ร้อยเรื่องราว....เล่าเรื่อง line

พ.ว.นุชจารี จังวณิชชา

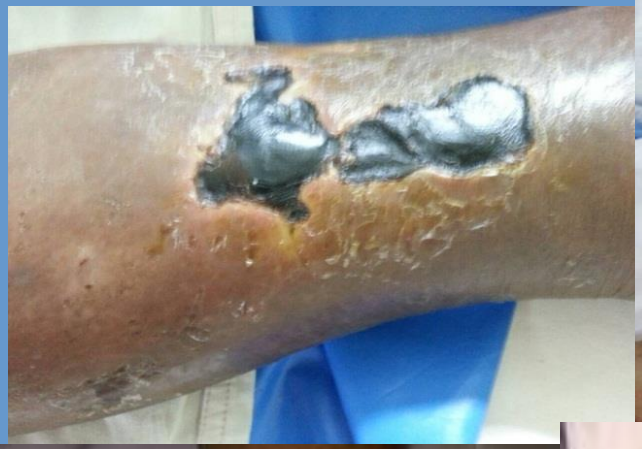
ชมรมเครือข่ายพยาบาลผู้ให้สารน้ำแห่งประเทศไทย

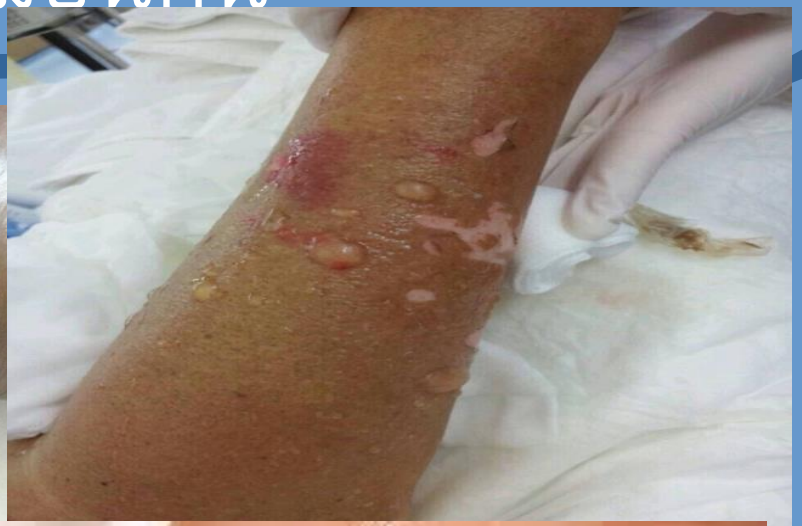
IV Team Thailand Network was Established the end of 2012
National guideline related with IV management will be established

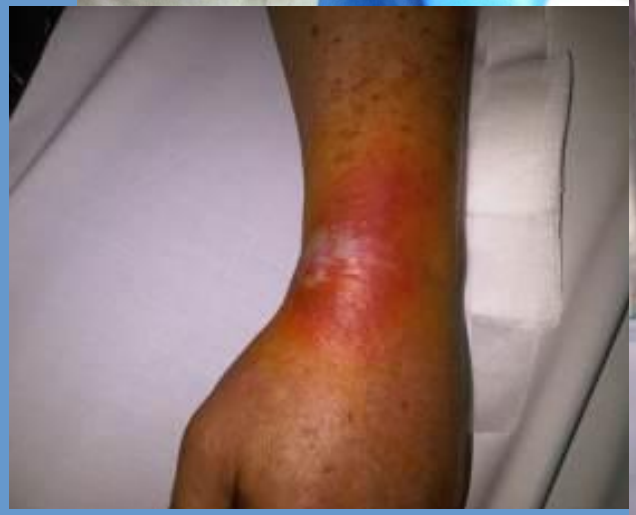


- Update new standard
- Create new guideline
- Knowledge Sharing

กลุ่มคนที่มีปัญหาเหมือนกัน





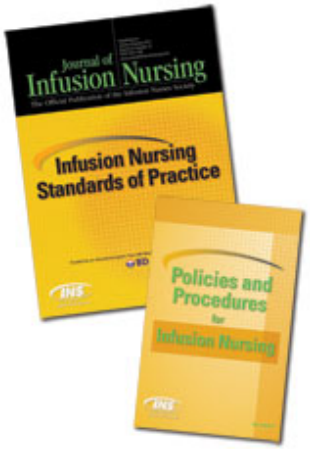


Key success

- If we want more, different or better, we must do more, different or better.

เรามักจะหลงอยู่ในวังวนเดิมๆ วิธีการทำงานเดิมๆ แต่คาดหวังผลที่ดีขึ้น

Guidelines for the Prevention of Intravascular Catheter-Related Infections, 2011



Infusion Classics Bundle

To prepare yourself for the future of infusion nursing, you need the classics.

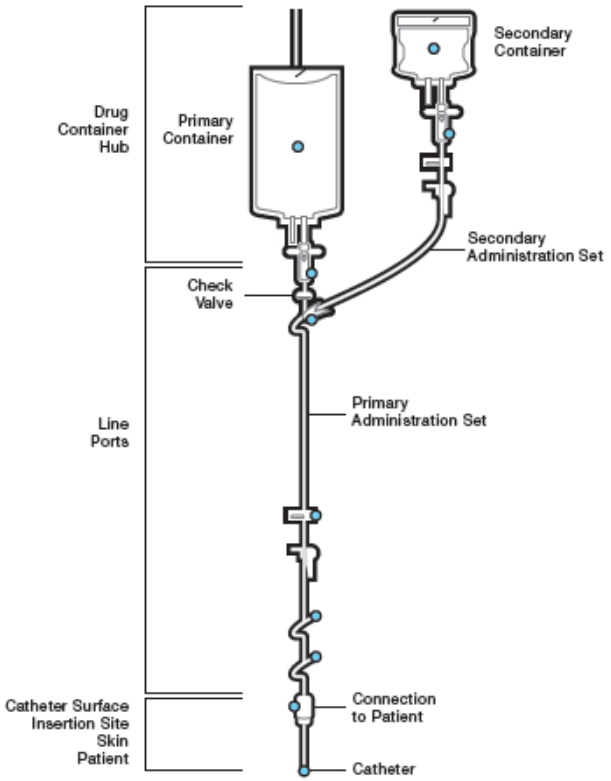
The Infusion Classics Bundle contains our two most popular and necessary resources, Infusion Nursing Standards of Practice and Policies and Procedures for Infusion Nursing. Both publications are overwhelmingly used throughout the infusion community to develop institutional policy, assist in implementation of best practice while giving you a step by step evidence-based guide to provide exemplary care.

If you're starting an infusion library, these two infusion classic resources are required reading – and for a limited time, shipping is absolutely FREE!

From practice to standard

The IV System and BSI

Portals of Entry



Contamination Rates

0.3 - 22% for admixtures

0.9 for infusate

14 - 45% from hub

The medication delivery system allows many opportunities for infection[27,28,29,30,31]

Beyond we know

Add-on devices

- Luer-locked design
- Disinfect the port (using friction)
- The use of stop cock is not recommended

Needleless connector

– Nurse should be knowledgeable about the function

– Nurse should be aware that the catheter hub is a know source of infection

Phlebitis rate
Infiltration rate
Extravasation
CLABSI

Process& outcome

Flushing protocol

Dressing
Site cleaning
Port cleaning

Skin preparation
Site selection
Proper equipment

Harvest (outcome)

Monitoring

management

Maintenance

Preparation

Knowledge sharing : ทีมสัญจร

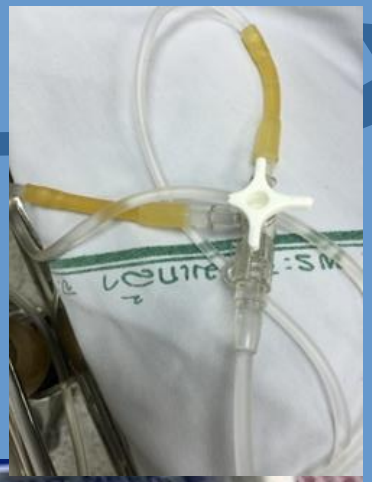
ปรับทัศนคติ

2 minutes rule

Paint with circular motion

Scrub with friction

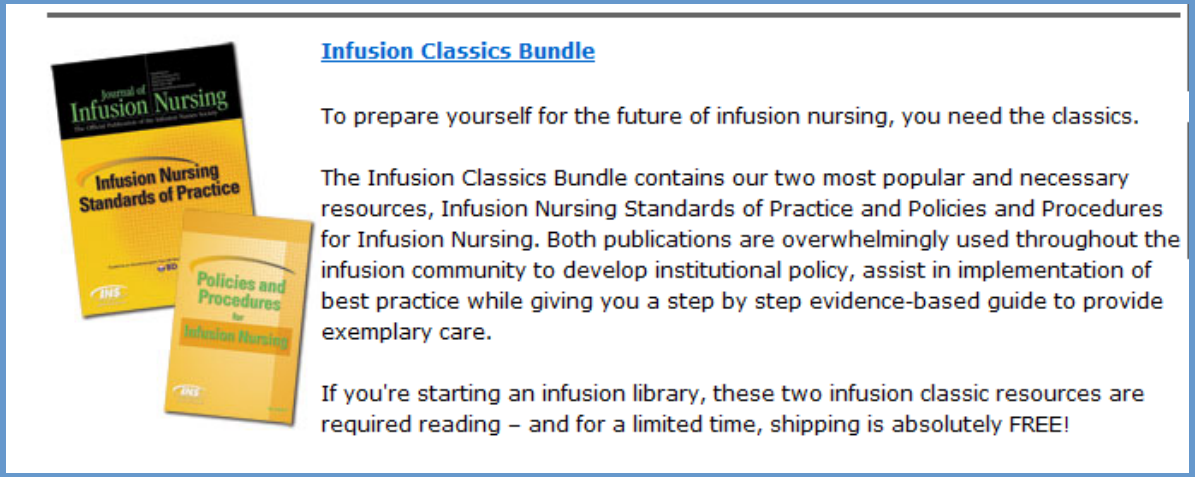
Scrub the hub




WITHOUT

Vented administrator set vs Non vented

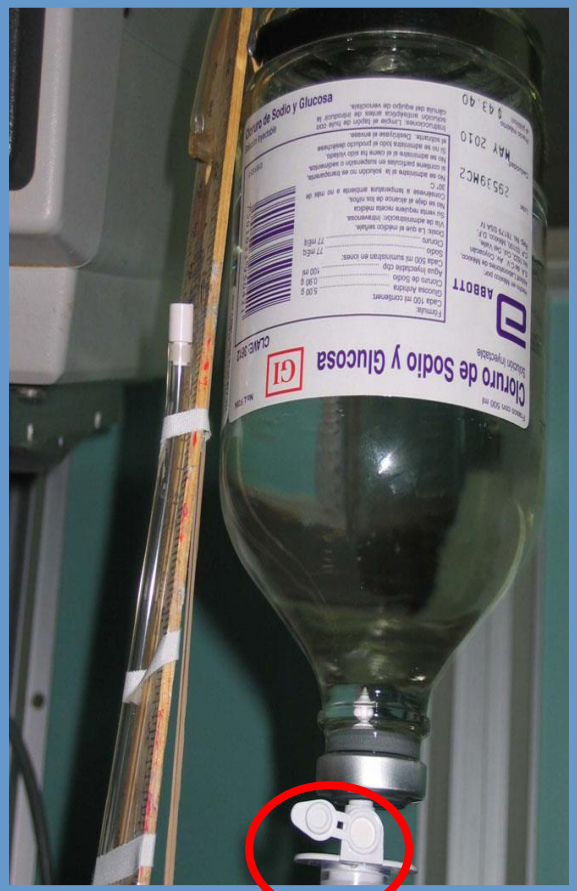
- A vented administrator set shall be use for solution supplied in glass or semi- rigid container, and non vented administrator set shall be used for plastic fluid container
- All administrator sets shall be a luer-lock design to ensure a secure



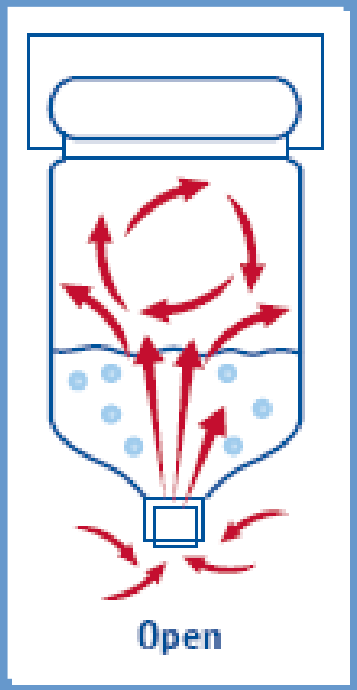
Leur lock design

High risk area :
chemotherapy, critical care, operating theater

Open Infusion System

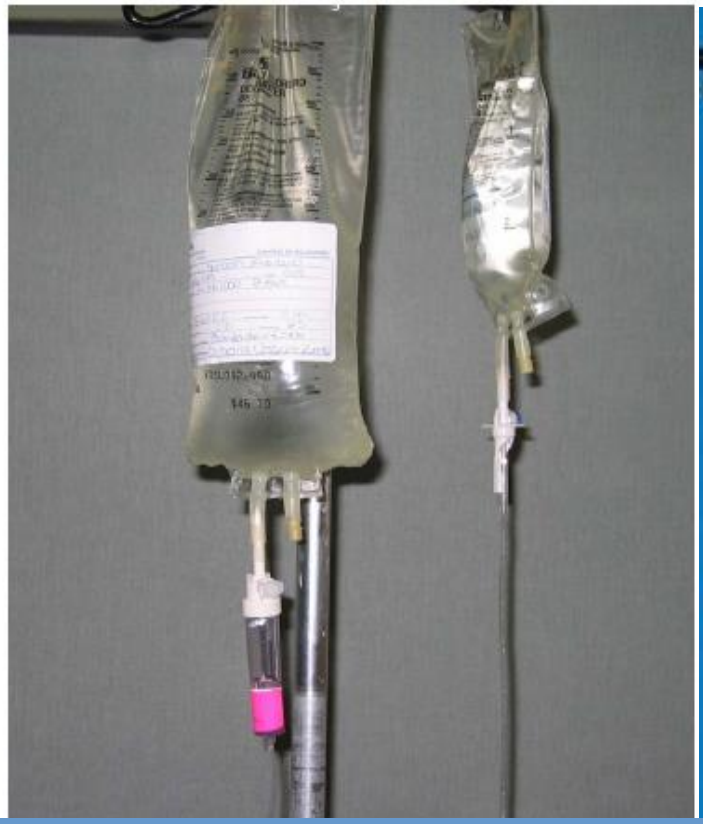


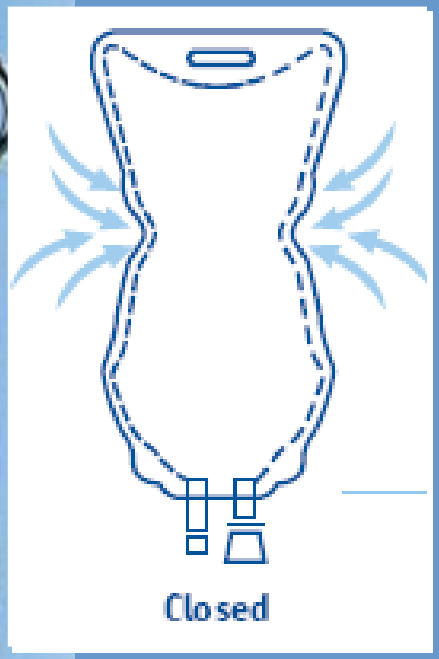
Open Infusion Container –
Glass container with **air filter.**



Open Infusion Container –
Semi-rigid container with **air filter**.

Closed Infusion System





Closed Infusion Container-
Fully collapsible plastic container without air filter

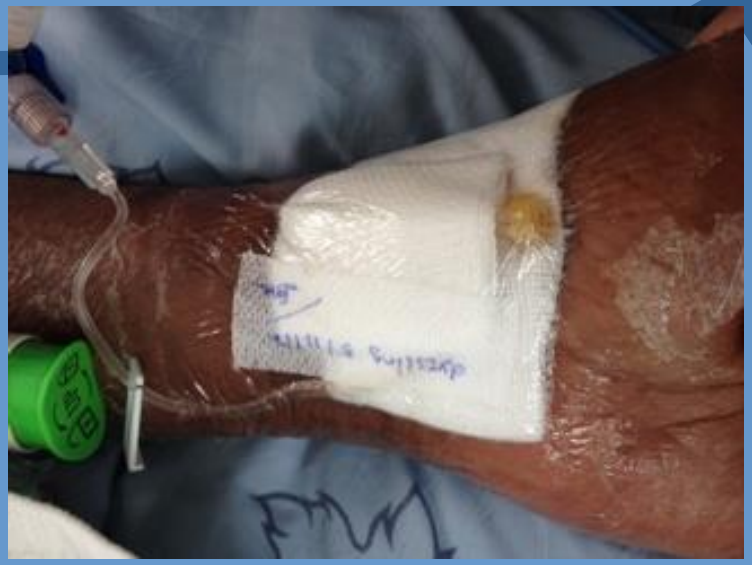
Rangel-Frausto *et al. Annals of Clinical Microbiology and Antimicrobials* 2010, **9**:6
http://www.ann-clinmicrob.com/content/9/1/6

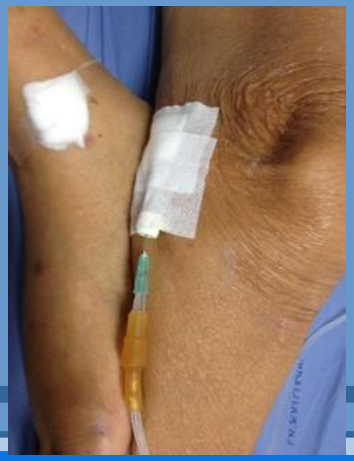
IV set : One for all

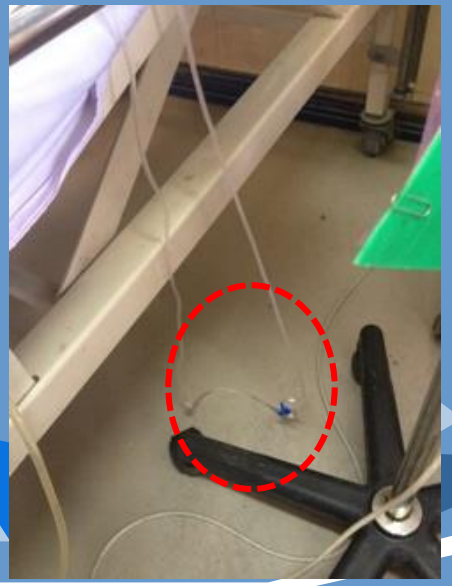
Close and Open system

Not recommend

Monitoring







Complication prevention

- Central line bundle
- Proper equipment
- Multidisciplinary approach : Physician, pharmacist, nurse, patient
- Procurement : proper medical device

procurement

- Procurement department
- Financial department
- Medical equipment
- IC department
- User evaluation

เรื่องราวที่ถูกรายงาน

Table. Tubing Misconnections Reported to the [redacted] Patient Safety Authority, January 2008 to September 2009

MISCONNECTION	NUMBER OF REPORTS
Secondary intravenous (IV) infusion connected to lower "Y" port of primary IV tubing set	8
Hemodialysis arterial and venous tubing lines reversed	5
G-tube and J-tube lines reversed	3
Incorrect tubing connection (no further explanation provided in reports)	3
Epidural and patient-controlled analgesia (PCA) tubing sets reversed	2
Nonhemodialysis arterial and venous tubing lines reversed	2
Cell saver tubing connected to cell saver reservoir	1
Feeding tube set connected to Broviac®	1
Feeding tube set connected to peripherally inserted central catheter (PICC) line	1
Feeding tube set connected to suction port	1
Imaging contrast tubing set connected to tracheostomy cuff	1
IV tubing set connected to dialysis catheter	1
IV tubing set connected to PICC line	1
IV tubing set connected to tracheostomy cuff	1
Knee irrigation connected to peripheral IV tubing	1
Miscommunication (arterial line noted in medical record as peripheral IV)	1
Oral medication delivered through peripheral IV line	1
Suction line connected to water seal	1
Suction and feeding tubing sets reversed	1
Total	**36**

เรียนรู้จากความผิดพลาด

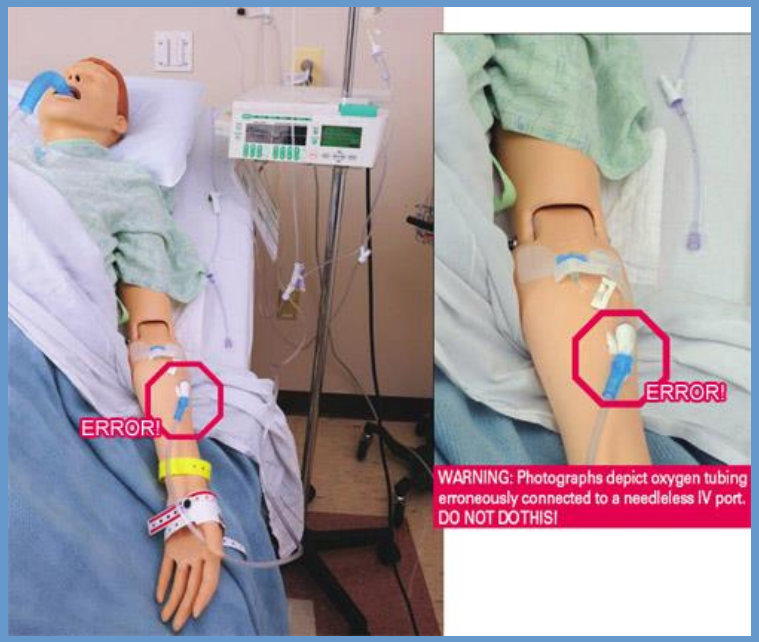
IV tubing erroneously connected to nebulizer

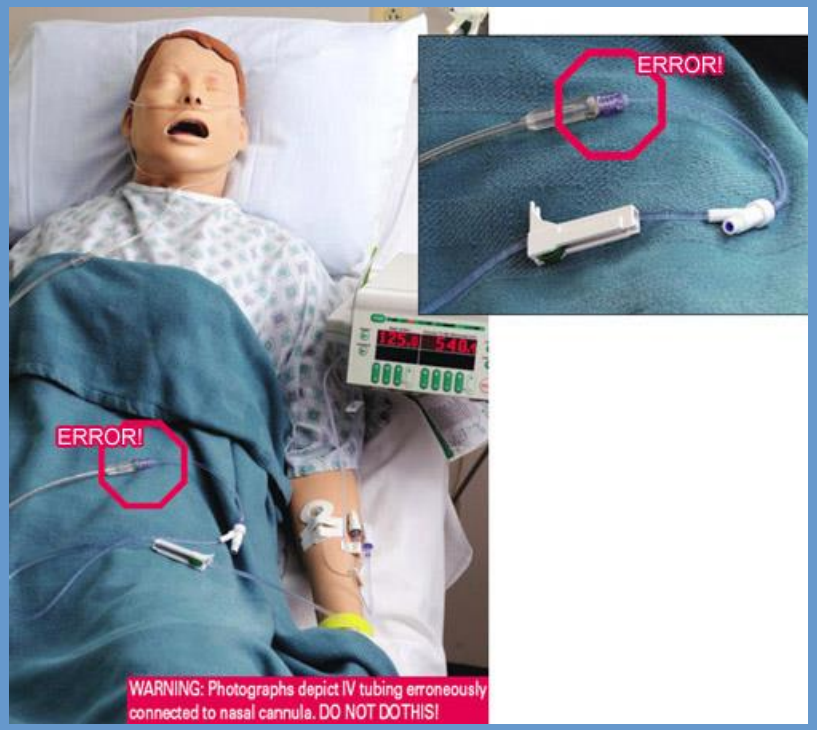
EVENT: CASE STUDY

- During a nebulizer treatment, the patient's oxygen tubing fell off the nebulizer and the patient's IV tubing inadvertently attached to the nebulizer
- When the patient inhaled, a moderate amount of IV fluids was aspirated into the patient's lungs
- The misconnection was identified by the respiratory therapist and the patient survived

POTENTIAL FOR HARM: High

THE JOINT COMMISSION SAFETY TIP: Do not purchase non-intravenous equipment that is equipped with connectors that can physically mate or attach with a female Luer IV line connector


ERROR!
ERROR!
WARNING: Photographs depict oxygen tubing erroneously connected to a needleless IV port. DO NOT DOTHIS!


ERROR!
ERROR!
WARNING: Photographs depict IV tubing erroneously connected to nasal cannula. DO NOT DOTHIS!


ERROR!
ERROR!
WARNING: Photographs depict enteral feeding tube erroneously connected to ventilator in-line suction catheter. DO NOT DOTHIS!

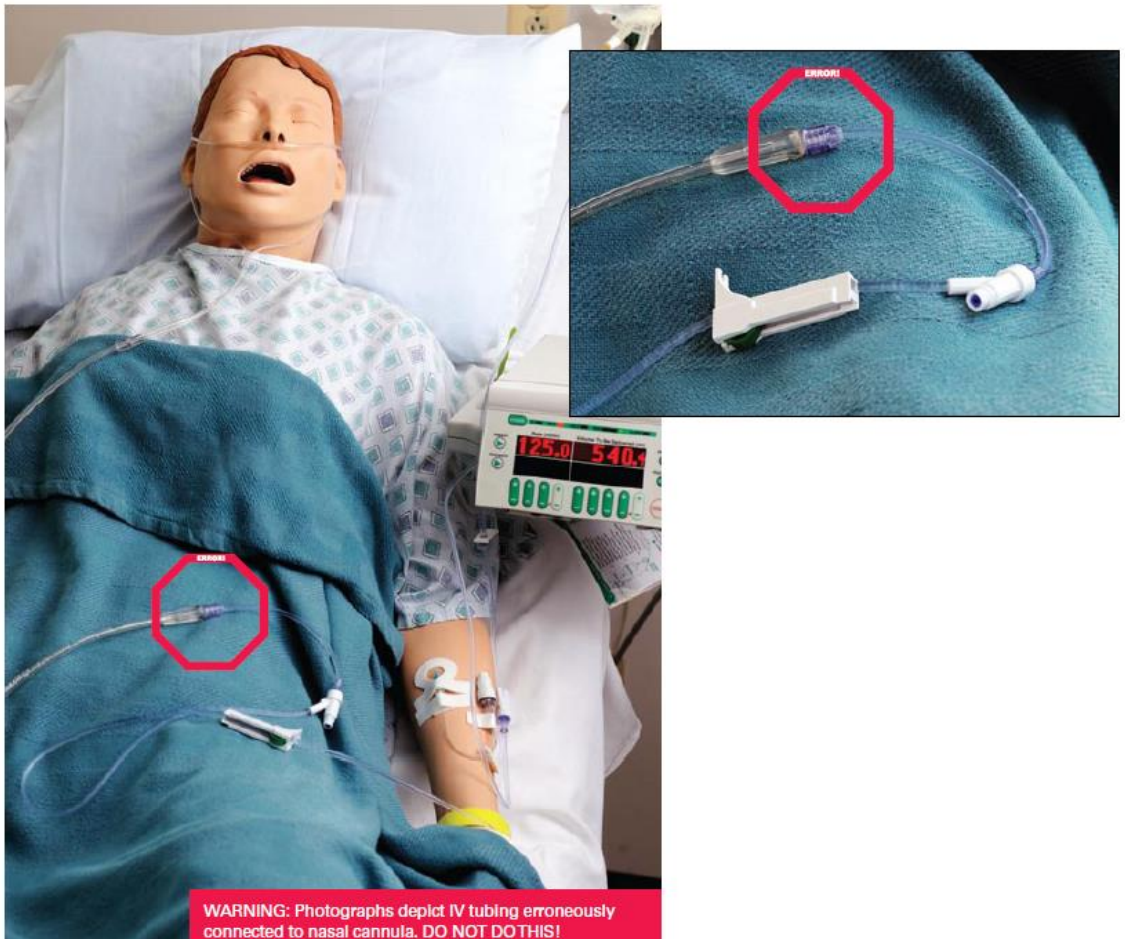
There are various types of misconnections posing dangers, including the following:[3,9]

Types of misconnections		
Enteral feeding tube	connected to	IV (such as *The New York Times* example)[6,10,11]
Limb cuff inflation device	connected to	IV (For example, a 71-year-old woman died post-operatively after a blood pressure cuff was accidentally connected to her IV line, causing an air embolism.)[7]
Epidural solution (intended for epidural administration)	connected to	Peripheral or central IV catheter[10]
Epidural line	connected to	IV infusion[10,11]
Bladder irrigation solution using primary IV tubing (connected as secondary infusion)	connected to	Peripheral or central IV catheter[10,11]
IV infusion (intended for IV administration)	connected to	Indwelling bladder (foley) catheter[10,11]
IV infusion (intended for IV administration)	connected to	Nasogastric (NG) tube[10,11]
Primary IV tube	connected to	Blood product (intended for transfusion)[10,11]
Enteral feeding (gastric or nasal)	connected to	Tracheostomy tube[3]
IV solution	administered via	Blood administration set[10,11]
Primary IV solution	administered via	Various functionally dissimilar catheters (such as external dialysis catheter, ventriculostomy port, amnio-infusion catheter, distal port of pulmonary artery catheter)[10,11]

Look.Check.Connect.

SAFE MEDICAL DEVICE CONNECTIONS SAVE LIVES

U.S. Food and Drug Administration



WARNING: Photographs depict IV tubing erroneously connected to nasal cannula. DO NOT DO THIS!

EVENT

IV tubing erroneously connected to nasal cannula

POTENTIAL FOR HARM

High

CASE STUDY

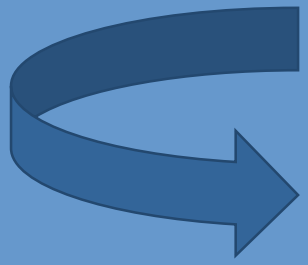
- A nurse's aide inadvertently connected a patient's IV tubing to the nasal oxygen cannula upon transfer to the step down unit
- The misconnection was not noted until 4 hours later, when the patient complained of chest tightness and difficulty breathing
- The patient was treated for congestive heart failure and survived

THE JOINT COMMISSION SAFETY TIP

Recheck connections and trace all patient tubes and catheters to their sources upon the patient's arrival in a new setting or service as part of the hand-off process. Standardize this

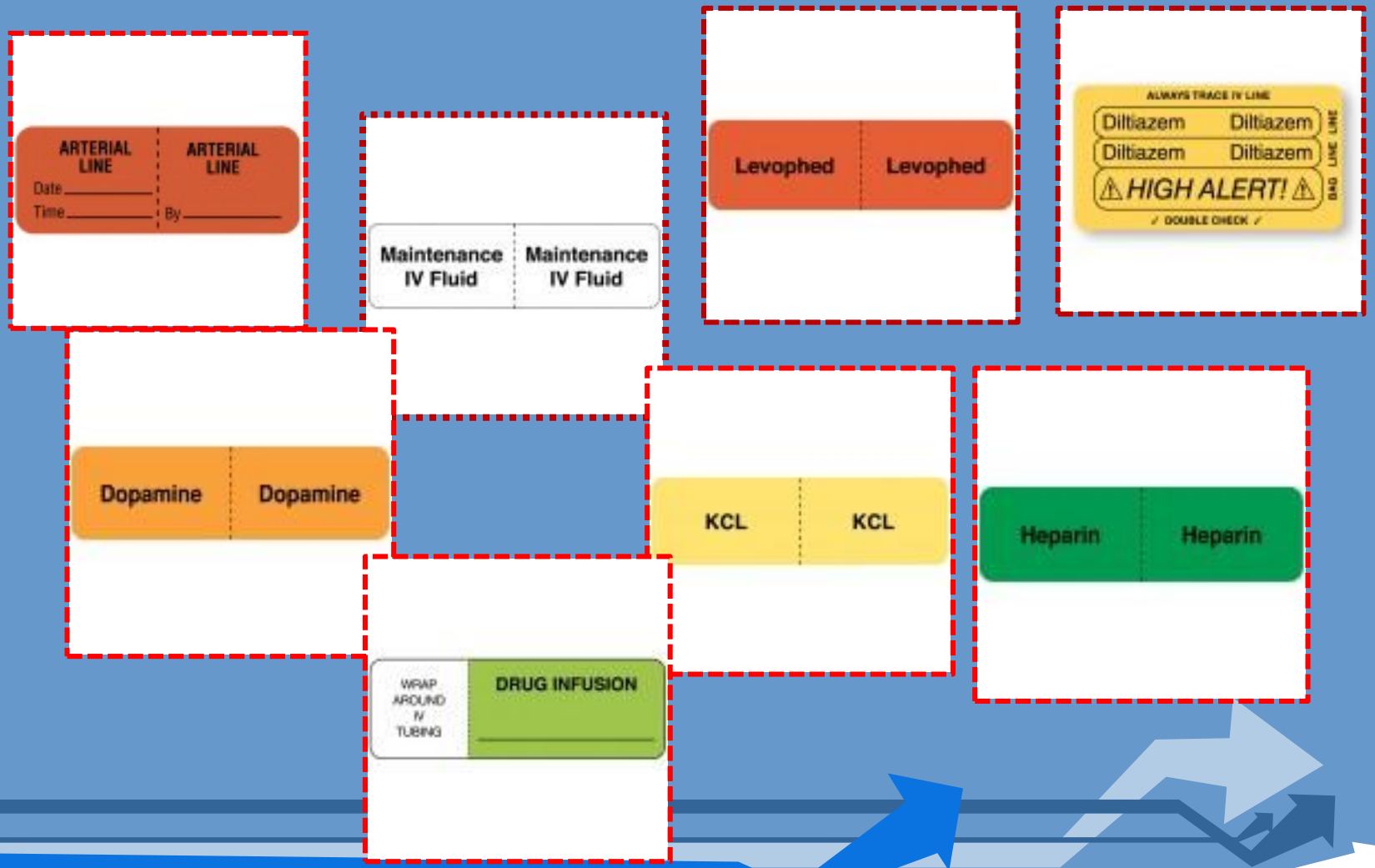
Oral syringe with fool proof for miss connect

Line Identification



Easy and practical… (สำหรับคนทำงาน)

IV line Identification label

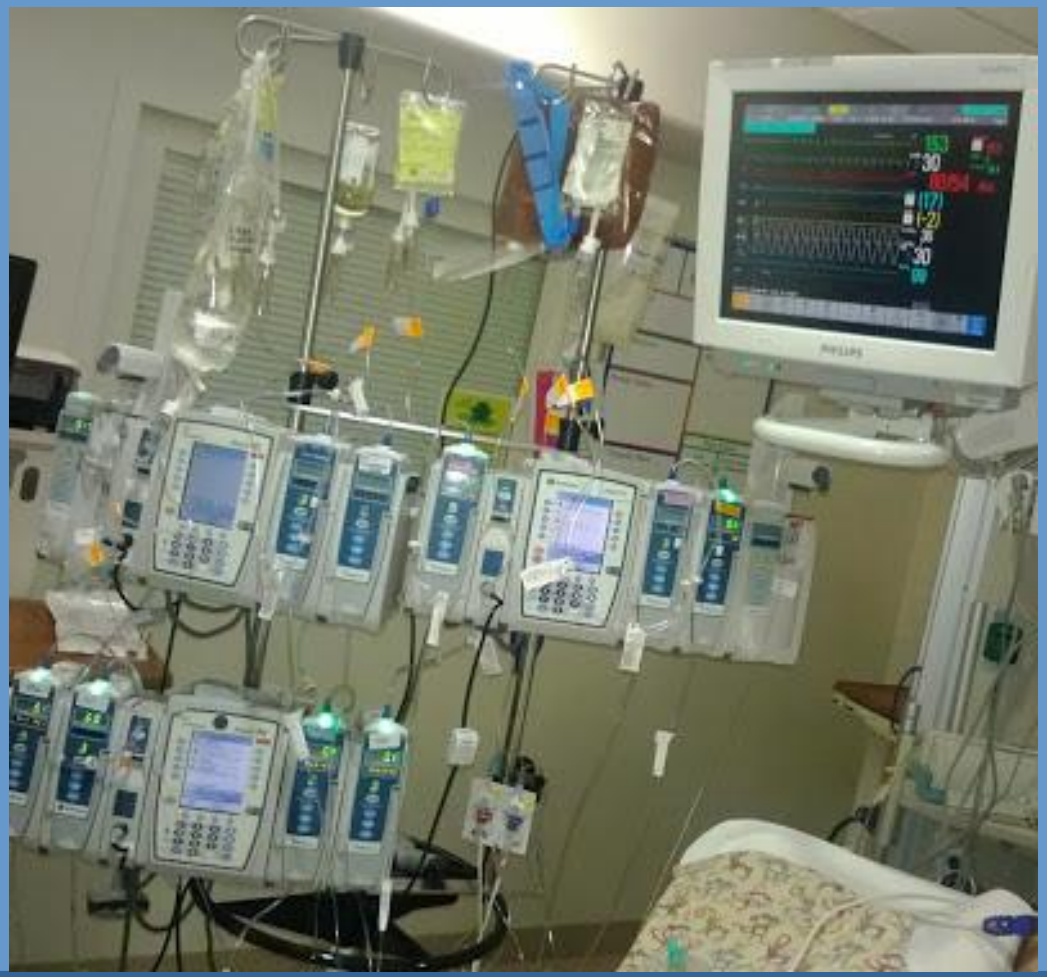


difference between color coding, color differentiation, and user-applied versus commercially-applied color cues

Simple and practical

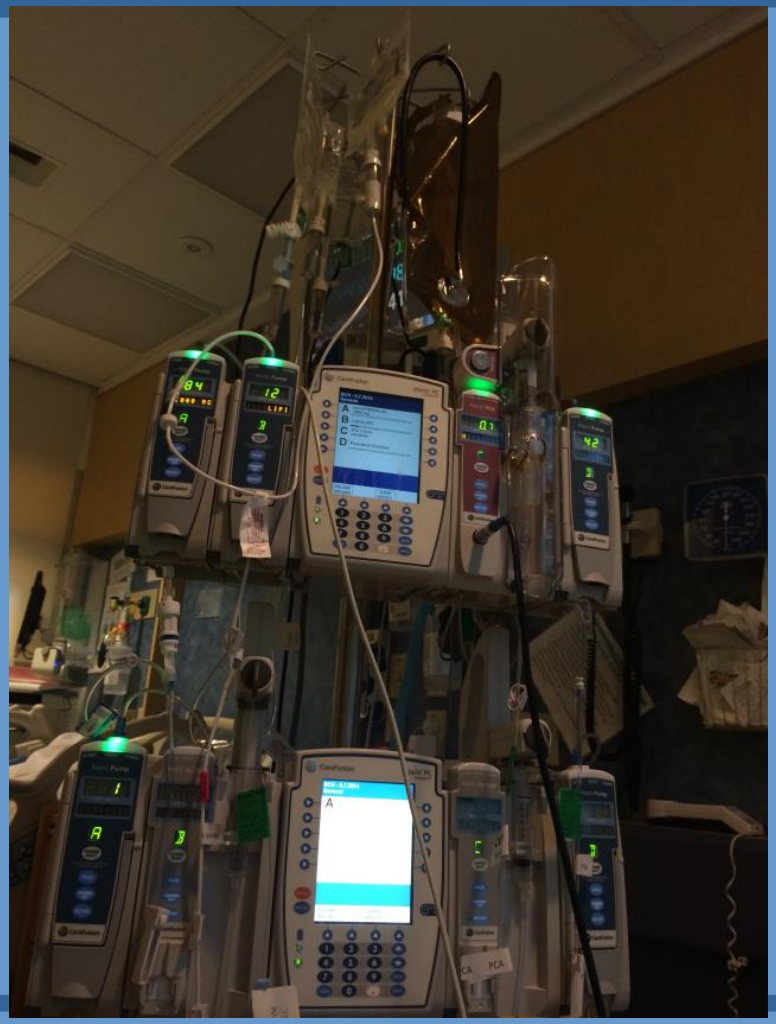

Colleague 3 CXE
10% DSW
60.0mL/H
Somdostatin
10.0mL/H
Levophed
8.3mL/H
Open
STOP

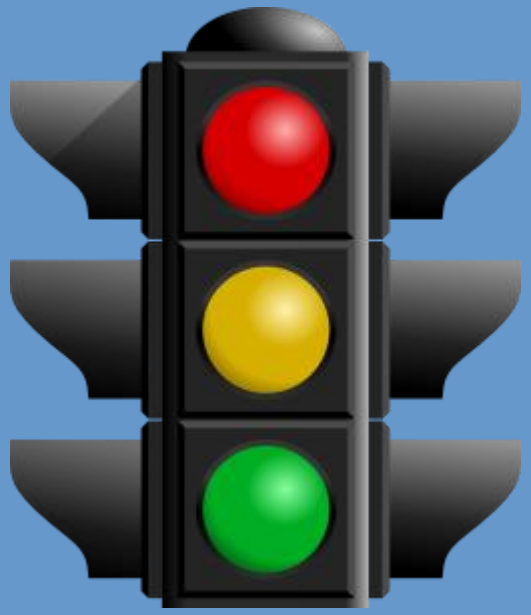
การจัดการความยุ่งเหยิงและซับซ้อน



Line labelling

IV bag
Chamber
Prior pump entry
Injection port

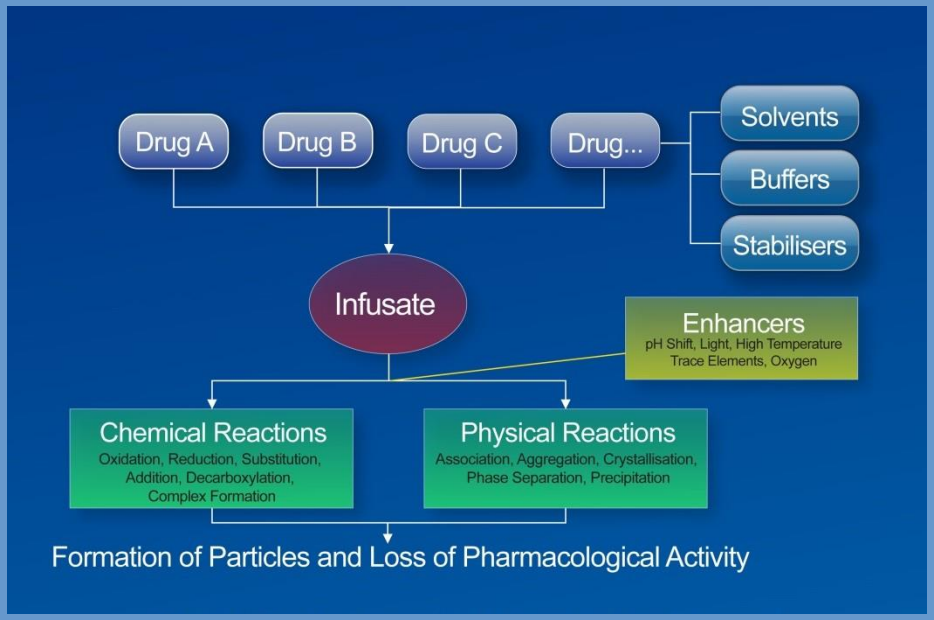




- Miss connect → Look check connect
- Disconnect → Reconcile
  Patient check
  Luer lock

Drug incompatibility reactions

Drug incompatibility reactions originate not only from the active ingredients of the drug but also from solvents, buffers, etc.



- 15 - 28% of drugs given clinically without knowing incompatibility pattern or in spite of known incompatibilities
- Impair efficacy of administered drugs or increase risk of side effects, even formulation of toxic compounds
- In ICU, co-infusion of two drugs is uncertain in up to 45% of instance in which the compatibility of drug combination is unknown

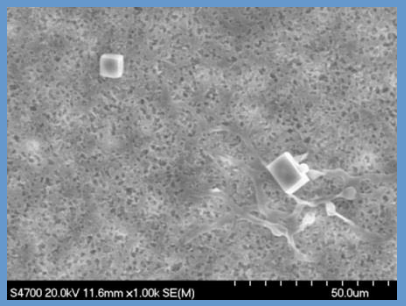
Intravenous Ceftriaxone and Calcium in the Neonate: Assessing the Risk for Cardiopulmonary Adverse Events

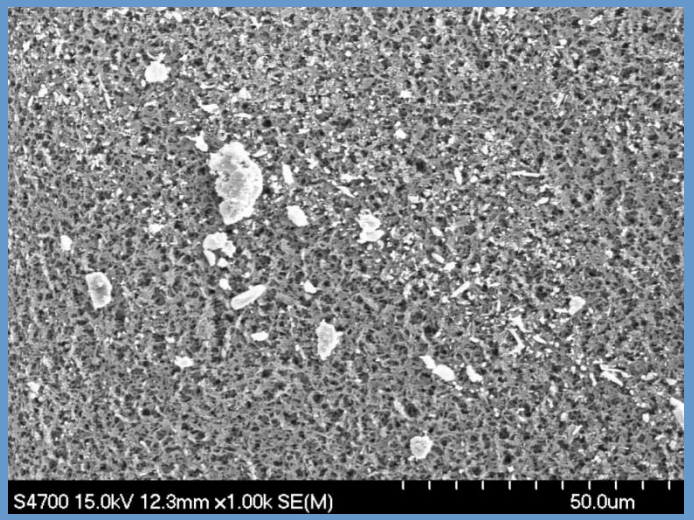
John S. Bradley, MD[a], Ronald T. Wassel, PharmD[b], Lucia Lee, MD[c], Sumathi Nambiar, MD, MPH[d]

- 8 Children are resuscitated after simultaneous application of Ceftriaxone and Calcium Gluconate
- 5/8 died
- In 4/5 of the children who died severe pulmonary embolism could be proved as reason for the circulatory arrest
- Embolism was caused by Calcium / Ceftriaxone precipitations

* Taxis K. and Barber N. Eur J Clin Pharmacol. (2004) 59: 815 – 817
* Vogel Kahmann I. et al. Anaesthesist (2003) 52: 409 – 412
* Wirtz V. et al. Pharm World Sci (2003) 25: 104 – 111
* Kahny-Simonius J. Schweiz Rundsch Med Prax. 1993; 82:1320-7
* Bradley et al. PEDIATRICS 2009; 123 (4): e609-e613

Systemic Inflammatory Response Syndrome



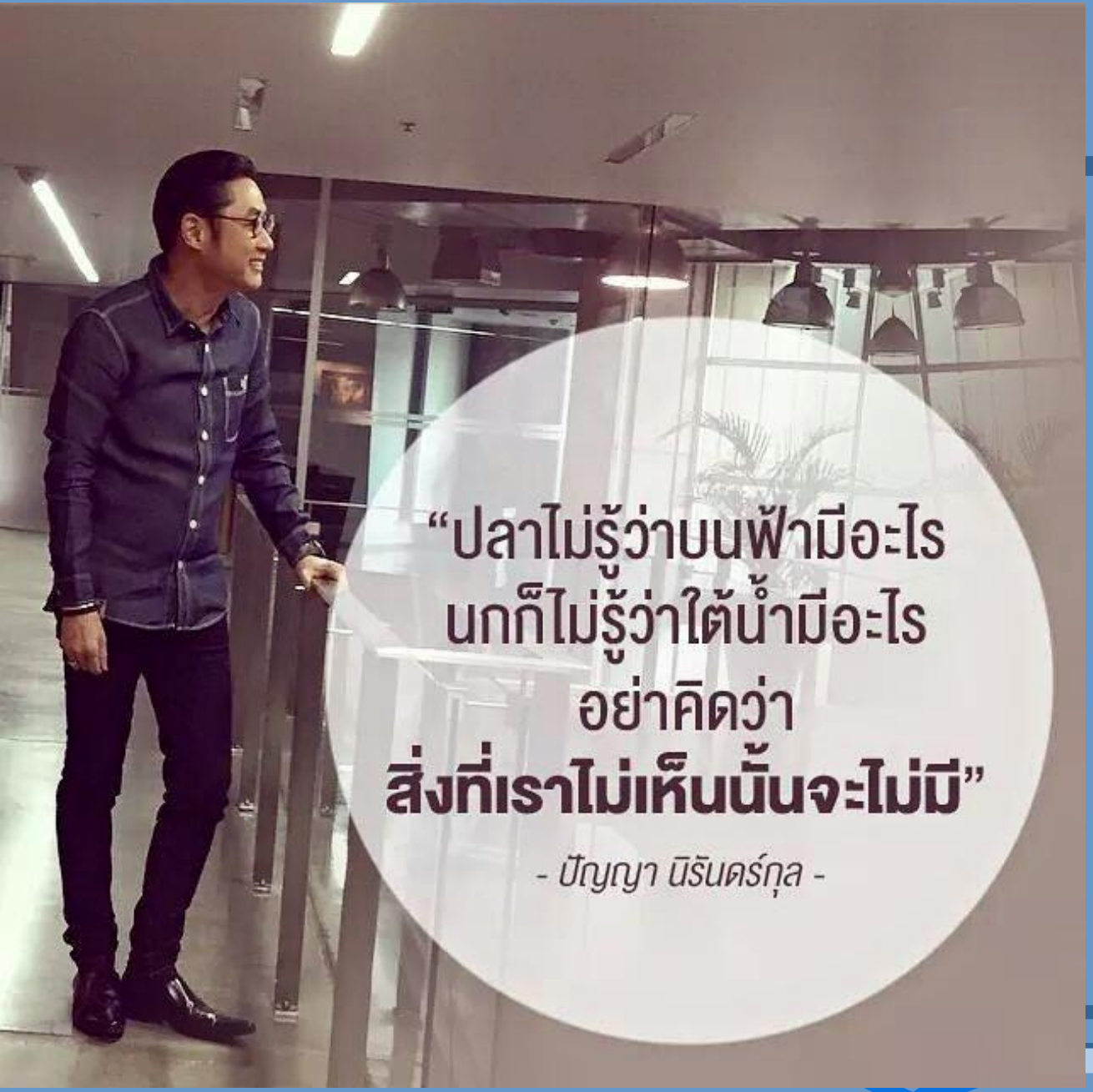


Criteria of SIRS : At least 2 of the following 4 criteria must be met:

1. **Temperature** or **Hypothermia**
2. **Heart rate**
3. **Respiratory rate**
4. **Leucozytosis** or **Leucopenia**

เมื่อการเรียนรู้เกิดขึ้นได้ทุกวัน
เมื่อการเปลี่ยนแปลงเกิดขึ้นได้ทุกวัน

- หา **alternative** ทางเลือกใหม่ ๆ อย่าคิดคนเดียว
- หาผู้รู้ที่นอกเหนือจากสิ่งแวดล้อมที่เราอยู่
- อย่าโทษตัวเองว่าไม่มีหัว **creative**
- จงมีวิริยะแต่อย่าขาดสติ
- ต้องขี้สงสัย ช่างเอ๊ะ แต่อย่าเอ๊ะแล้วปล่อยเลย
- ตั้ง **status** บ่อย ๆ รอคน **comment**


“ปลาไม่รู้ว่าบนฟ้ามีอะไร
นกก็ไม่รู้ว่าใต้น้ำมีอะไร
อย่าคิดว่า
สิ่งที่เราไม่เห็นนั้นจะไม่มี”
- ปัญญา นิรันดร์กุล -

…We can not predict the future but we can create it…