



## TRAUMA FAST TRACK

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## Trauma Audit

**Trauma Quality  
Improvement  
Program  
(TQI)**



## Major Complication



**“Delay to Operation”**

### Problems! Causes of delayed surgery

1. Communication systems
2. Management problems (community hospital)
3. Judgement/ Decision making at ER
  - Delayed management
  - Over fluid resuscitation
  - Delayed consultation
  - No leadership

*Data from TQI/Trauma Audit KKH*

### The Objectives of TFT

1. Trauma patients with **clear indication for surgery** are undergone operated as soon as possible.
2. Doctor in community hospitals can **provide basic trauma care** before transfer patients.
3. To develop the **referral system** in province.

## Indication of Trauma Fast Track

**P**

- Penetrating injury (abdomen , thorax)

**V**

- Active Vascular injury

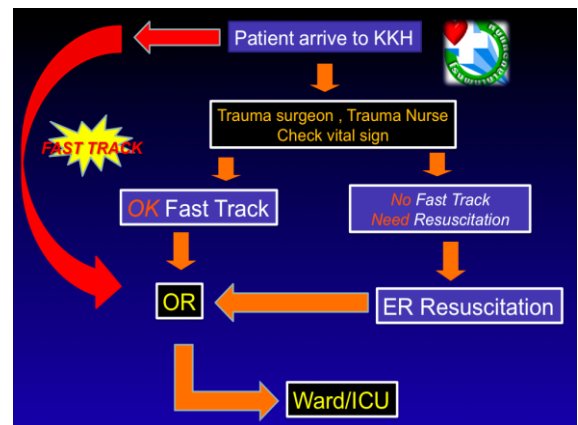
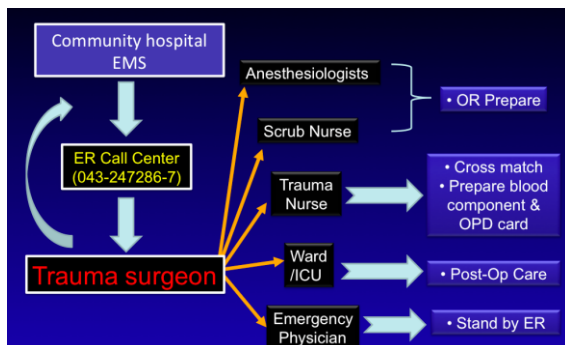
**S**

- Shock (hemodynamic instability)

Note : Shock = SBP<100 or HR>100



## FLOW OF TRAUMA FAST TRACK



## ตัวอย่าง Cases Trauma Fast Track

### Case Trauma Fast Track

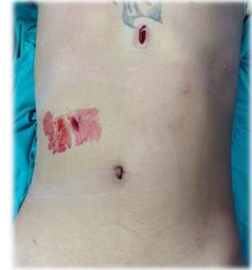
- Admit 5-5-2556
- Male , 50 y/o
- Gun shot wound at abdomen with shock
- Com.hospital load iv fluid 2000 ml
- Refer to KKH
- Activate TFT
- **Intraoperative Finding :**
- Multiple small bowel injury with bleeding , Left diaphragm injury
- **Operative Procedure :**
- Explor lap to Segmental SB resection with EEA with Repair Diaphragm

## Post Operative Day 5



## TFT Case 8-8-2014

- Male 18 y/o
- Stab wound at abdomen with hypovolemic shock
- Refer from community hospital
- Activated TFT



# Trauma Fast Track



## TFT Case 8-8-2014

- **Intraoperative Finding**
- Gallbladder injury
- LHA injury
- Pancreatic head injury
- IVC injury
- **Operation** : Cholecystectomy , ligation LHA , repair IVC , stop bleeding at pancreatic head with swab packing

## TFT Dead on the way to KKH



- Male 49 y/o
- Multiple stab wounds at abdomen
- Hypovolemic shock
- Cardiac arrest at scene and community hospital

[illegible]

## Trauma Fast Track Case

- Admission date : Feb 11,2016
- Refer from Wang-yai Hospital
- Thai male , 52 y/o , no underlying disease
- He was stabbed at left chest 20 min. PTA
- Initial vital sign : BP 70/40, HR 98, RR 22, O2sat=70%

## Trauma Fast Track Case

Physical exam :

- Stab wound at left chest , 4-5<sup>th</sup> ICS, below to nipple line, decrease breath sound left
- FAST= hemopericardium ?
- Hct= 35%
- Dtx= 303%



## Management at Wang-Yai Hospital

- Insert ICD at left chest = pneumothorax
- Acetar iv loading for 2 L
- On ET tube No 7.5 depth 21
- O2sat= 90-95%
- Dopamine and Norepinephrine iv drip
- Retain foley cath
- Activate Trauma Fast Track to KKH (time..)

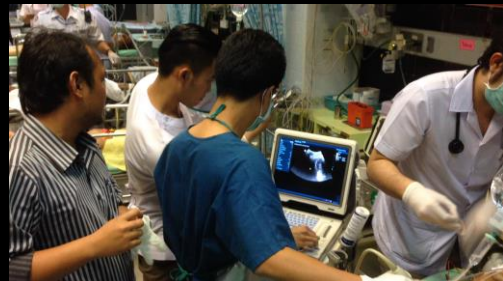
## At ER KKH

- Patient arrival at 09.40 pm (21.40)
- KESI 1 Triage
- Vital sign: BP=89/58, HR=92, Obey with command (E4VtM6)
- Initial management at ER
- FAST, more venous access, cross match

## ER KKH at 21.40



## ER KKH at 21.40



## Timeline

Event	Time
Notify time to ER Call center	20.15
Patient arrival time	21.40
Patient leave form ER	
Patient enter to OR	21.48
Anesth time to start	21.49
Surgery time to start	21.52
Surgery close	23.45
The 1 <sup>st</sup> unit of PRC was transfused	22.17
Leave from OR	23.55
Trauma ICU arrival time	

## Intraoperative Finding

- Intraabdominal aortic injury (supraceliac)
- Stomach injury (through and through)
- Left diaphragmatic injury

### Operation :

- Left anterolateral thoracotomy with aortic cross clamp, Median sternotomy
- Explore Lap to repair aorta, stomach and diaphragm, splenectomy, supraceliac cross clamp
- Temporary abdominal wall closure (TACs)

## Intraoperative Resuscitation

- PRC 4 U, FFP 4 U
- 10% calcium gluconate
- Adrenaline
- Colloid 1,500 ml
- 7.5% NaHCO<sub>3</sub> x 2



## 2<sup>nd</sup> Operation

- Feb 14, 2016
- Second look operation
- Remove swab
- TACs

## 3<sup>rd</sup> Operation

- Feb 19, 2016
- Re-move TACs
- Abdominal mesh graft



## 4<sup>th</sup> Operation

- Feb 22, 2016
- Re-bleeding from anastomosis leakage
- Hypovolemic shock
- Re-Explore Lap to Repair aorta (anastomosis site)

## Complication

- ARDS
- Acute Kidney Injury
- Acquired coagulopathy
- Ischemic hepatitis
- MOFs

## Discussion Issues

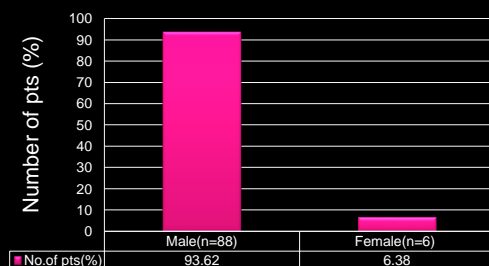
1. Initial management at community hospital and ER KKH
2. Trauma Fast Track system, Notification
3. Blood components and Transfusion
  1. Explore process = what process is delay ?
  2. Stand by Gr O before pt arrival
  3. Notification TFT in request form
4. OR preparation / notify special instruments
5. Operative Procedure / infected pladged
6. Post Operative Care



## The Result of Trauma Fast Track

June 2011-Sep 2016 (76 mo.)

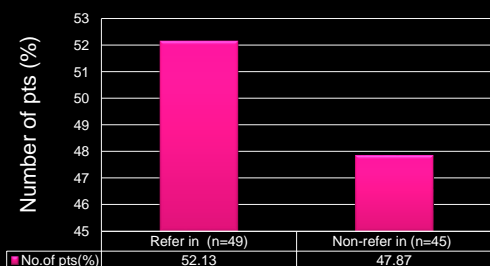
## Gender Distribution



Total = 94 pts

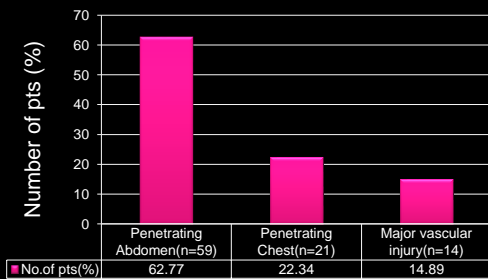
AVR Age= 28.49 years

## Refer & Non-refer in





## Distribution by Mechanism



## Mortality Rate

Total cases = 94

Dead = 18

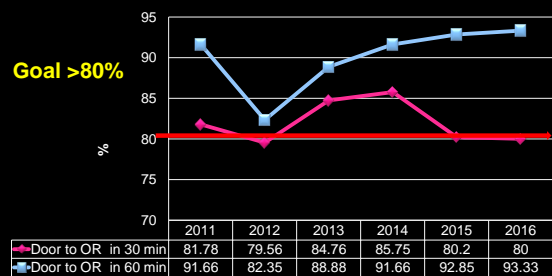
Mortality rate = 19.15%

- Refer in cases 10/18 = 55.56%
- Penetrating
  - Abdomen/flank=11 (61.11%)
  - Chest=4 (22.22%)
- Active vascular injury = 3 (16.67%)

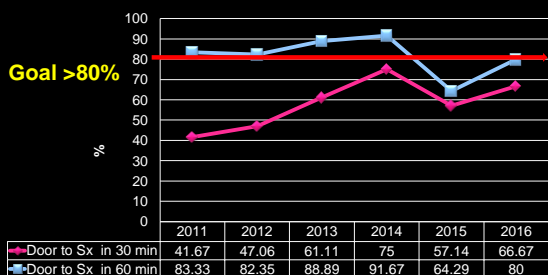
## Key Performance Indicator (KPI)

### Trauma Fast Track

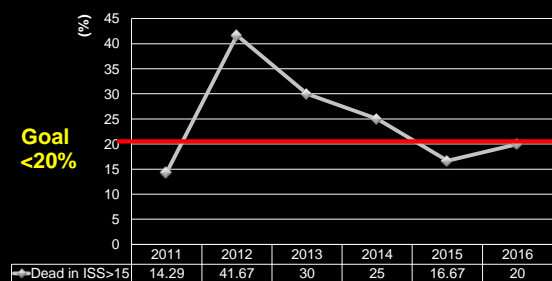
## Door to OR in 30 & 60 min

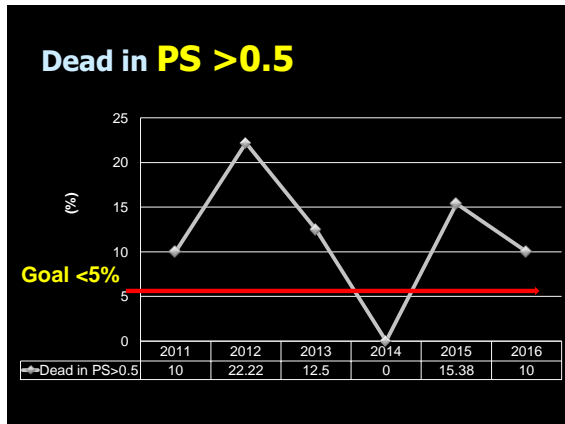


## Door to Surgery in 30 & 60 min



## Dead in ISS >15





## Trauma Team KKH

