged in JMC
Joint Consultation (QEH Medical and A&E) - BH day ward booking form

Fill in by Medical MOS
Fax: 23396240, Tel: 23396255

Name:__________________________
Date:__________________________

Gum label

FU duration:__________________________

Diagnosis: Chest pain / Congestive heart failure / AF / PSVT / Epilepsy
Hyperglycemia / Hypoglycemia / Others:

___________________________________________

Service(s) required:
Treatment/ drug dosage adjustment:

Investigation:

Trace results (taken in QEH):

Others:

Current medications:

___________________________________________

Plan(s): FU GOPD / BH OPD / QEH SOPD / GP / others

QEH A&E Observation ward
Tel: 2980522
Fax: 29807248

Medical MOS name & pager:__________________________

EMERGENCY WARD NURSING MANAGEMENT SHEET

Bed no:__________________________
Time in:__________________________
Time out:__________________________
Received by:__________________________

Patient’s Gum Label

Initial Nursing Assessment

Name’s signature:__________________________

☐ Amb. ☐ Wh. ☐ Str. ☐ Cane in alone ☐ with ___________ ☐ with FC ___________

☐ A ☐ V ☐ O ☐ U BP: __________mmHg P: ___________RR: ___________SaO2: __________%(C/O: __________%)

☐ Yes ☐ No ☐ Refused to inform relative ☐ No ☐ Live in OAH

Patient has been checked & kept ☐ by his / her:__________________________

Prone drugs have been ☐ checked & kept by nurse ☐ returned to relative/OAH staff

☐ Mental Status:

☐ Demented ☐ Suicidal idea/attempt

☐ Violent/Aggressive ☐ Other

☐ Special diet: ____________________________

☐ Change in diet: ____________________________

☐ Urinary catheter insertion

Pre-Discharge Checklist

Circle & fill in the applicable item on admission to and after procedure done in E.W.

Part iv in ☐ for action taken upon discharge.

Destination:

☐ Home ☐ OAH ☐ QEH ☐ KH ☐ BH ☐ Others:__________________________

☐ Relative:__________________________

Special arrangement:

☐ CNS / O MSW / CGAT / Others:__________________________

Special transport: ____________________________

☐ NEATS ☐ NEATS for follow-up ☐ Others:__________________________

Preparation of discharge:

☐ Removal of horseshoe

☐ Removal of heparin block

☐ Inspection of wound, further management of wound

☐ Removal of short-term urethra catheter

☐ Return of property:

☐ Return of private drugs, films, follow-up card, etc.,

☐ Collection of drugs from Pharmacy for patients

Geriatric Care - Follow Checklist of Geriatric Care

Issued documents:

☐ Follow-up appointment slip

☐ OPD dressing sheet

☐ Referral to ___________

☐ Prescription Sheet

☐ Sick leave certificate

☐ Pre-discharge advice / education: ____________________________

Presence of accompanying: ☐ Yes ☐ No

Signature ____________________________ (Rank / Name:__________________________)

(_Date:__________________________)