



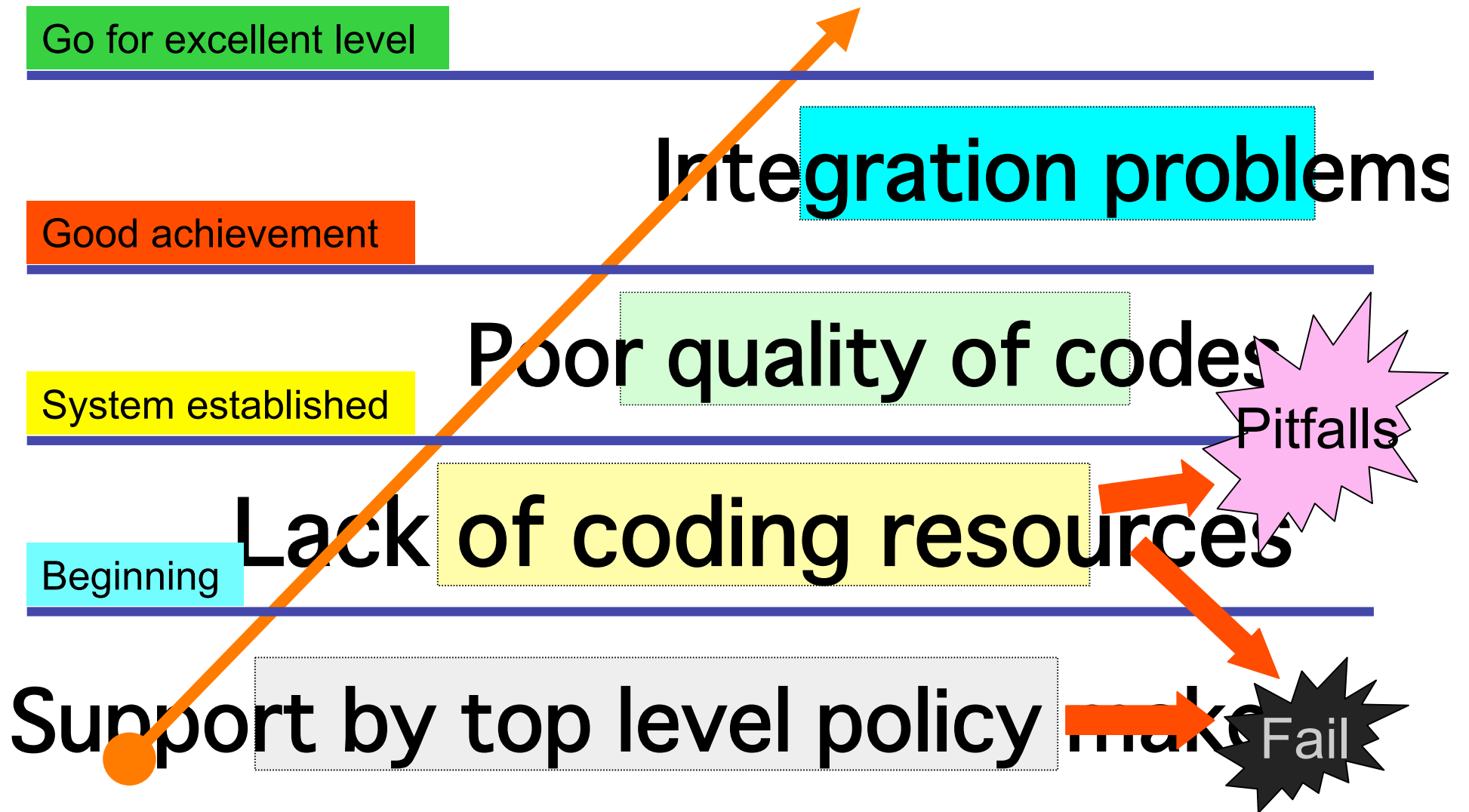
Road map for ICD-10 Implementation in developing country and pitfalls to avoid,

Thailand experience

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Level of implementation achievement and obstacles





Level 1 : Support by policy makers

- Beginning phrase preparation
 - Choose method of coding (single or multiple coding)
 - Choose level of specificity(3,4 or 5th digit)
 - Choose type of coding (central of distributed)
 - Choose scope of coding(mortality and morbidity – IPD, OPD)



Level 1 : Support by policy maker

- Make ICD-10 coding mandatory, at least in all government hospitals
- Ministry of Public Health announce and support ICD-10 codings in every public hospital(commitment)
- Establish ICD office to support,help and collect report using ICD coding
- Feedback on quantity and quality of ICD coded data from hospital

PAT datafile

PID	Hospital code	HN	Sex	Date of birth
2312170 829935	10357	450023451	M	23/06/1980

OPD datafile

Hospital code	HN	Date of visit	ICD-10	Type
10357	450023451	23/06/1980	L02.3	1
10357	450023451	23/06/1980	E11.9	2

IPD Admission

Hospital code	AN	Date admit	Date D/C
10357	47002341	23/06/1997	23/07/1997
10357	47002342	23/06/1997	27/06/1997

IPD ICD codes

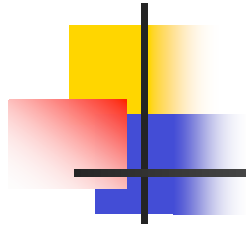
Hospital code	AN	ICD-10	Type
10357	4702341	K40.3	1
10357	4702341	I10	2
10357	4702341	T81.0	3
10357	4702341	Y83.8	5

Level 2 : Lack of ICD coding resources



- Coding resources
 - Coders
 - Coding books(ICD-10 vol.1,2,3)
 - ICD expert, trainers, resource persons
- Best practice to overcome this obstacle
 - Build army of coders (2,000 coders in Thailand)
 - Local Print 1000 coding books
 - Train small group of doctors to become ICD trainers, experts or resource person

Level 2 : Lack of ICD coding resources



- Easy way to overcome this obstacle
 - Try to use computer to do ICD-10 coding
 - Use local made diagnosis list for coding
 - Assign coding to be another job of doctors

- There will be many traps and pitfalls here!



Causes of falling into pitfall

- Misconcept about ICD
 - ICD is a simple coding system
 - Common list of ICD codes can be used instead of ICD bookset
 - Computer software can do automatic coding easily



Secrets of ICD-10

- 1. It is not a coding system but it is a classification system
 - You can not assign 1 code to 1 diagnosis term !!!!
 - For example :
 - What is(are) ICD-10 code(s) for diagnosis term "Intracerebral Hemorrhage" ?



Intracerebral hemorrhage codes

■ S06.3

for a patient who rode a motorcycle collision with a bus with frontal lobe hemorrhage

■ I61.0

for a 45 years old patient with underlying hypertension then found coma in his room, CT-scan revealed basal ganglion hemorrhage

■ O99.4

for a 25 years old pregnant woman who have got hemorrhage in her brain during giving birth to her baby(Pregnancy induced hypertersion)

■ P10.1

for a newborn baby with hemorrhage in brain found 1 days after difficulty delivery from breech position



Secrets of ICD-10

- 2. It has 4 or 5 sub classifications within 1 system

A,B Infection

C,D(part) Cancer

D50-D89 Hematology

E Endocrine

F Psychiatry

G Neuro

H Eye, Ear

I Cardiovascular

J Respiratory

K Digestive

L Skin

M Musculoskeletal

N Genitourinary

O Obstetrics

P Perinatal, neonatal

Q Congenital

R Signs, symptoms

S,T Trauma, Poisoning

V,W,X,Y External causes

**Z Prevention,
Promotion**



Secrets of ICD-10

**You can not use
“Google” technique
for ICD-10 coding !!!!!**



Secrets of ICD-10

You also can not use

Common list of diagnosis terms and code

- Paper list - Computer list

for ICD-10 coding !!!!!

Common list of Diagnosis and codes



- Hypertension I10
- Diabetes mellitus E14.9
- Intracerebral hemorrhage I61.9
- Cellulitis L03.9
- Motorcycle accident V29.99



Roles of doctors and coders

- Doctors responsibility
- Good quality of diagnosis, operation notes and any other doctor notes
 - Correctness
 - Completeness
 - Specificity
 - Timeliness



Roles of doctors and coders

- Coders responsibility
- Good quality of ICD-10 codes
 - Correctness
 - Completeness
 - Specificity
 - Sequencing
 - Timeliness



If a doctor want to code....

- He/she must write all the diagnosis words first(with good quality)
- Then if doctor have enough time left and want to code, then assign ICD-10 codes for every diagnosis
- If doctors code, they must follow coding rules and guidelines

ICD codings with rules follow

Diagnosis	Discharge summary	ICD-10-TM Code
Main condition	Cryptococcal meningitis	B20.5
Co-morbidity	AIDS	B45.1 G02.1
Complication		
Other diagnosis		
External cause		

Front sheet summary

Main condition	Rupture spleen
Comorbidity	1. Cerebral contusion 2. Fracture pelvis
Complication	Surgical wound infection
External cause of injury	Pedestrian collision by car

Front sheet summary - incorrect

Main condition	I50
Comorbidity	E14.9
Complication	N18
External cause of injury	



Secrets of ICD-10

- 3. You can not use ICD-10 instead of diagnostic term
 - Why?



One code may represent many terms

- A09 code
 - Diarrhea
 - Acute gastroenteritis
 - Enteritis
 - Colitis
 - etc..



Diagnosis less electronic medical records

- If the software was incorrectly designed, it may allow only the ICD-10 code to be input into the system database instead of diagnosis term
- Then you achieve objective of paperless OPD and also **diagnosis-less database**



Good documentation practice

- 4 Things for teaching common doctors in Thailand(1-3 hours)
- How to complete death certificate
- How to fill in front sheet summary
- How to use good diagnosis terms
- Important of good document



Good diagnosis term

- Must include all words to described
 - What is the name of diagnosis?
 - Where is the location of disease?
 - Which type of disease?
- Must be final diagnosis or near final
not sign, symptom or condition



Pneumonia

- Is bad diagnosis term will lead to J18.9
- Can be improved by changing to....

Which

Lobar

What

Pneumonia

Where

right upper lobe

J18.1



Laceration wound

- Is bad diagnosis term will lead to T14.1
- Can be improved by changing to....

Which

Laceration wound

What

S81.9

Where

left leg

Level of diagnosis terms



Factors influencing
choosing of level

Time at making
diagnosis

Level of hospital

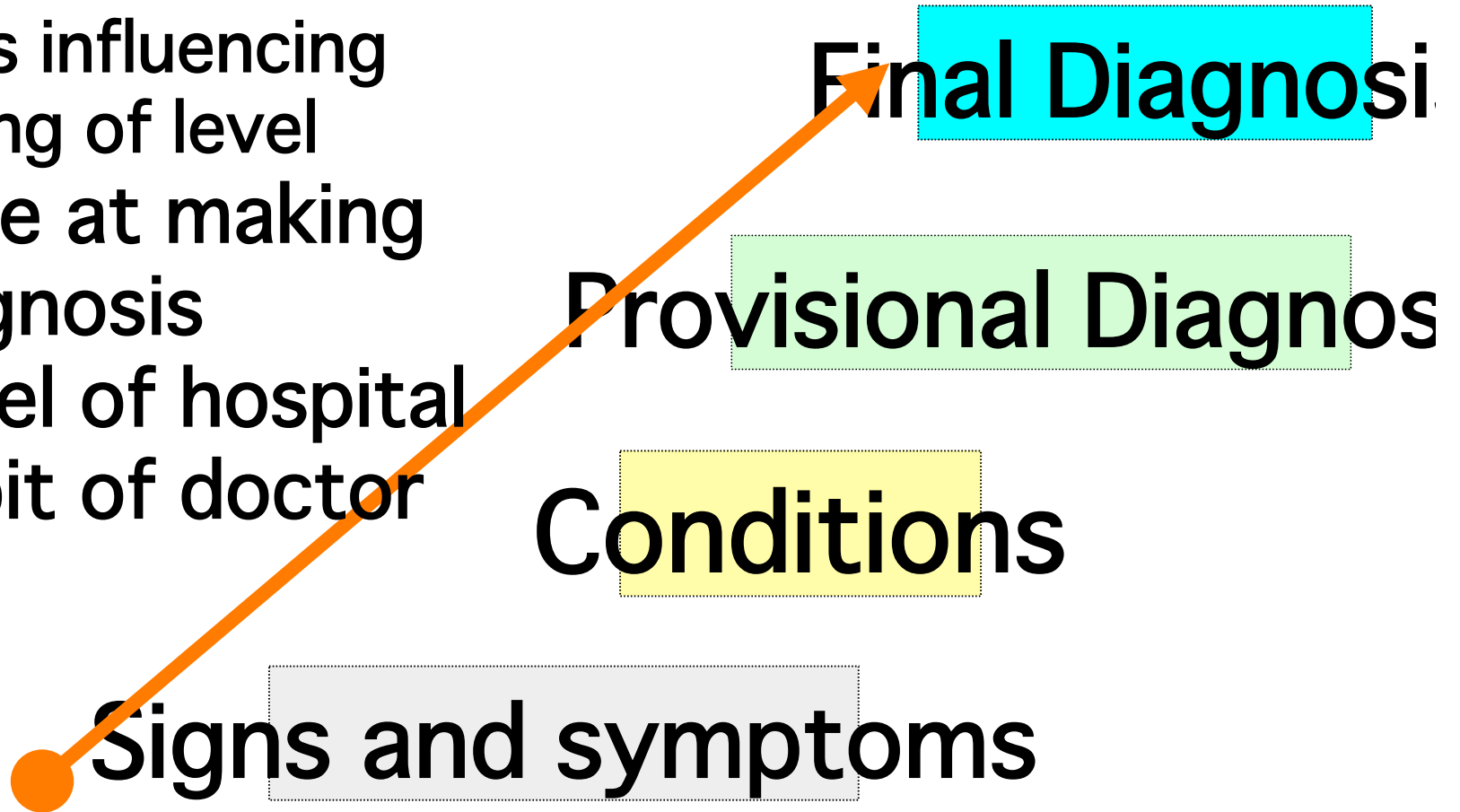
Habit of doctor

Final Diagnosis

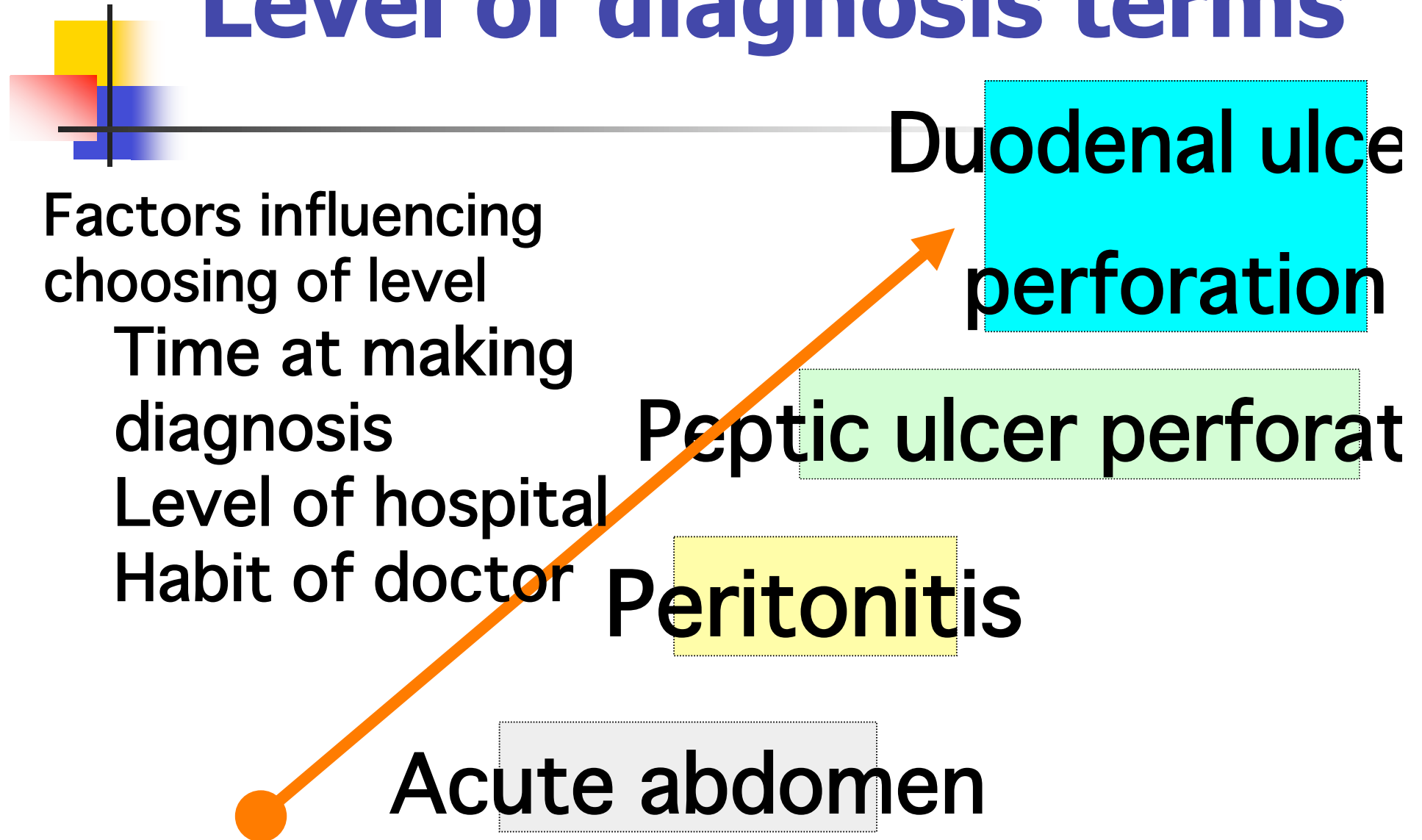
Provisional Diagnosis

Conditions

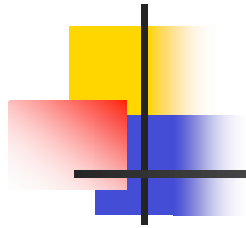
Signs and symptoms



Level of diagnosis terms



Level of diagnosis terms



Factors influencing
choosing of level

Time at making
diagnosis

Level of hospital

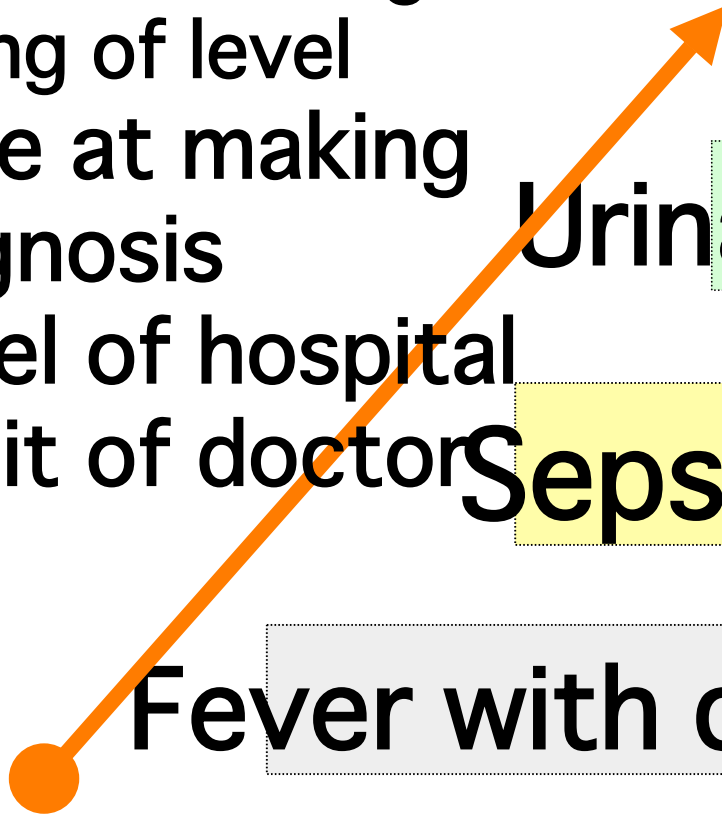
Habit of doctor

Acute pyelonephritis

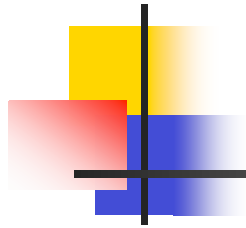
Urinary Tract Infection

Sepsis

Fever with chills



Level of diagnosis terms



Factors influencing
choosing of level

Time at making
diagnosis

Level of hospital

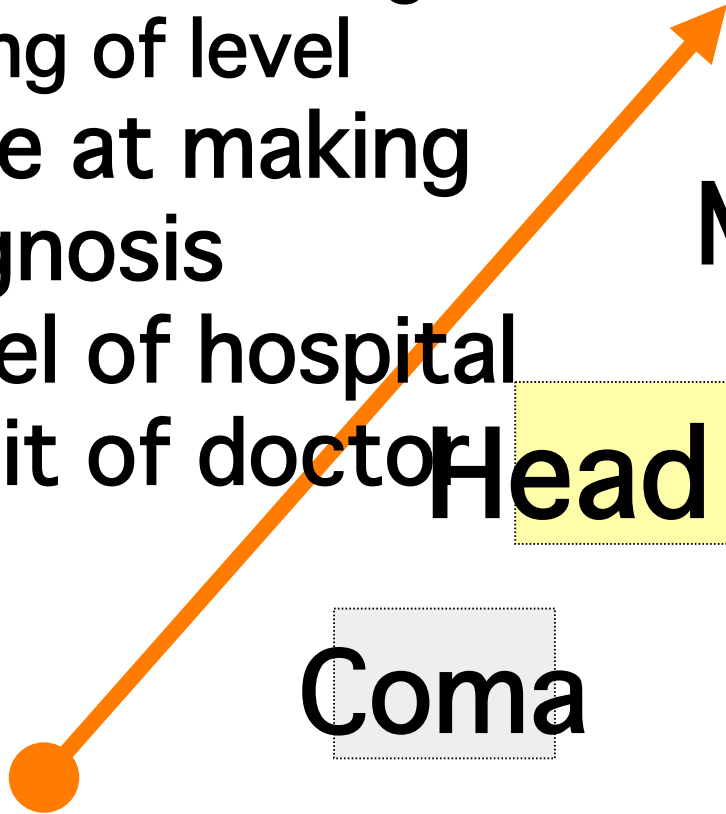
Habit of doctor

Cerebral concussion

Mild head injury

Head Injury

Coma





Secrets of ICD-10

- 3. Quality of code (a coder) selected depend on quality of diagnosis term
 - Bad diagnosis term cause bad quality code



Head injury S09.9

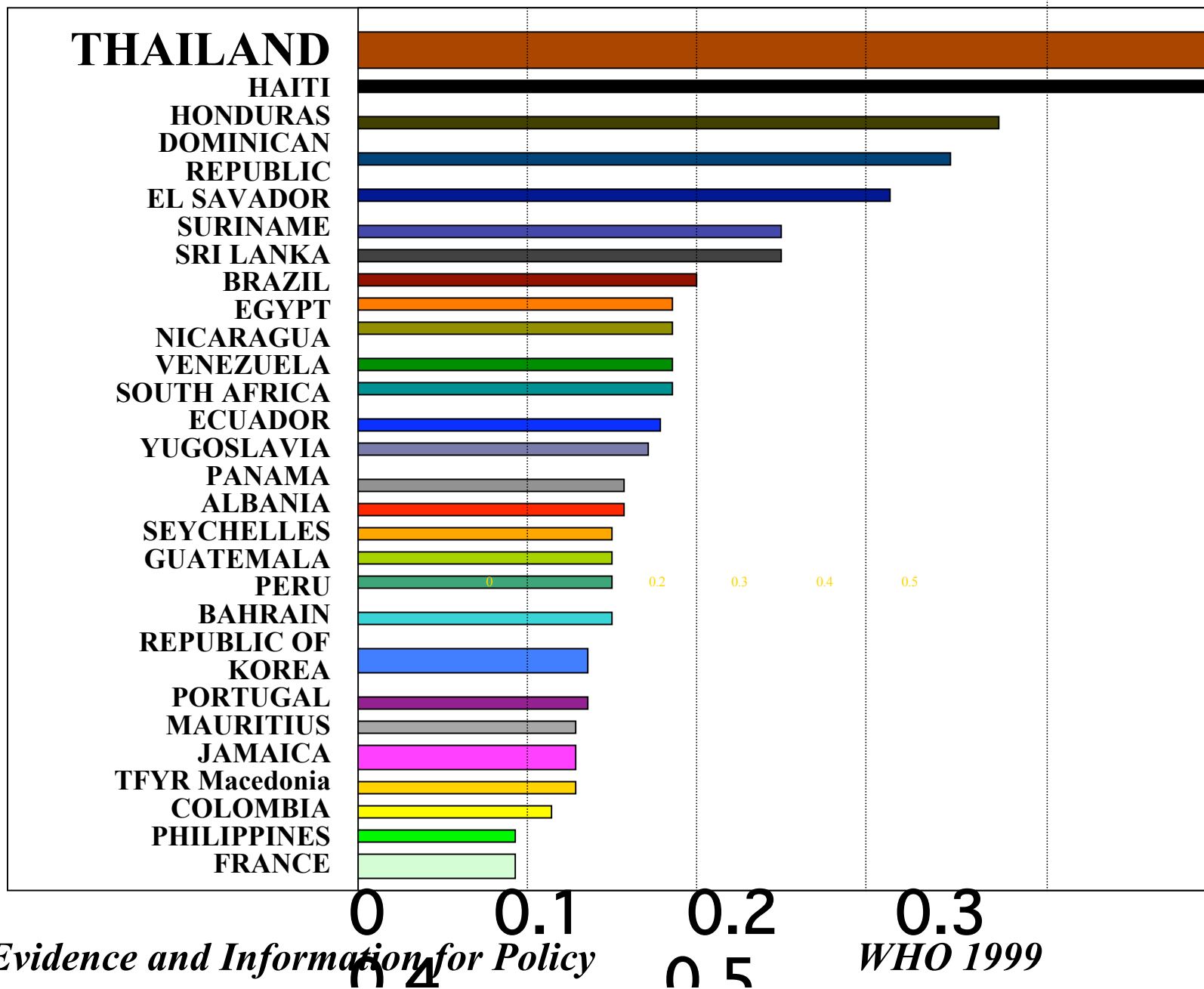
- **Scalp contusion**
S00.0
- **Scalp Laceration**
S01.0
- **Fracture skull**
S02.00
- **Subdural hematoma**
S06.00



Technics in teaching doctors

- Bring their interesting level to highest level within 5 mins
- Give them principal of every topics within 1-2 slides
- Use picture, graphic, symbol
- Give them lots of clinical case examples
- Add a little bit humour story

Proportion of ill-defined deaths





3 Principles of how to complete death certificate

1. Never use mode of death (Cardiac arrest etc.)
2. Record diseases in reverse chronological orders from I(a) to I(d)
3. State **underlying cause of**

Sequences of diseases before Dead

Immediate cause of dead

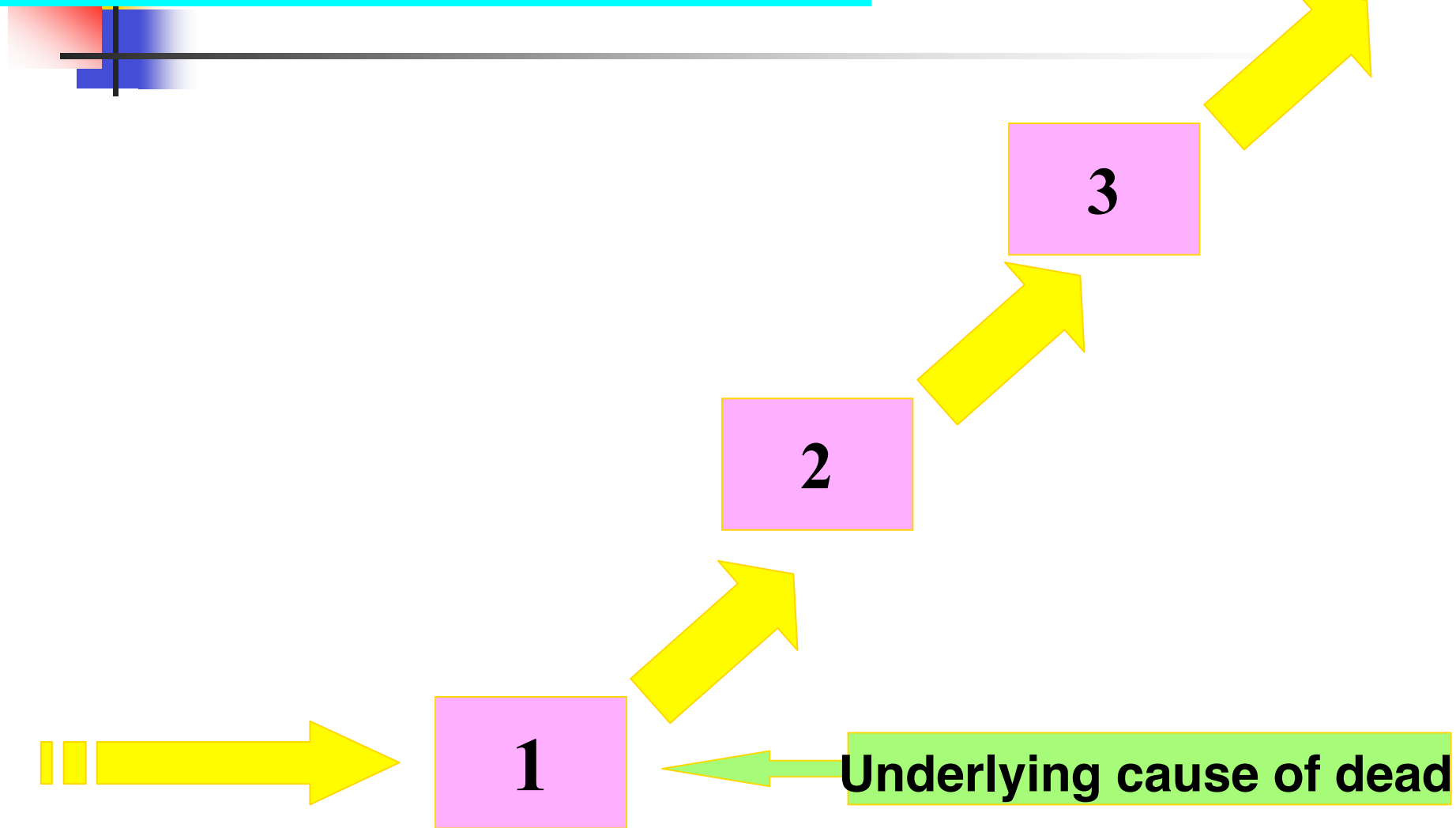


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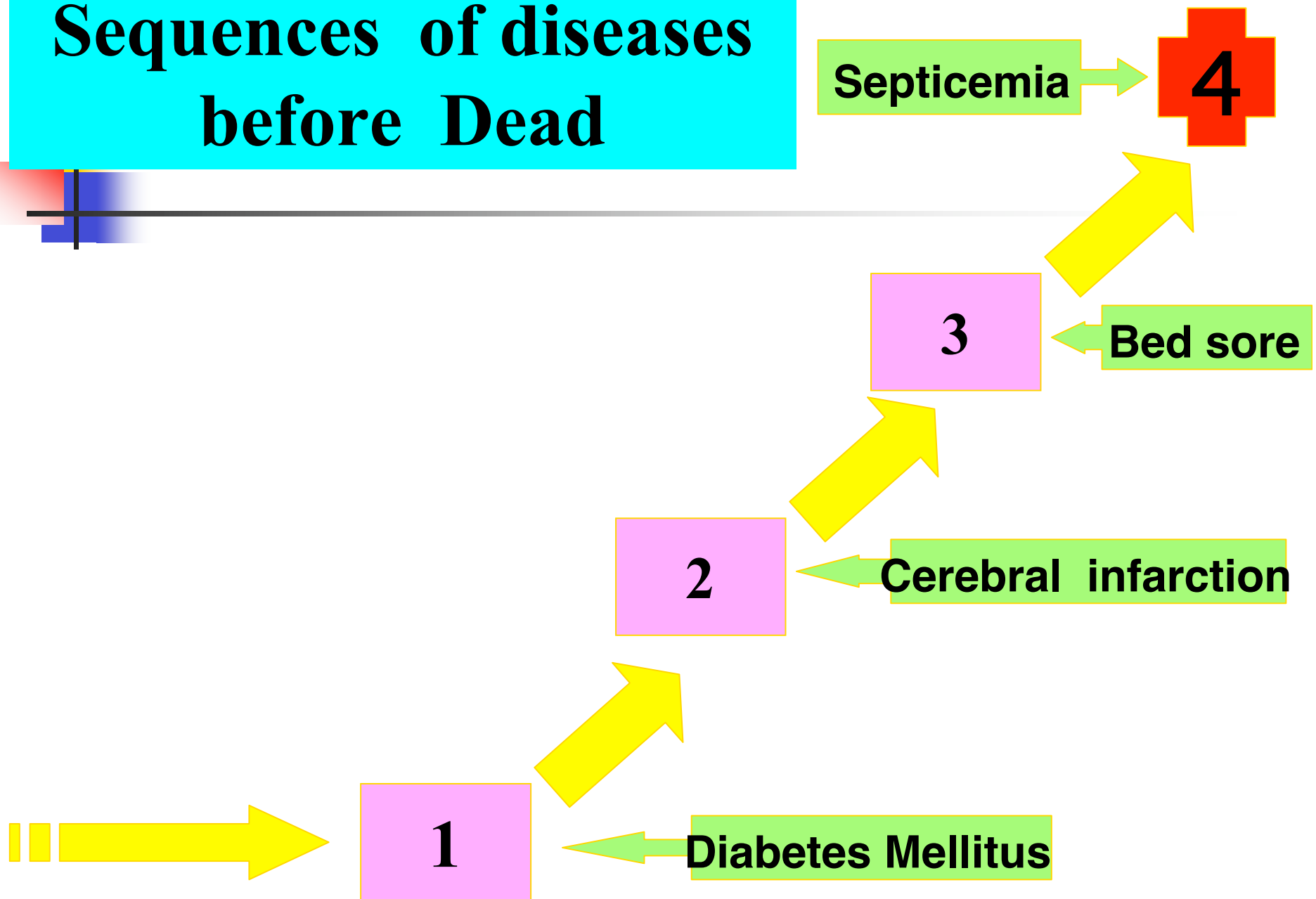
2

1

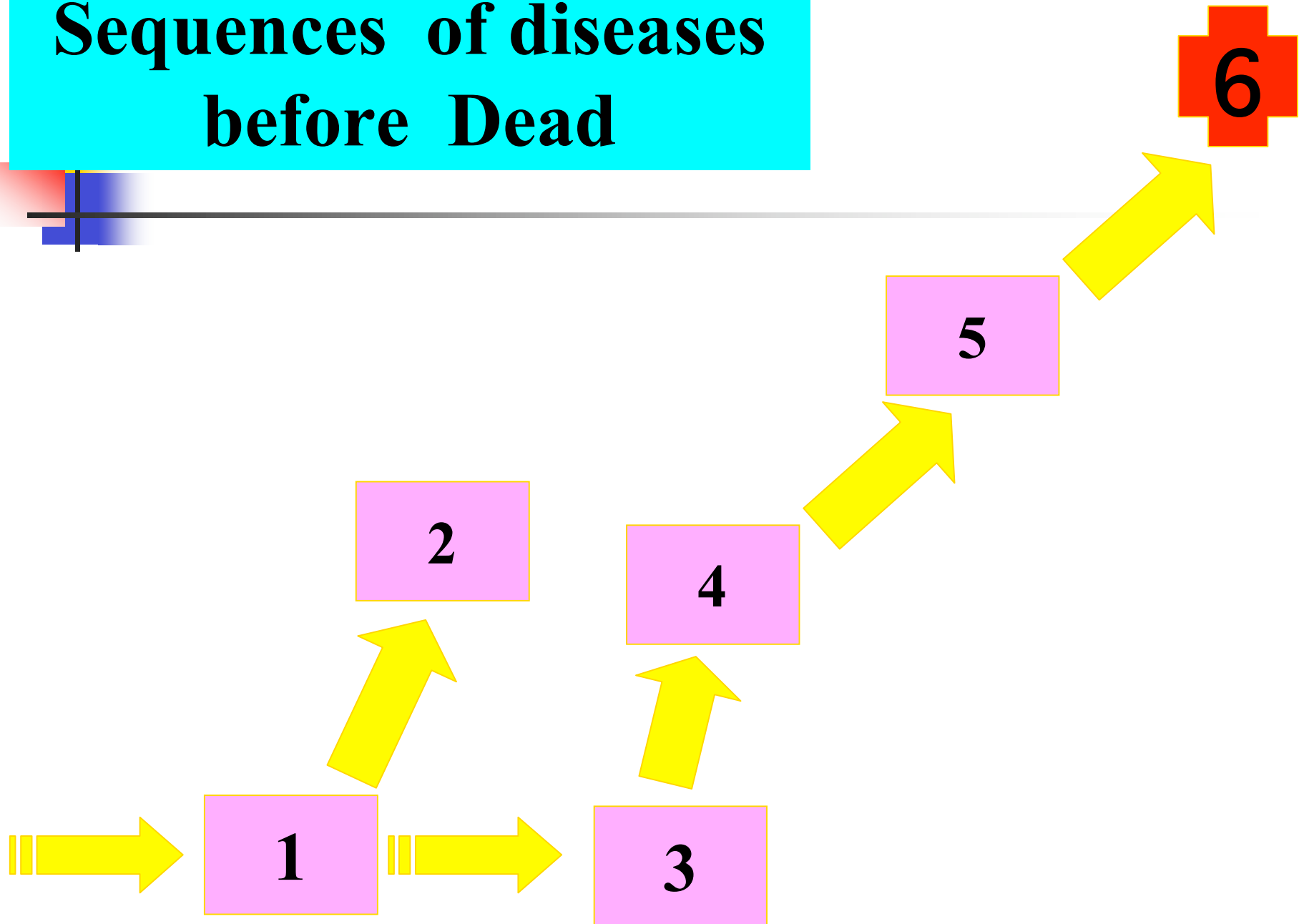
Underlying cause of dead



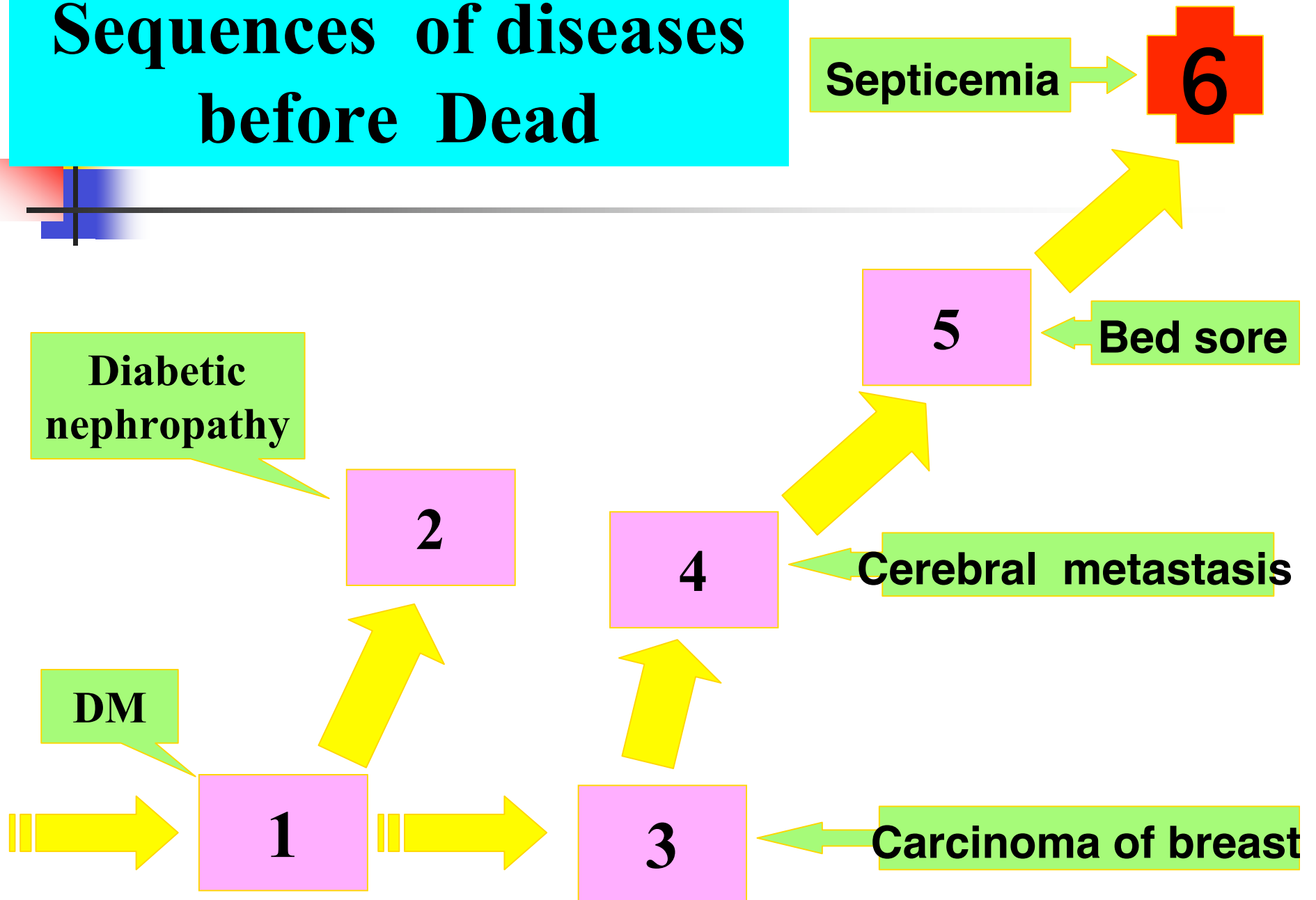
Sequences of diseases before Dead



Sequences of diseases before Dead



Sequences of diseases before Dead



Case example

■ シル 鮫 霽 ツ 犇 ヤケ 「鰓 チ カケケカル。テカツ

ケオ□ ケ

菽 霽 ル 鮭 ヨ。オムヌ

眇 キツ□ テヌイセコ

チユ、ヌメチエムケオ

モ 菽 隍 霽 ツテル 鮭 ヨ。オムヌ

キモシ 霽 オムエエ 霽 アキ

ヘア セコチユ Rupture spleen キモシ 霽 オムエ

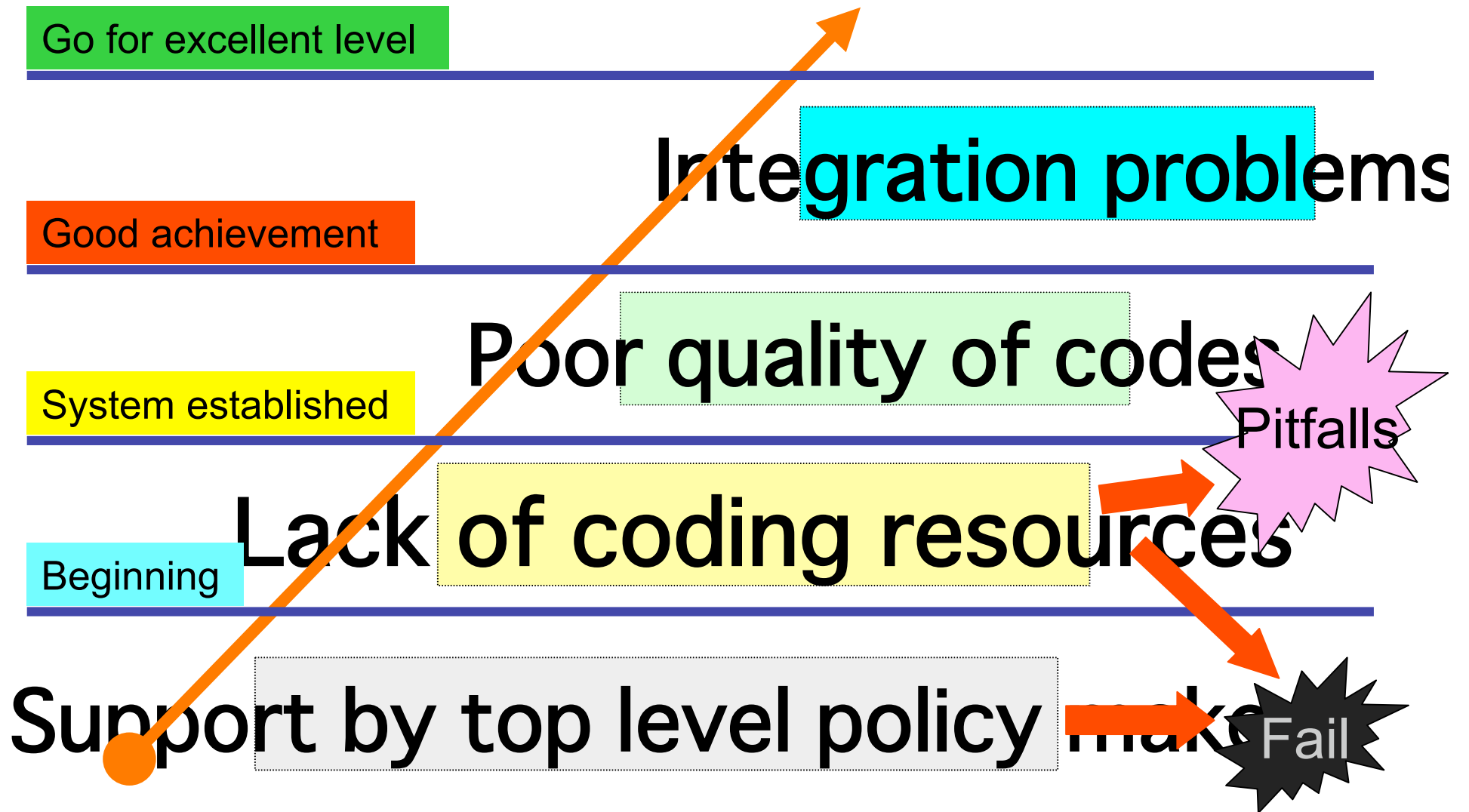
Splenectomy オテヌイ CT Scan Head

Left Central contusion left

with this front sheet summary?

Main condition	Car accident with rupture

Level of implementation achievement and obstacles

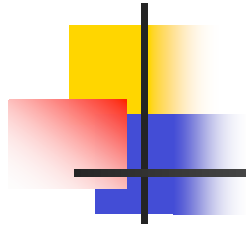




Thailand experiences

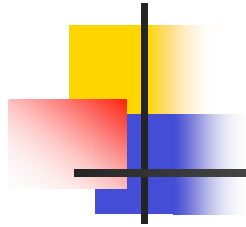
- Getting out of traps by Siriraj Hospital
- Increase number of coders from 3 to 90 in 2 years(2003-2004)
- Buy 80 more copy of ICD booksets
- Never use doctors and computers to do ICD coding anymore

Level 3 : Poor quality of codes



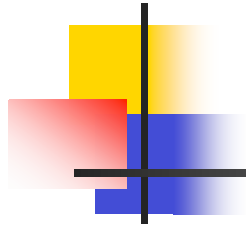
- Findings at this level
 - Bad quality of many medical records
 - Requirement for more specific codes...may lead to clinical modification
 - Suspicion from morbidity and mortality statistics users about quality of data

Level 3 : Poor quality of codes



- Ways to overcome this obstacle
 - Train doctors on good documentation technics
 - Do medical record quality audit
 - Do coding audit
- Using ICD codes for reimbursement can enhance overcoming this obstable but....
- You will find another poor quality codes..
Cheated codes

Level 4 : Integration problem



- How to integrated ICD-10 with other codes in health information system
 - Terminology
 - Procedure codes
 - ICF
- How to integrate new(updated change in ICD-10) codes into the system



Conclusion

- Developing countries should learn about ICD implementation by lessons provided by other country experiences
- Knowledge sharing should be one of the objectives of WHO-FIC Asia Pacific Network meeting