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Role of trauma nurse coordinator in trauma quality improvement program

&

How to raise the capacity of trauma nurse to trauma nurse coordinator

Ms. Oratai Pochaisan, Register nurse, Professional level

Trauma Nurse Coordinator, Khon Kaen Hospital

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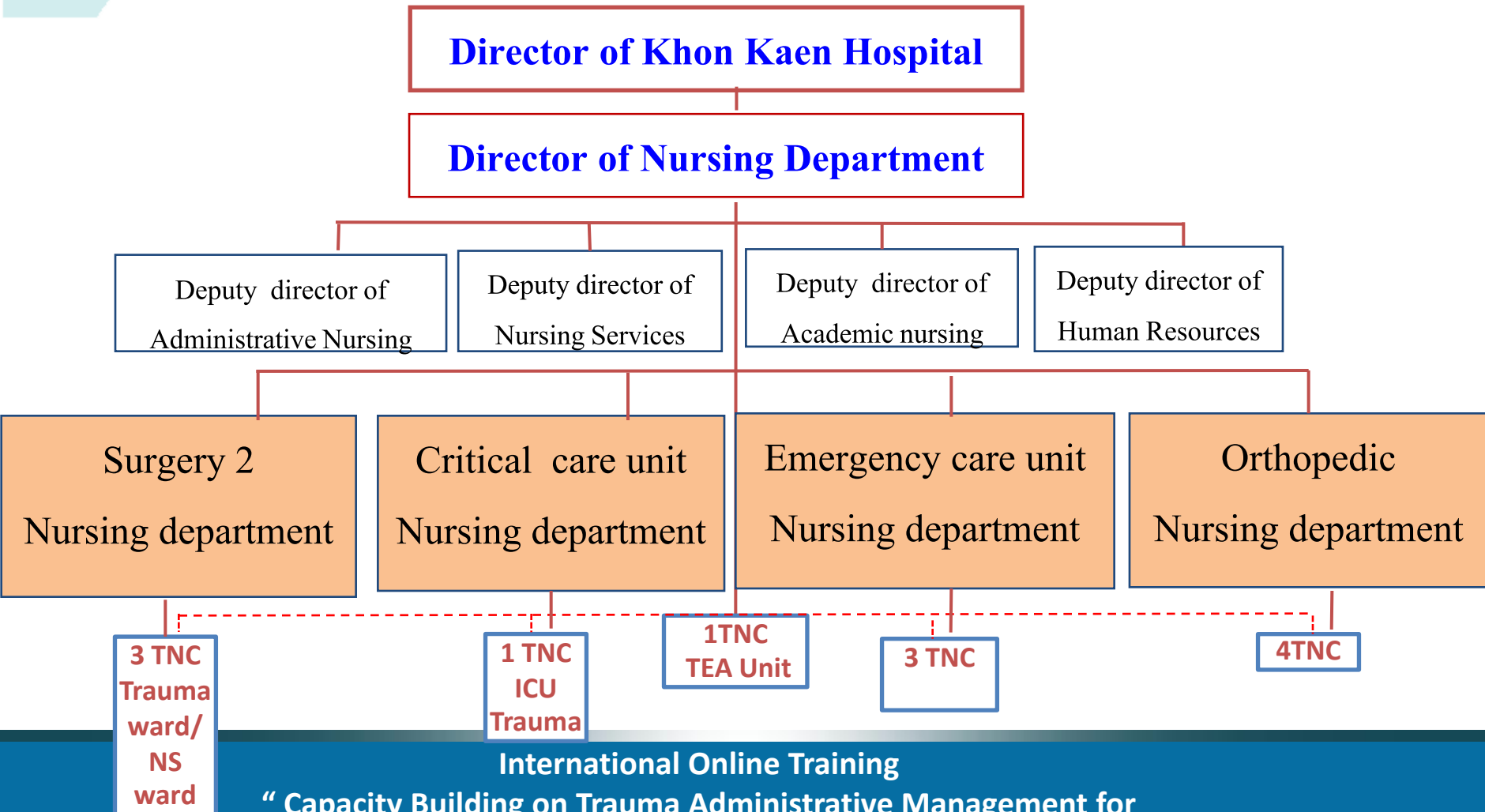
Program of Nursing Specialty in Nursing Care Management System for Trauma and emergency , Faculty of Nursing Khon Kaen University, 2015



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Organization Structure of Nursing Department

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**Clinical /Practice
Nursing Care**

**Collection and
management data**

**Analysis and
synthesis**

**Research Knowledge
Management**

**TNC 's
roles**

**Auditor/ Supervise
Quality control**

**Development/ Apply
Nursing innovation**

Coalition



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1669
CCC



Multidisciplinary team

Continuing care & Quality



Saving life

Saving life
Preventing complication
Psycho-emotional support

Rehabilitation &
preventing complication
Teaching & training
Consulting & facilitating
Collaboration

Continuing of care
Home visit
Telephone contact
Resources utilization

TNC

• Monitor clinical processes and outcomes
• Monitor system issues related to trauma care : **GAP analysis : Resolve**

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Trauma Patient Care Team : PCT, Khon Kaen Hospital

Purpose :

Service recipients
receive medical
treatment that has

- ◇ Standard
- ◇ Fast
- ◇ Safe
- ◇ Satisfied

Activities :

- Develop a comprehensive care system for trauma and emergency patients
- Develop multidisciplinary personnel in many courses
- Developed Trauma care & Head Injury fast track system
- Develop a strong network system Trauma Audit weekly/continuous

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Diagnosis	High risk	High cost/ Long LOS	High volume	New evidence/ technology	Complex care	KKH rank
Severe Traumatic Brain Injury(TBI)	5	5	5	5	5	1
Mild TBI	5		5	5	5	2
Multiple injury	5	5		5	5	3
Blunt abdominal injury	5	5		5		4
Blunt Chest injury	5	5		5		5
Vascular injury	5			5		6
Fracture pelvis	5	5				7

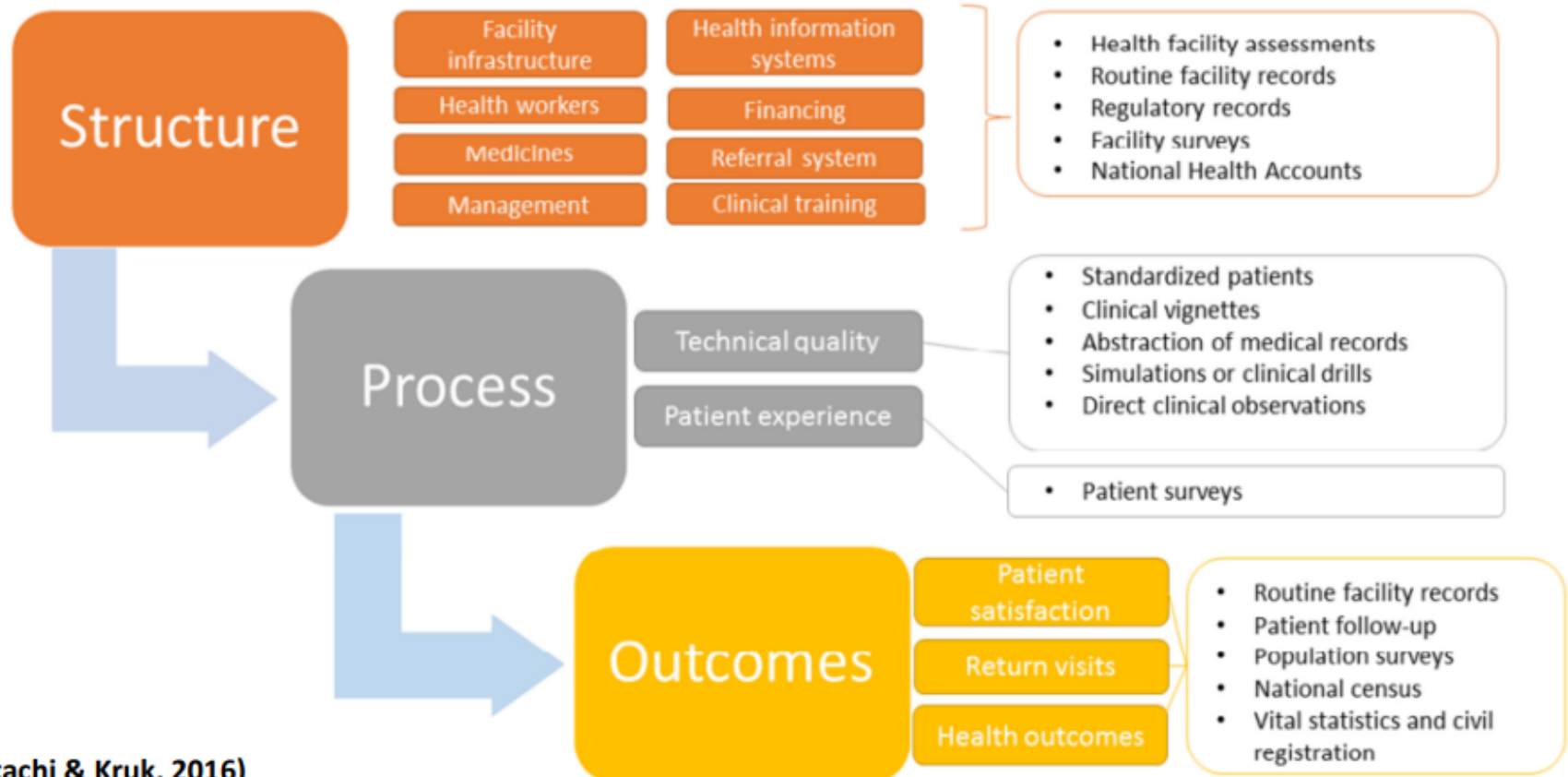
The overview provides a base for further consideration/conclusion of which groups of patient care quality outcomes are reviewed/concluded. on what issue

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Three domain of Quality of Care

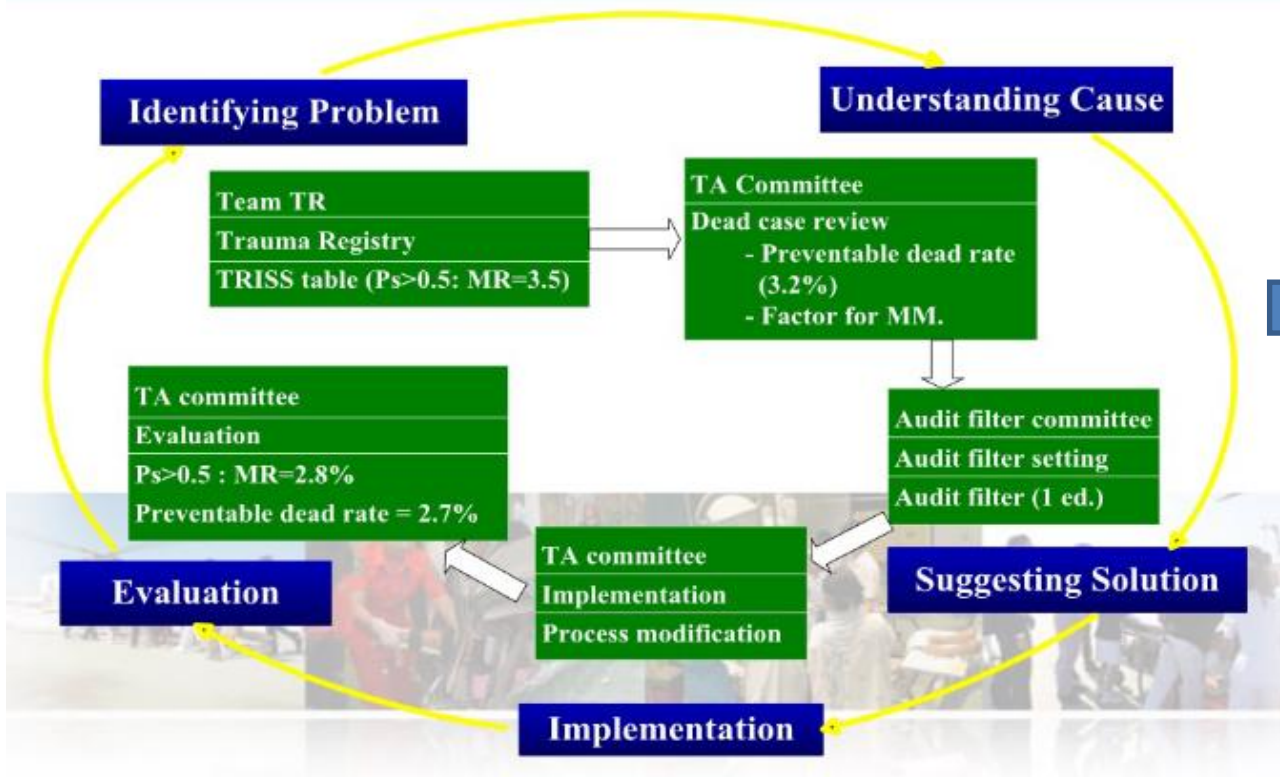


(Akachi & Kruk. 2016)



Auditor/ Supervise Quality control

Closing the loop



Performance
improvement
and patient
safety



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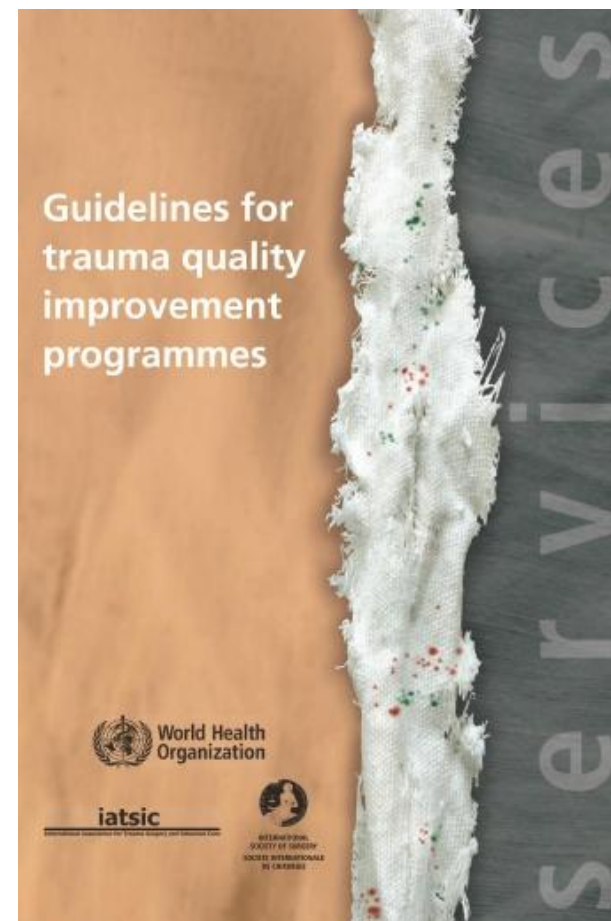


Method of TQI Program

1. MM Conference and dead case peer review
2. Multidisciplinary conference
3. Knowledge Management (KM)
4. Quality Round
5. Risk-Adjusted mortality
6. Environmental site visit

Download :

<https://www.who.int/publications/i/item/guidelines-for-trauma-quality-improvement-programmes>



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Gantt chart : Work plan TNC On TQI Program

Activities	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
1. MM conference/ Dead case peer review /Preventable dead	One	time a	week									
2. Quality round						1-3						
3. Multidisciplinary conference						1-3						
4. Inter department conference Ortho- TM						1-3						
5. Topic review												
6. PCT TM												
7. Trauma Internal Survey		One	time	a year								
8. Trauma site visit Node & Network		One	time	a year								

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- **Roles and Responsibilities for nurse coordinator in TQI Program**

TNC is a very important role in TQI program because will allow the work to be carried out smoothly and quickly.

TNC is like a cog of a machine that will make the work of that organization can be carried out well. In an organization, it is imperative that at least one person is required to act as **TNC** as Assistant Director of the TEA Unit as the center of the organization's work as a link to executives with multidisciplinary both inside and outside the organization





- Roles and Responsibilities for nurse coordinator in TQI Program**

Main activities	Activities details	Stakeholders	Duration
MM Conference and dead case peer review	<ul style="list-style-type: none"> •Dead case peer review Mortality & Mobility In a week •Trauma scoring calculator •Select case PS > 0.75 to identify problem in the system 	Trauma team : Doctor Nurses : Trauma/ ER/NS /ICU /Orthopedics ward	1 hr





• Roles and Responsibilities for nurse coordinator in TQI Program

Main activities	Activities details	Stakeholders	Duration
Multidisciplinary conference	<ul style="list-style-type: none"> • Present the problem in the system • Understanding the cause • Suggest the solution 	Trauma team : <ul style="list-style-type: none"> • Doctor • Nurses • Multidisciplinary team 	1 hr





- Roles and Responsibilities for nurse
coordinator in TQI Program**

Main activities	Activities details	Stakeholders	Duration
Quality round	Selected a case need complex care in ward	Trauma team : Doctor Nurses Multidisciplinary team Relative	30 min -45 min
Trauma team site visit	Selected area	Trauma team : Doctor Nurses	1-2 hr





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Performance indicator deficiency

Trigger tool	ER	TM	ICU
ER > 2 hr Admit Definitive care			
Exceeding IV Fluid > 2 Lit. Give blood Tx (EBS > 500 cc)			
Need explore penetrating trauma wound in 30 min ,Penetrating Vascular injury with Shock : Trauma Fast tract			
CT brain scan < 1 hr (v/s stable, No herniation)			
GCS < 13 CT scan with in 4 hrs (v/s stable, No herniation)			
GCS <= 9 Need intubation within 10 min			
Multiple injury need CXR			
Blunt injury above clavicle Need C- collar			
Multiple injury need oxygen			
Un plan revisit < 48 hrs same injury ER revisit			
IPD : Missed fracture, missed dislocation joint > 48 hrs			

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Performance indicator deficiency

Trigger tool	ER	TM	ICU
Hypothermia (BT <=35 C)			
Stable long bone Fx fixation/Reduced < 24 hrs			
Compound Fx fixation < 8 hrs			
Non therapeutic Laparoscopy			
Craniotomy within 2 hrs			
Reduce large joint dislocation < 8 hrs			
Explore laparotomy Case unstable within 1 hr			
Explore laparotomy case stable within 2 hrs			
Ischemic limb within 4 hrs			
Unplan Re- OR , Re intubate , Revise ICD			
Unplan Re-admit ICU			
Hct should > 25 %			
BT in OR			
All missed injury > 48 hrs			
Complication			

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Nursing round

Nursing conference

Quality round



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Nursing conference in Emergency department



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MM Conference & Multidisciplinary conference



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Family talk



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The goal is to optimize the information delivery time and reduce dissatisfaction and complaints from information communication issues

Satisfaction with receiving patient information from doctors/nurses .It was at a very satisfactory level of 80 percent.



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Referral : ER Call center



Trauma Site Visit



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Trauma site visit 4 Node &



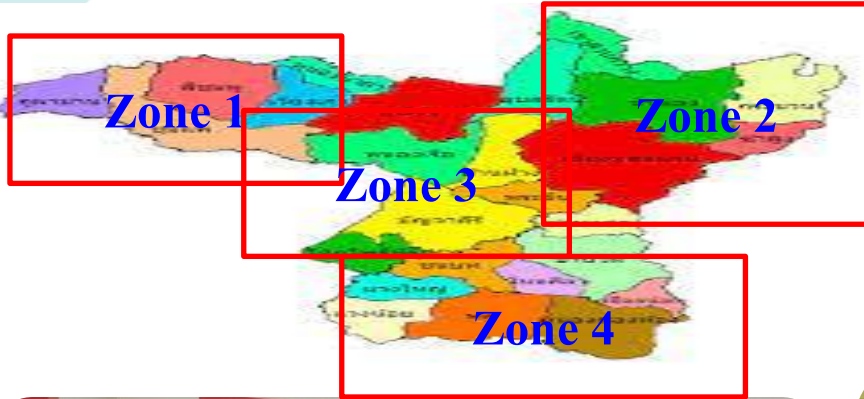
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Network strengthening



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Objective of Trauma site visit

Node & Network strengthening

1. To acknowledge problems, obstacles and opportunities to develop work in the trauma care system and find solutions together for Traumatic Brain Injury, multiple injuries, Trauma Fast track System
2. To exchange of knowledge and rehabilitate knowledge in caring for injured patients
3. To exchange knowledge and build good relationships. It is to create a network of work.

Trauma Team (Visitors)

- Doctor : Neurosurgeons , Trauma, EP
- Nurse ER, TM ward, ICU, NS1-2 Refer Center, Re- hab , Khon Kaen Provincial Health Office/Unit Khon Kaen Hospital/TEA unit team

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Trauma director to present problem
information Obstacles in the trauma patient
care system to management/
To get support from the Director of KKH
and Board committee for developing work



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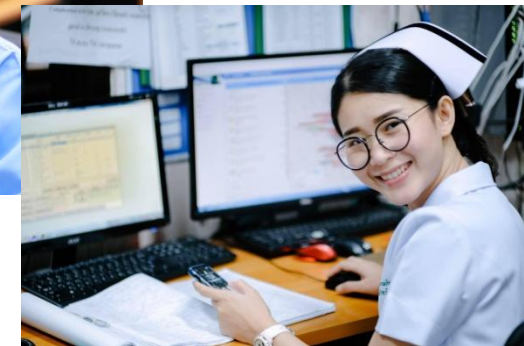
- Referral system
- ER Call center, KKH

The ER nurses assesses the suitability of patient care during referrals

Airway care

Breathing

Circulation



Case Severe sepsis of PPI

ชื่อผู้ป่วย: ... รหัสผู้ป่วย: ...

ชื่อแพทย์: ... ชื่อพยาบาล: ...

อาการ/สัญญาณชีพ	ค่า/ระดับ	หมายเหตุ
อุณหภูมิ	38.5°C	
ชีพจร	140 bpm	
ความดันโลหิต	140/90 mmHg	
การหายใจ	20 rpm	
SpO2	95%	
ระดับความรู้สึก	ตื่นตัว	

ประวัติการเจ็บป่วย: ...

การวินิจฉัย: ...

แผนการรักษา: ...

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Trauma Emergency Committee

provincial level & 7 health area level

Presenting problems
encountered in patient
care during referral
and find a solution
improve work



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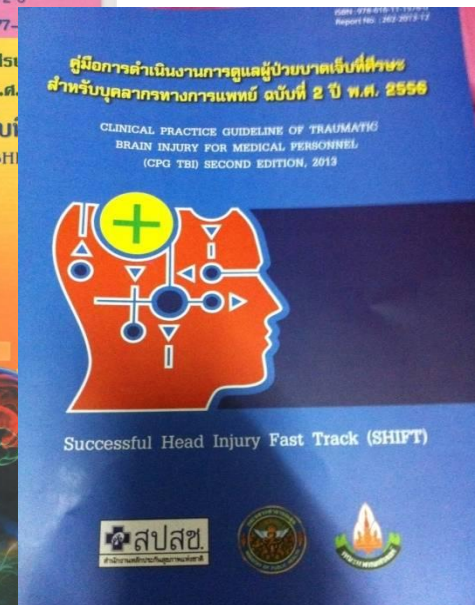
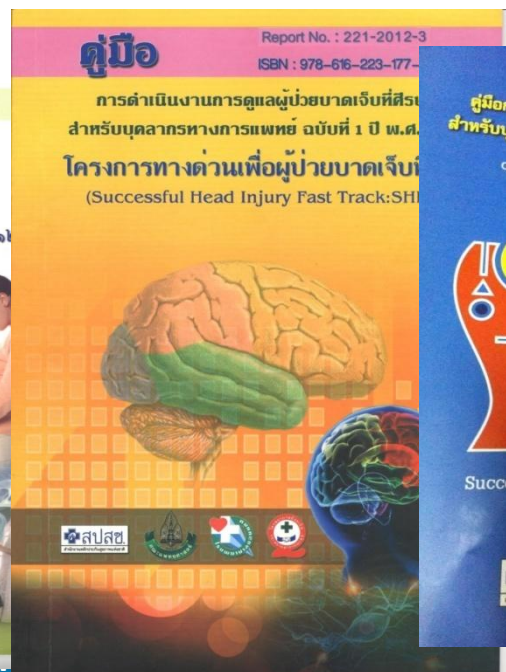


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Development Guideline TBI & Implement

- Guideline for Trauma brain injury patients
- Requesting and submitting a CT Brain
- Guideline for Stop bleeding from Base skull fracture
- Guideline for a Traumatic polyuria
- Guideline for referral of TBI in children < 1 year



Capacity Building for “Trauma Medical Directors and Trauma Nurse Coordinators in Southeast Asia Region”

Research and development in nursing practice & Implement nursing practice guideline

- The development model of severe traumatic brain injury :Case management study
- Nursing Practice Guidelines for Mild Traumatic Brain Injury Patients



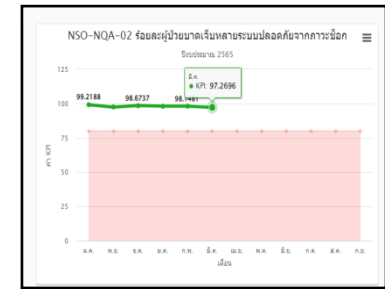
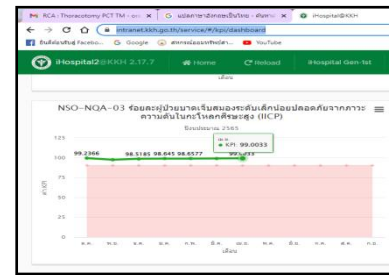


Nursing outcomes

- Percentage of mild traumatic brain injury patients safe from IICP > 80%
- Percentage of patients with multiple system injuries are safe from shock > 80%

achieve the goal

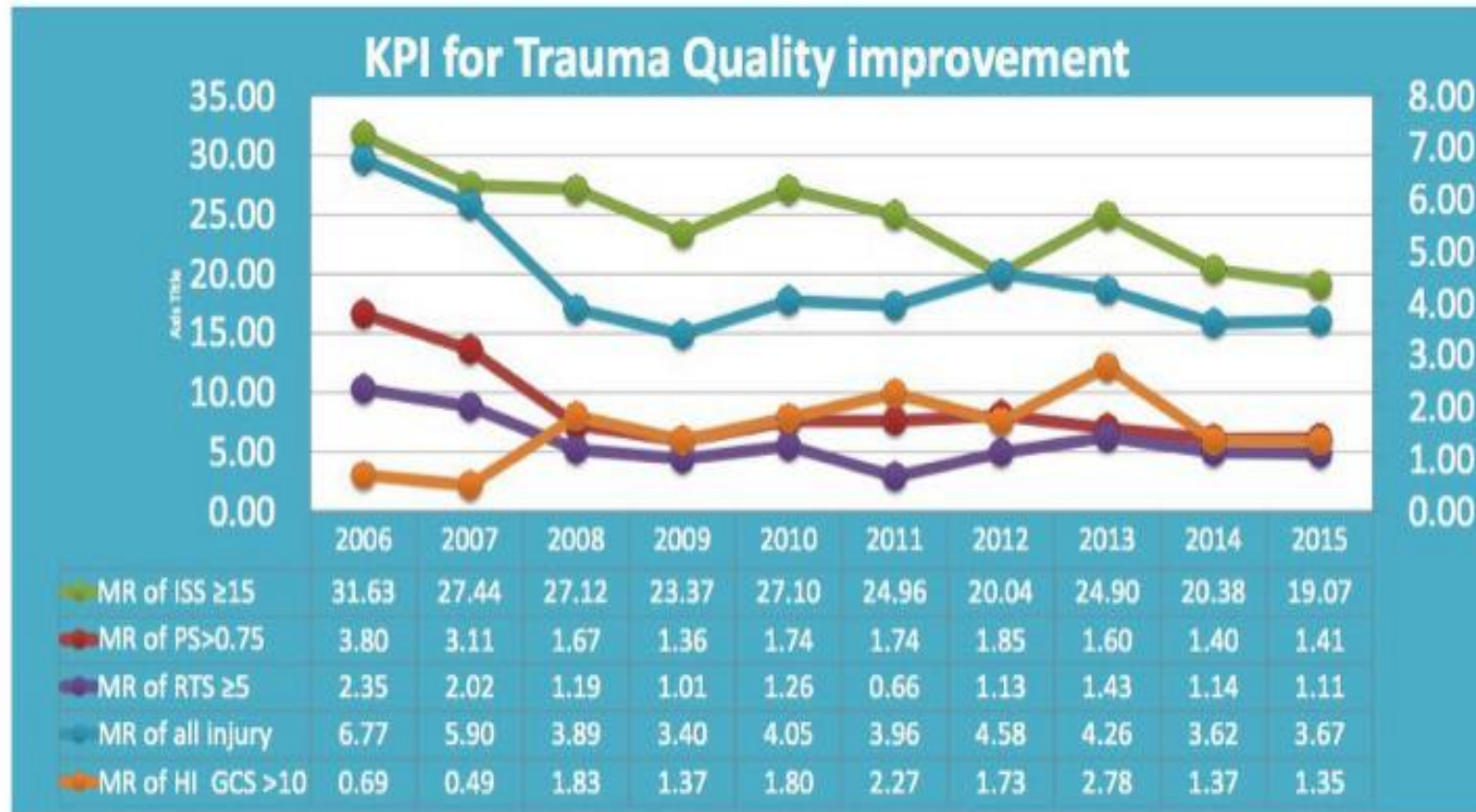
<https://intranet.kkh.go.th/service/#/kpi/dashboard>



- Percentage of patients with moderate to severe traumatic brain injury (Intermediate Care phase has been prepared before discharge > 80%
- Percentage of screening patients Over < 15 % -Under triage in Emergency department < 5 % **achieve the goal**



KPI for Trauma Quality Improvement



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Show & Share

IMC in TBI & Family talk



International O
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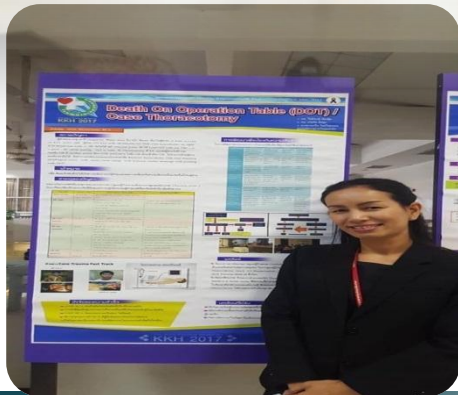


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QI DAY : RCA Dead on operation table

Case Thoracotomy



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PNC Trauma Network Quality Assurance

“Pre-Hospital Care and Traffic Accident Referral System”



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TEA Unit sharing national level



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Research sharing



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in 46th JAAM Conference international session conference , Japan

Development of a case management model for severe traumatic brain injuries



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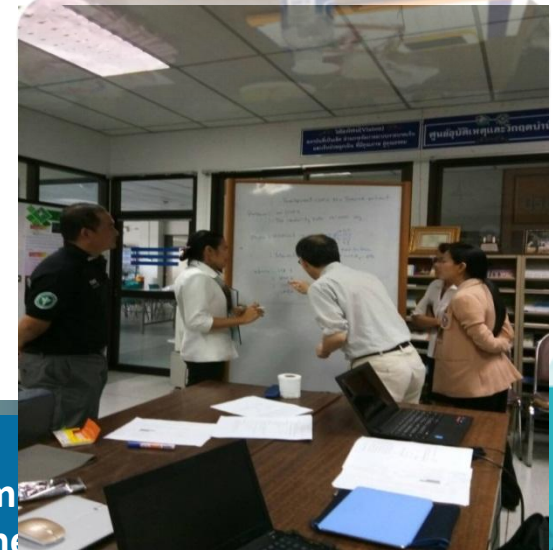
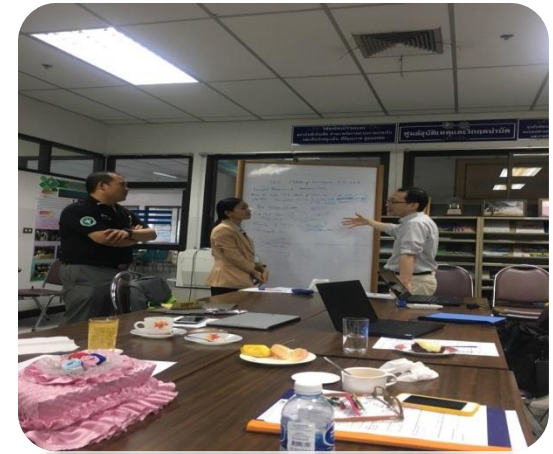
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Development research proposal with cooperation from

Teikyo University Hosital, Japan

Dr. Shinji NAKAHARA



1. Access to the Trauma patient EMS service system with an ISS score > 15
2. Results of the use of nursing practice guidelines for Trauma patients with hypovolemic shock
3. Compare the results of the initial resuscitation of the patients from the volunteers who were taken to the hospital.

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EMA Emergency Medicine
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August 2021
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Perspective | Full Access

Development of an emergency medical services system in Thailand: Roles of the universal health coverage and the national lead agency

Oratai Pochaisan, Ratrawee Pattanarattanamolee, Weerasak Pongphuttha, Witaya Chadbunchachai, Shinji Nakahara

First published: 12 May 2021 | <https://doi.org/10.1111/1742-6723.13794>

Oratai Pochaisan, MNurs (Adult Nursing), Registered Nurse; Ratrawee Pattanarattanamolee, MD, FRTCEP, MSc, Deputy Director of Trauma and Critical Care Center; Weerasak Pongphuttha, MD, FRTCEP, Deputy Director of Trauma and Critical Care Center; Witaya Chadbunchachai, MD, FRCST, Director of WHO Collaborating Centre for Injury Prevention and Safety Promotion; Shinji Nakahara, MD, MS, PhD, Professor.

Figures References Related Information

Recommended

[Emergency Medical Services Fellowship in the United States of America](#)

Salomon Zalstein

Emergency Medicine

and the community-level EMS network.⁵ Beginning in 2003 in Khon Kaen Province, the first-responder units employed first responders who only required 16 h of training (later upgraded to emergency medical responders requiring 40 h of training) and were mainly run by and stationed at sub-district administrative offices. Furthermore, a few ambulance services run by private charity foundations were formally integrated into the provincial EMS system as first-responder units. Thus, the increase in the number of EMS units was mostly attributable to a growth in first-responder units during this period.⁵ Community-level EMS networks, consisting of volunteers, provide first aid to patients while waiting for an ambulance. Volunteer training started in 2004 in Khon Kaen.^{5,7} Volunteers are recruited from the local community. The curriculum includes training on providing first aid to cardiac-arrest and trauma patients, and learning when and how to contact EMS.

Public relations were enhanced to raise people's awareness regarding the EMS hotline (1669) and how to use EMS. Khon Kaen Province's public relations activities began in 2005 based on grants from the NHSC and the provincial

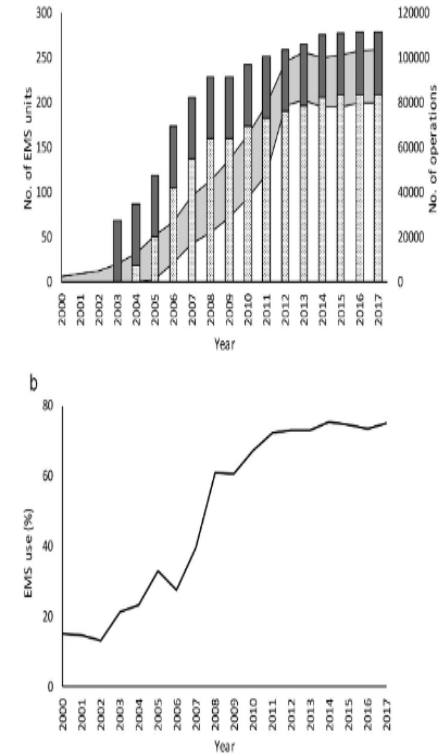


Figure 1. (a) EMS units and dispatch operations in Khon Kaen Province, 2000-2017. (b) EMS use among severely injured patients treated at Khon Kaen Regional Hospital.



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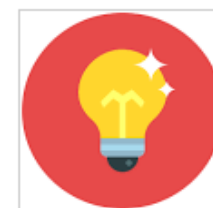


How to raise the capacity of trauma nurse to trauma nurse coordinator ?

Change your mind set

Do what you love

Fine for Hero/ Idol



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- The project to develop the potential of nursing personnel to Trauma Nurse Case Manager Trauma Nurse Coordinator April 4 - May 31, 2012 A total of 36 participants From 14 wards involved in caring for injured people from accidents
- 40-hour theoretical lesson plan Practical 44.5 hours Presented Case Conference 3 times Interview to select those who pass the selection criteria Trauma Nurse Case Manager and Trauma Nurse Coordinator December 28, 2012
- Study visit trauma care system and nursing management system ,Nurse Coordinator Capacity Development Program at Phramongkutklao Hospital Bhumibol Adulyadej Hospital Royal Thai Air Force Medical Department and Queen Sirikit Hospital
- 29-31 August 2012 Workshop Structure of a short-term training course in specialized nursing Trauma nursing Date 25-27 September 2013



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Thank you



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