

# Innovations in ED Overcrowding

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# Overview

## ➤ **Overcrowding or Access Block?**

### ➤ **Causes?**

- **Capacity shortfalls (system/human)**
- **Demand variability**
- **Culture (standards and procedures)**
- **Accountability Failure**
- **Flow**
- **Efficiency**

### ➤ **Innovations!**

# Access Block !

- 52 y.o.m. with AP arrests after 2 hrs in the WR. Autopsy shows aortic dissection + tamponade
- 42 y.o.m. with CP triaged to the WR. After delayed AMI Dx, he survives with <30% EF.
- An “intoxicated” assault victim deteriorates in the WR and dies hours later with ICH
- 68 y.o. woman diverted to SPH with abd pain. She arrests in the WR and fails resuscitation
- A young asthmatic collapses at triage, moved outside and resuscitated in a waiting ambulance

# Capacity shortfalls

## Preserve ED Capacity

- Match care needed to care delivered
- WR Care / CTAS 3 RAZ
- Expanded Staffing Models
- Use skilled workers wisely: value added

## Preserve Hospital Capacity

- ED CDU/DTU Pathways
  - CPP, Geri, TIA, CAP, CHF, etc
- Accountability (e.g. staffing contingencies)

# Waiting Room Care

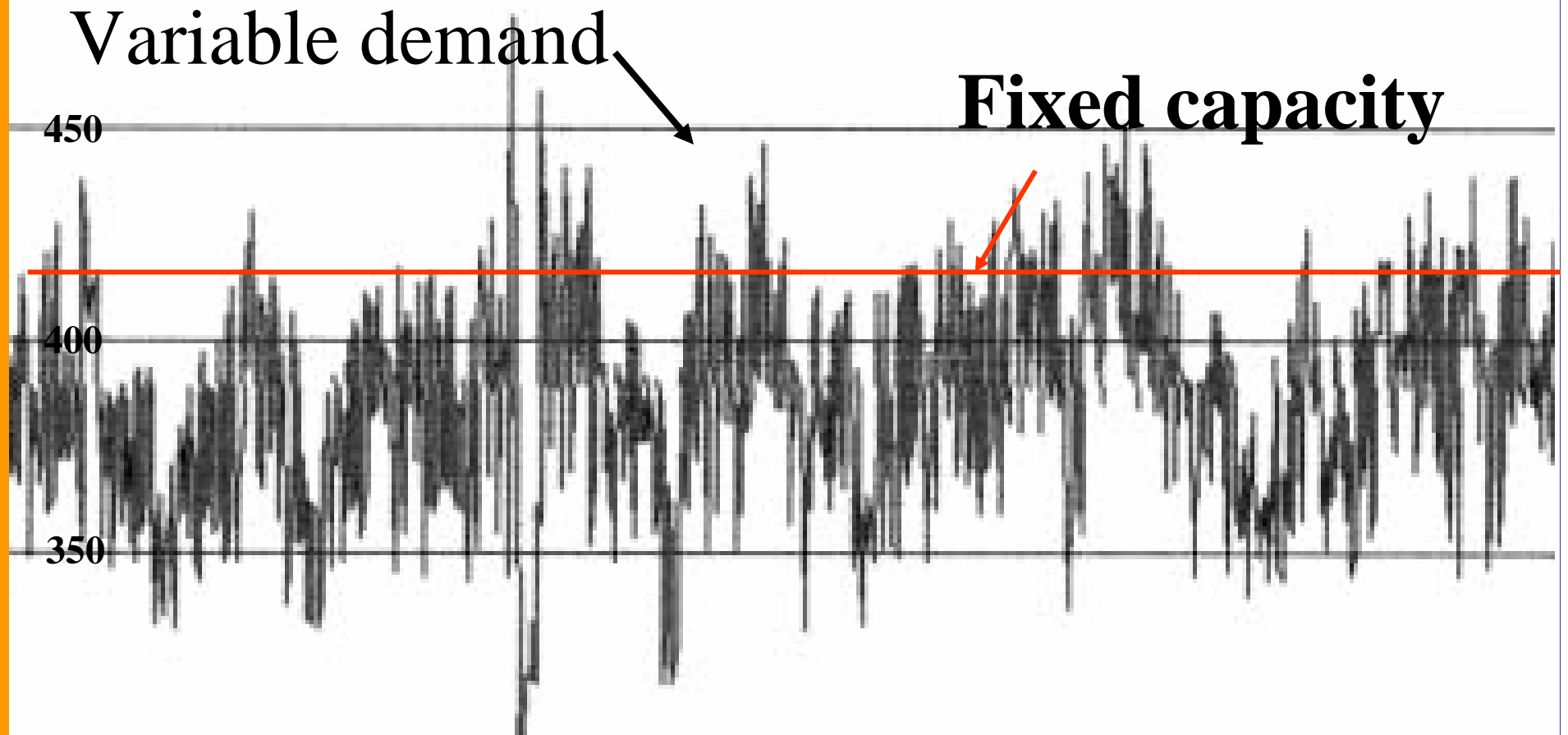


Zone

# Arrival to physician: SPH

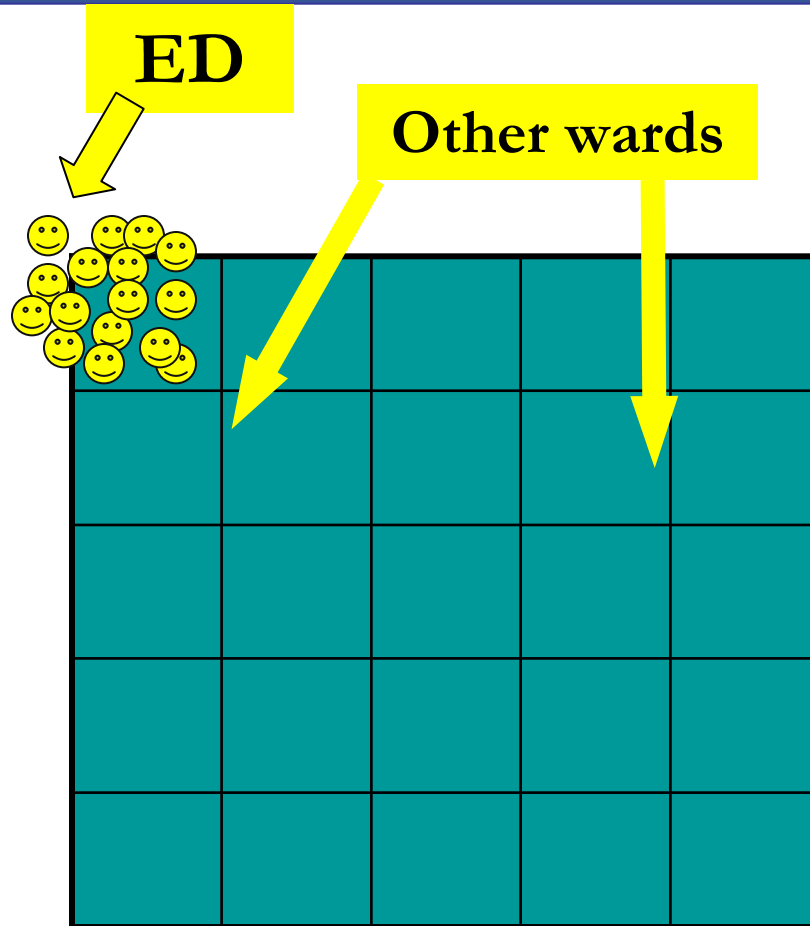
<b>CTAS Acuity Level</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>ALL</b>
<b>Wait Time (min)</b>	<b>2</b>	<b>17</b>	<b>29</b>	<b>40</b>	<b>42</b>	<b>35</b>

# Demand Variability !!



**A plan for overcapacity periods!**

# Traditional Hospital Overcapacity Plan





Reduce variability?

Plan for overcapacity pts?

- Smoothing: Move elective work out of peak demand periods
- Contingency and surge plans
  - ED
  - Inpatient programs
- Whole-hospital response to overcapacity patient care needs:

# Standards/procedures (culture)

- Triage (and re-triage)
  - A wall, not a door
- Rigid staffing assignments
- Nursing and physician care standards
- Redundant care processes
- Disparate nursing and safety standards

**“Patient focused”: means the system bends to pts’ needs—not the reverse**

# Accountability vs. Downloading

**Downloading care**: the default solution to demand/capacity mismatch (for everyone)

**ED overcrowding**: Problem or solution?

**Accountability definition**: Programs are accountable to meet the care needs of pts admitted to them, and to achieve wait times, LOS and flow targets

# Accountability Failure / “Downloading”

SPH: 62,600 ED visits; 8500 admissions

<b>Admitted Pt I</b>	<b>ED Patient LOS: 2.5 hrs</b>
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**(8500 x 19.5)**

**= 165,000 hours**

**(54000 x 2.5)**

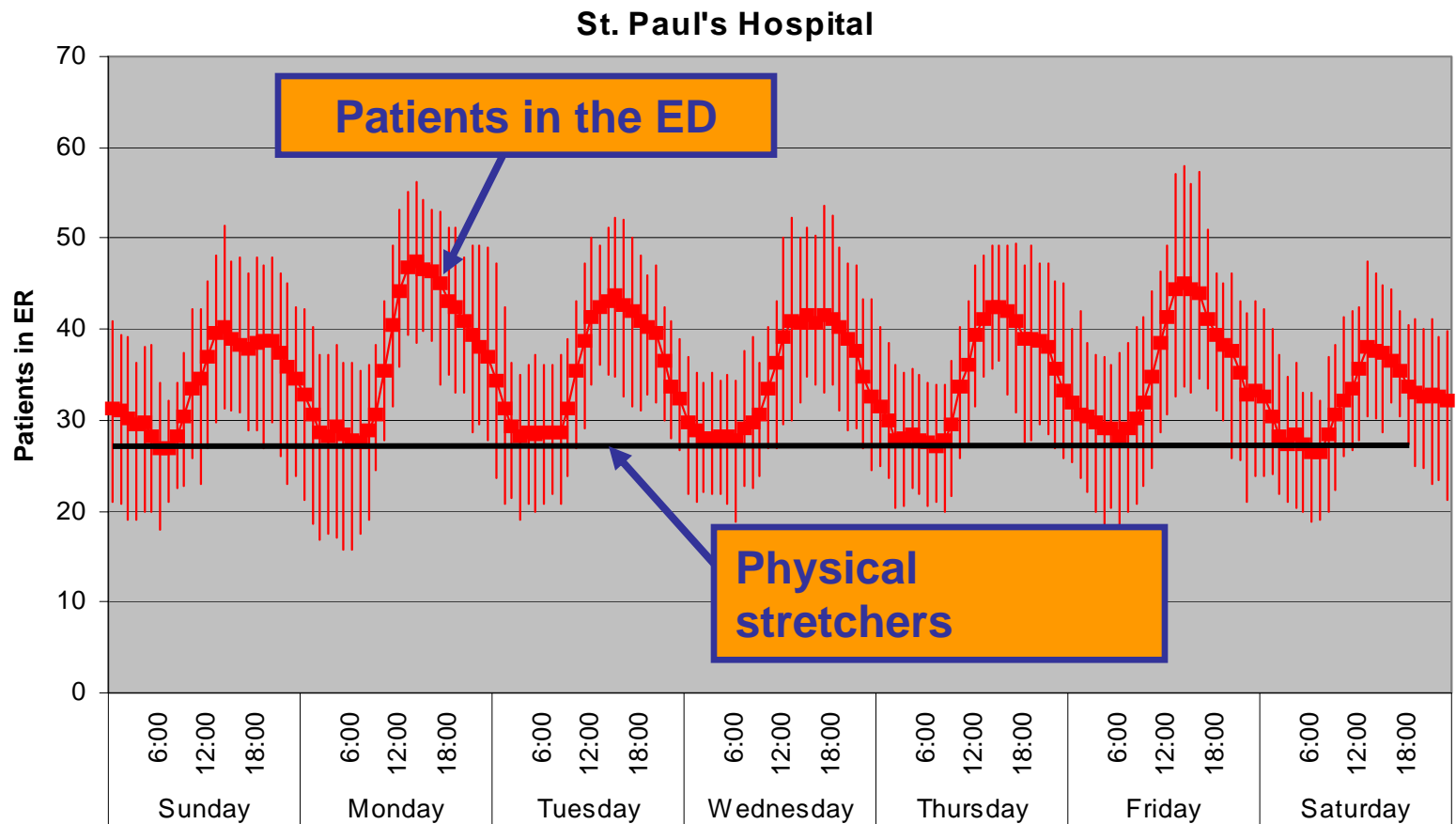
**= 135,000 hours**

# Accountability Failure / Downloading

## Accountability means:

- Keep program beds operational
- Provide staff, space and budget for pts
- Develop a contingency plan!

# #1 Problem: Compromised flow



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Match outflow to inflow: Fix D/C processes

**Reframe the problem:    *A small problem with small (LOS) solutions***

**2005-06**

ED time: 2.5 hrs x 63k= 158,000 hr	Wait for consult: 5 hrs (x 11000) = 55,000 hr	Wait for bed: 11 hrs (x 9000) = 99,000 hr
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**2007-08**

ED time: 2 hrs x 63k= 126,000 hr	Wait for consult: 2 hrs (x 11000) = 22,000 hr	Wait for bed: 2 hrs (x 9000) = 18,000 hr
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**Care Gain**

32,000 hrs	/	33,000 hrs	/	81,000 hrs
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# Big problem for the ED? Small problem for the hospital?

**400 hospital beds  
24 hours per day  
365 days per year  
= 3,500,000 care hours**

## **Challenge:**

- Use efficiency strategies to free up 35,000 hospital bed hours (1% of bed capacity).
- Reduce every hospital LOS by 2 hours

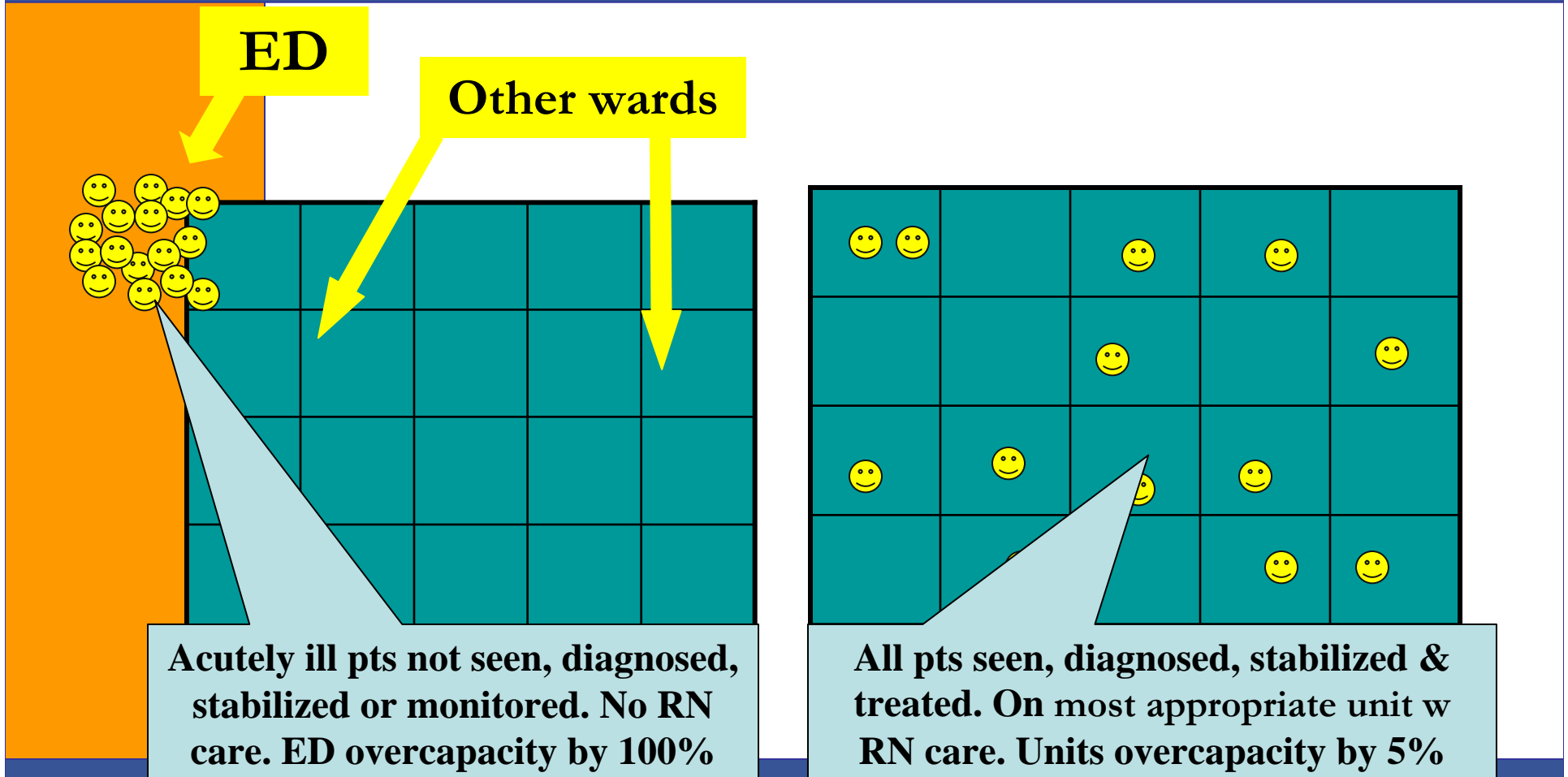


# Solutions: Overcapacity Protocol

- CTAS 1-3 pts are moved rapidly into an ED care space. If necessary they will move to an ED overcapacity space\*.
- When the ED is overcapacity by 2 patients, supernumerary admitted pts are distributed, one at a time, to overcapacity care spaces on the most appropriate ward:
  - No rule-out ACS
  - No one requiring > 4L oxygen

“Full Capacity Protocol,” Vancouver Coastal Health Authority

# Overcapacity protocol

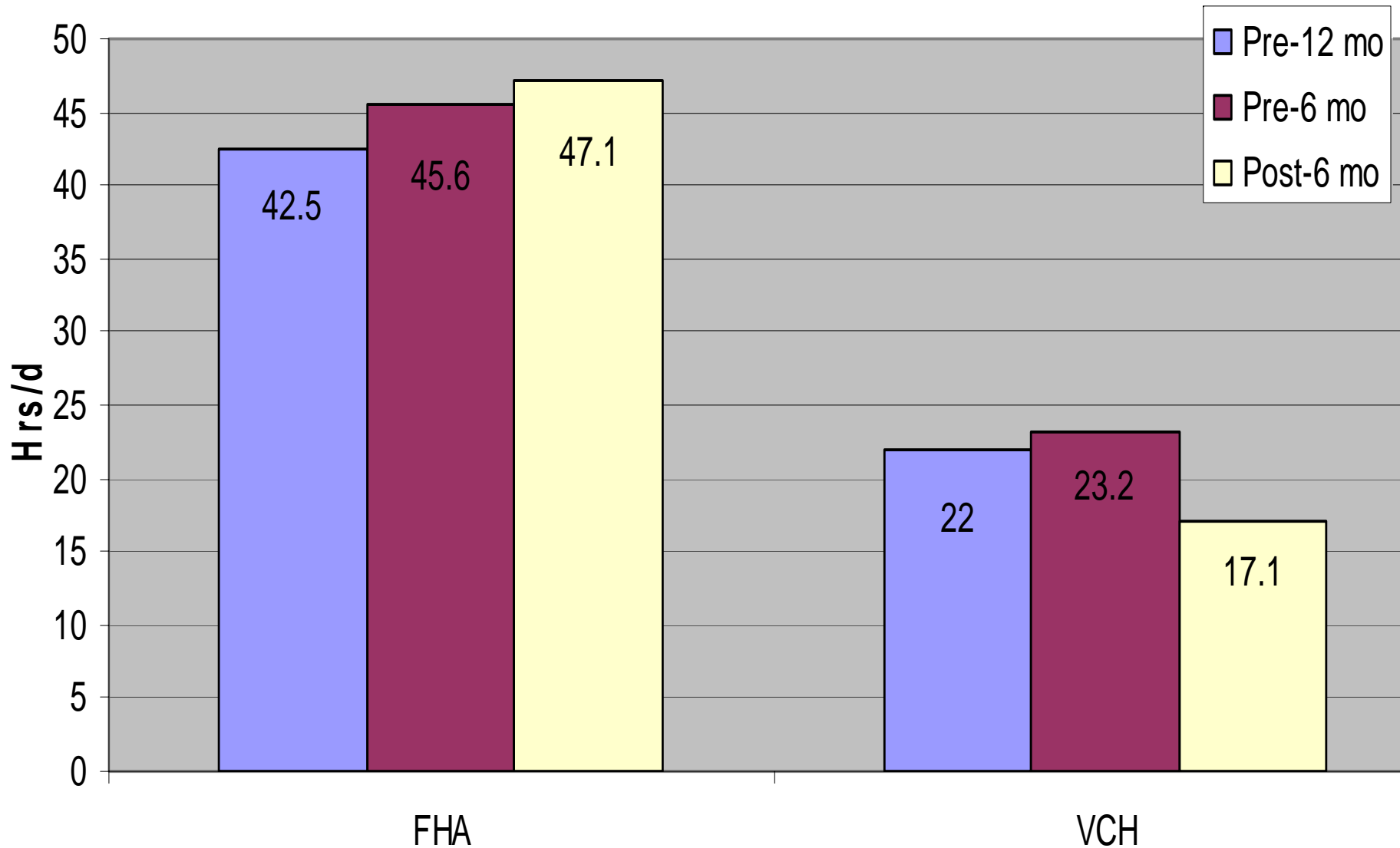


# OCP: More than just sharing the pain

- An overcapacity plan
- An accountability mechanism
- A flow mechanism
- An evolutionary stressor (necessity is the mother of invention)
- A harm reduction model: Reduces the need for hallway care and reduces overall patient risk
- Right pt, right place = efficiency & outcomes
- Balances safety standards; all pts get RN care

# Ambulance Offload Delays

## Daily Offload Delays: Before and After OCP



# Overcapacity Protocol Implementation

<b>OUTCOMES: SPH</b>	<b>Before</b>	<b>After</b>
<b>ED LOS for ADM pts (hrs): SURG</b>	9.2	7.6
<b>ED LOS for ADM pts (hrs): PSYCH</b>	56.3	47.1
<b>ADM-to-bed xfer delay (hrs): SURG</b>	3.6	2.1
<b>ADM-to-bed xfer delay (hrs): PSYCH</b>	54.3	41.8
<b>Hosp LOS for typical pts (days): SRG</b>	4.5	3.7
<b>Hosp LOS for typical pts (days): PSYCH</b>	12.8	12.0
<b>ED LOS for Discharged pts (hrs)</b>	3.0	3.2

# OCP Other Impact: SPH

- 5.0 hr LOS reduction = 44,000 hrs ED time
- No critical patients /events in ED WR
- One critical inpatient event attributed to OCP
- Patient satisfaction?? Provider satisfaction??
- OCP distributes ‘overcapacity’ pts to all units:
  - fewer pts left untreated in hallways, but
  - 40-70 VCH pts in OCP spaces (mostly beds)
  - more provider stress in areas that do not normally address overcapacity care needs

# Summary

- Accountability policy and mechanisms
- Keep funded capacity functional. Expanded staffing
- Reduce demand variability
- Mandate OCP, surge & contingency plans
- Common nursing and safety standards
- Become patient- rather than system-focused.  
Reconsider standards and policies. No sacred cows!
- Fix flow; focus on discharge planning
- Small efficiency gains provide large access benefit

**EXTRA SLIDES**



## **ED Flow Strategies**

## **Inpt Flow Strategies**

- **Keep stretchers staffed**
- **Reduce inflow delays**
- **Reduce process delays**
- **2 “extra” stretchers**
- **Waiting pts to wait area**
- **Reduce CT & US delays**
- **Discharge processes!!!**
- **Surge Capacity Plan**

- **Keep beds staffed**
- **Reduce inflow delays**
- **Reduce process delays**
- **2 “extra” beds**
- **Waiting pts to wait area**
- **Reduce CT & US delays**
- **Discharge processes!!!**
- **Surge Capacity Plan**

# Flexible staffing assignments

- **Rigid assignments (for nurses and doctors) are like specialty bed pools**
- **Single queue = maximum efficiency**
- **Multiple queues = delayed access/higher cost**
- **Match staffing to demand: Flex EP/RN**

# Computerized Physician Order Entry

- Drug therapy; transcription error; safety
- Electronically link MD to patient
- Enhances physician functionality
- Increase efficiency: Reduce ED LOS by 30 min
- Implement protocols; standardize care
- Process measurement: Time stamp key events
  - **TT MD, TT test, TT Rx, TT consult**
- Utilization, performance, research data
- Physician feedback: Report cards

# Improving Inpatient Flow

- Medical admission units that address inflow surges
- Inpatient bed tracking system for real-time census data and 24-hr occupancy prediction
- Access coordinators to facilitate patient flow
- 2 extra clean beds to reduce bed TAT (i.e. discharge and cleaning delays)
- Don't hold beds >12 hrs for future arrival.
- Use empty beds when pts 'out on pass'
- Unit-specific surge plan with action points / responses

# Aggressive discharge planning

- 7-day discharges
- Schedule next day discharge slots; confirm at morning discharge rounds
- Write prescriptions, arrange rides, home care and follow-up appointments the day before DC
- Provider order entry (POE) for DC order
- DC Lounge: No pts “just waiting” in acute beds for tests, rides or transfers
- *bid* discharge rounds if overcapacity situation

# Surge Plan: Triage contingencies

<b><u>Green:</u> &lt;4 pts @ triage</b>	<b>Triage RN protocols</b>
<b><u>Yellow:</u> 4+ pts @ triage</b>	<b>90-second triage</b>
	<b>Defer Triage RN protocols</b>
	<b>ER Tech /LPN to triage</b>
<b><u>Red</u> 8+ pts @ triage</b>	<b>Volunteers distribute intake forms</b>
	<b>Float nurse or CNL to triage</b>
	<b>WR SWAT</b>
	<b>?EMS triage</b>

## Surge Plan: Stretcher access contingencies

<b><u>Green:</u> 0 urgent patient in WR</b>	<b>2 'extra' stretchers in play</b>
	<b>Move pts to ED OC Space</b>
	<b>Move likely discharges to DC area</b>
	<b>WR care plan</b>
<b><u>Yellow:</u> 1-2 urgent pt in WR</b>	<b>Activate Overcapacity Protocol</b>
	<b>ED Situation Briefing huddle</b>
	<b>Pts waiting for tests move to WR</b>
<b><u>Red:</u> 3+ urgent patients in WR</b>	<b>2 ADM pts go to Fast-track</b>
	<b>WR SWAT (use Flex MD)</b>
	<b>OL Notified</b>

## Surge Plan: MD wait time contingencies

**Green: 0 pts  
exceed CTAS  
response  
times**

**Electronic timers and warning for  
ED physicians**

**Overhead paging for CTAS 2 pts**

**Yellow: 2+ pts  
exceed CTAS  
response  
times**

**Med students to shadow mode**

**Overhead EP notification of status**

**Red: 6+ pts  
exceed CTAS  
response  
times**

**Call next EP in 1 hr early**

**Shift flex MD to acute pts**

**Call in TTL**

**Defer or delegate procedures**



# Surge Plan: Imaging delay contingencies

**Green: 0 pts w  
CT/US TAT  
>60/90 min**

**Service agreements:**

**Urgent CT < 60 min; US < 90 min**

**ED slots based on historical demand**

**CPOE**

**Yellow: 2+ pts  
w CT/US TAT  
>60/90 min**

**UC calls DI**

**DC stable pts or send to DI wait area**

**Red: 4+ pts w  
CT/US TAT  
>60/90 min**

**EP queries DI head**

## Surge Plan: Lab delay contingencies

**Green: 0 pts w  
Lab TAT >60  
min**

**Service agreements:**

**Lab TAT < 60 min**

**Match Lab staffing to ED need**

**Yellow: 2+ pts  
w Lab TAT >60  
min**

**UC calls lab**

**D/C stable pts: callback for  
results**

**Red: 4+ pts w  
Lab TAT >60 m**

**EP notifies lab head**

**Selective POC tests (repeat Tn)**