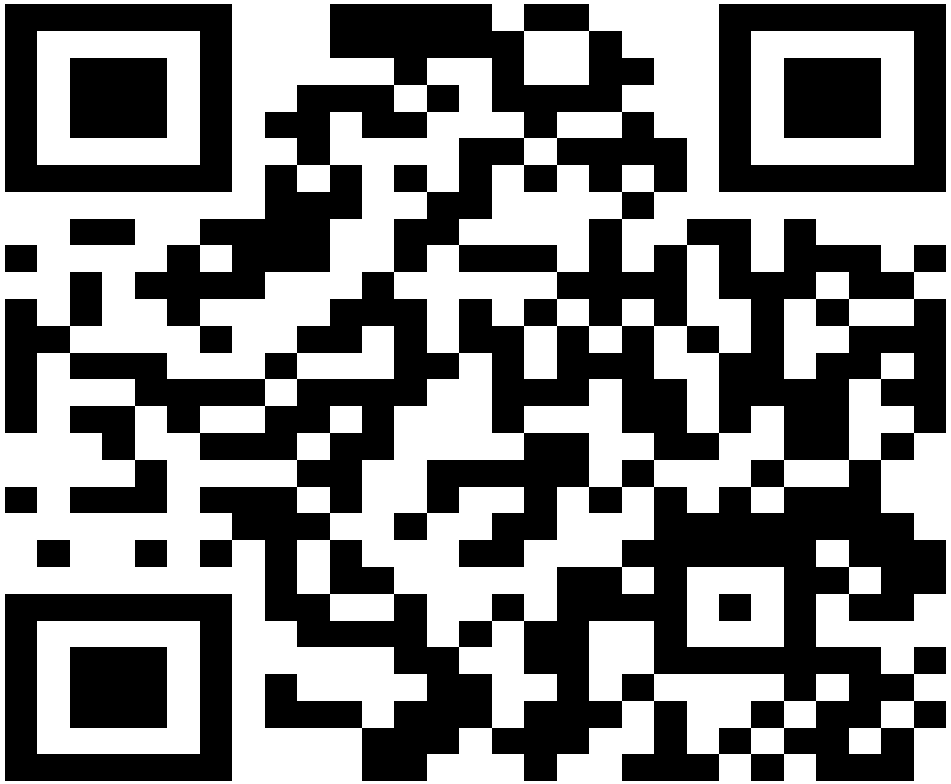
Load Slide



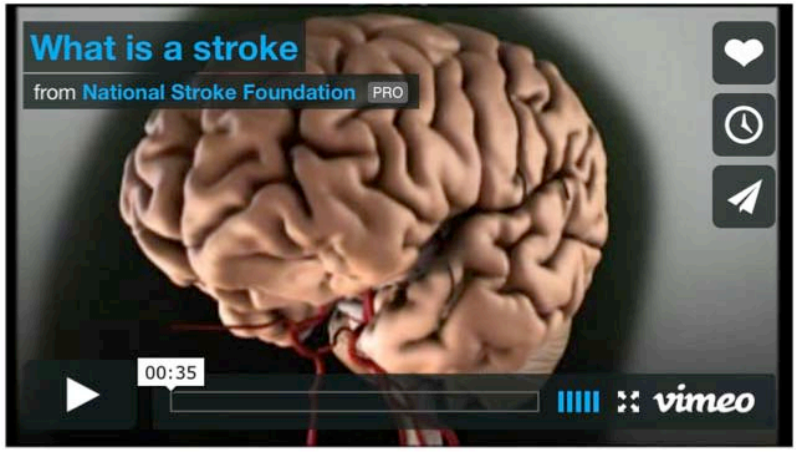
IMPACT OF STROKE SERVICE PLAN IN THAILAND AND NEAR FUTURE

Somchai Towanabut
Prasat Neurological Institute
Medical services Department
Ministry of Public Health
Bangkok Thailand
15/08/2017

What is a stroke?

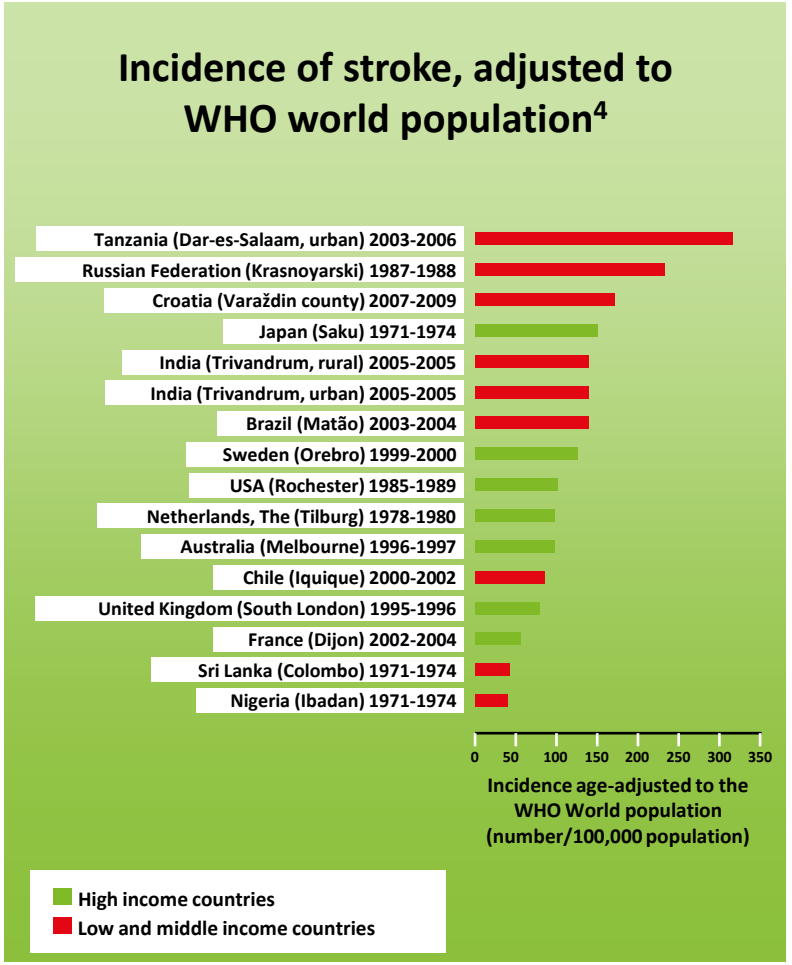
A STROKE IS A MEDICAL EMERGENCY!

- A stroke occurs when the blood flow to a part of the brain is interrupted
- Lack of blood supply means that not enough oxygen or nutrients reach the brain and the brain cells become damaged or permanently destroyed
- Depending on which part of the brain is affected, different symptoms can occur
- If not treated in time, a stroke can have emotional, physical or even fatal consequences



Is stroke common? Incidence of stroke

- In 2010, 16.9 million strokes occurred worldwide
- The annual number of strokes is increasing due to the expanding global population and increasing longevity[1,2]
  - This is despite a reduction in age-adjusted rate – probably due to education, prevention, diagnosis and management[1,2]
- The majority of strokes (69%) occur in low- and middle-income countries[3]
  - Incidence, type and outcome of stroke varies between countries[2,4]



1. Hankey G. *Lancet* 2013;1:e239-e240.
2. Krishnamurthi R, et al. *Lancet Glob Health* 2013;1:e259-281.
3. Feigin V, et al. *Lancet* 2014;383:245-255.
4. Thrift A. *Int J Stroke* 2014;9:6-18.

Epidemiology

In the US[1]

- 795,000 strokes/year
- Prevalence 2.8%
- Estimated cost 312.6 billion US-$

In Europe[2,3]

- 1.1million deaths (8%)/year
- Estimated cost 64.1 billion €
  (€38 billion in the EU)

In China[4-6]

- Prevalence 1.6% (rural) – 9.3% (urban)
- Causes approx. 29% of deaths/year

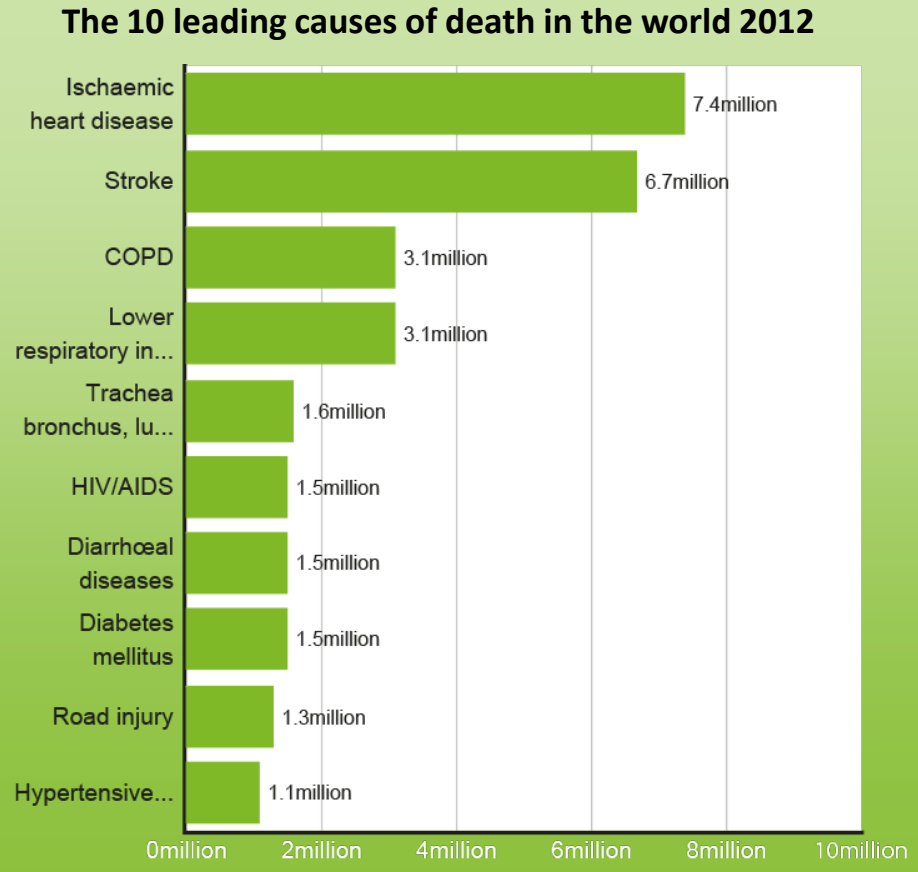
Stroke is the third most common cause of death in developed countries, exceeded only by coronary heart disease and cancer

1. AHA and Stroke Statistics Writing Group. *Circulation* 2013;127:e6-e245.
2. Nichols M, et al, Eur Heart Network & Eur Soc Cardiol. *Cardiovasc Dis Stats* 2012.
3. Gustavsson A, et al. *Eur Neurpsychopharmacol* 2011;21:718-779. 4. Sun Z, et al. *Int J Stroke* 2013;701-706.
5. Ferri CP, et al. *J Neurol Neurosurg Psychiatry* 2011;82:1074-1082. 6. Ferri CP, et al. *PLoS Med* 2012;9:ePub.

Global burden of stroke
Mortality

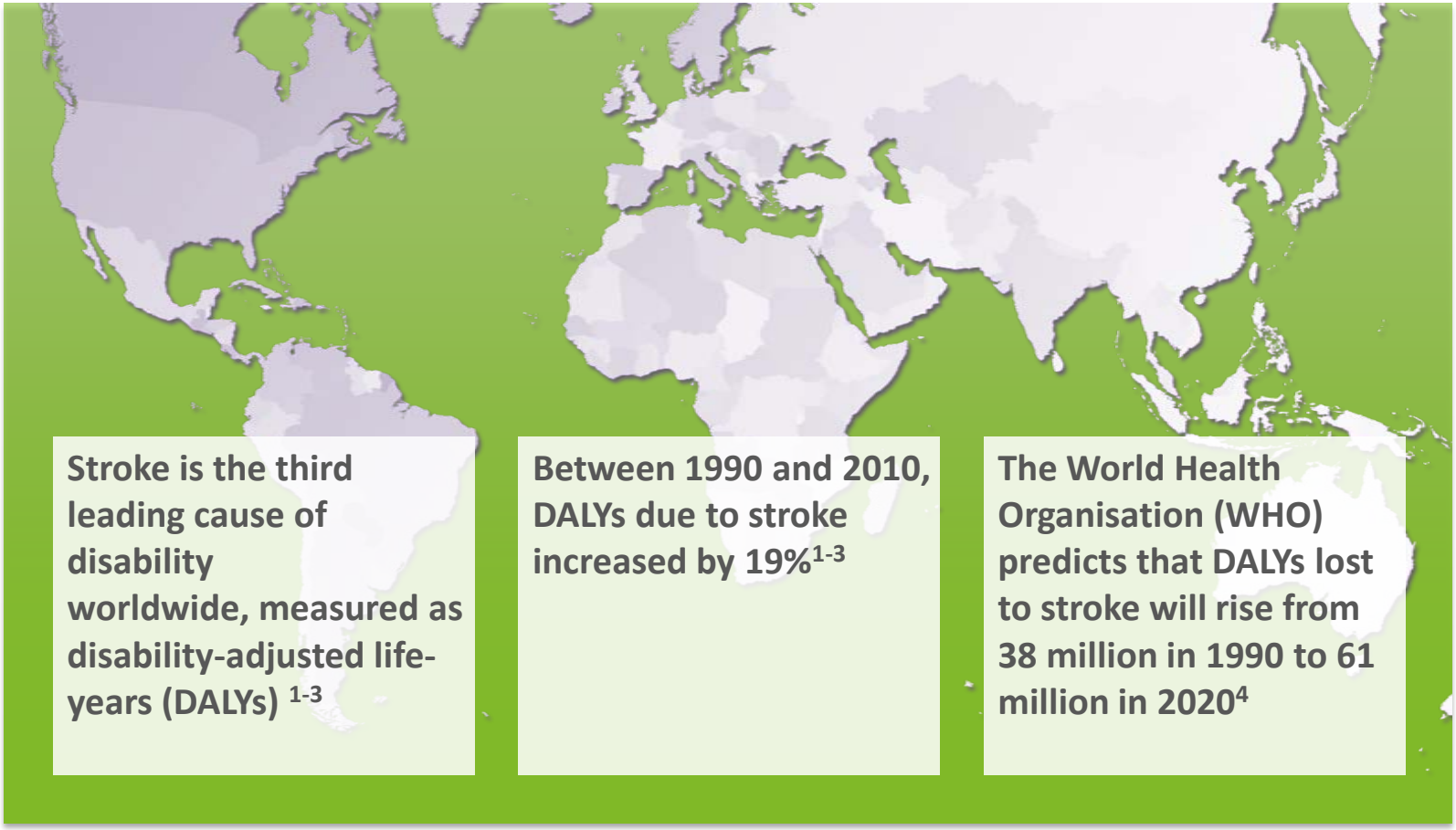
Stroke is the second most common cause of death in the world[1,2]

Approximately one third of patients with a new stroke will die[3]



1.Lozano R, et al. *Lancet* 2012;380:2095-2128.
2.Hankey G. *Lancet* 2013;1:e239-e240.
3.Roger VL, et al. *Circulation* 2011;123:e18-e209.

Global burden of stroke
Disability & cost of stroke



Stroke is the third leading cause of disability worldwide, measured as disability-adjusted life-years (DALYs) [1-3]

Between 1990 and 2010, DALYs due to stroke increased by 19%[1-3]

The World Health Organisation (WHO) predicts that DALYs lost to stroke will rise from 38 million in 1990 to 61 million in 2020[4]

1.Lozano R, et al. *Lancet* 2012;380:2095-2128.
2.Murray C, et al. *Lancet* 2012;380:2197-2223.
3.Hankey G. *Lancet* 2013;1:e239-e240.
4.WHO. CVD Atlas 2004.

How are strokes classified?

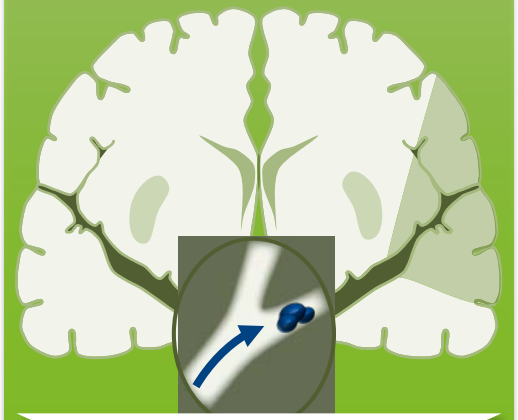
A stroke can be due to a blockage in one of the arteries (ischaemic stroke) or bleeding in the brain (haemorrhagic stroke)

Transient ischaemic attack (TIA)

The blood supply to an area of the brain is temporarily interrupted but is restored within 60 min and the patient returns to normal

Ischaemic stroke

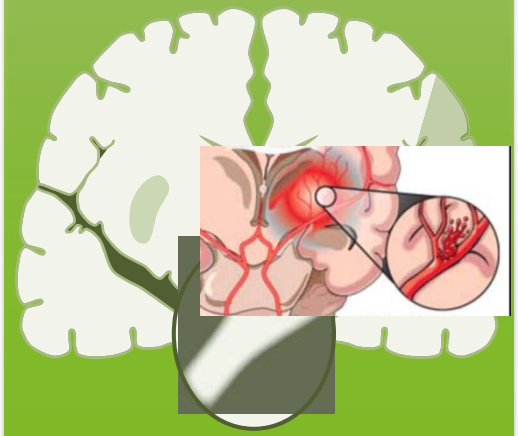
The blood supply to an area of the brain is completely blocked, causing tissue death and neurological damage



ISCHAEMIC STROKE IS THE COMMONEST FORM OF STROKE

Haemorrhagic stroke

Bleeding in the brain can prevent the normal flow of blood to the tissue beyond the damage and causes neurological symptoms

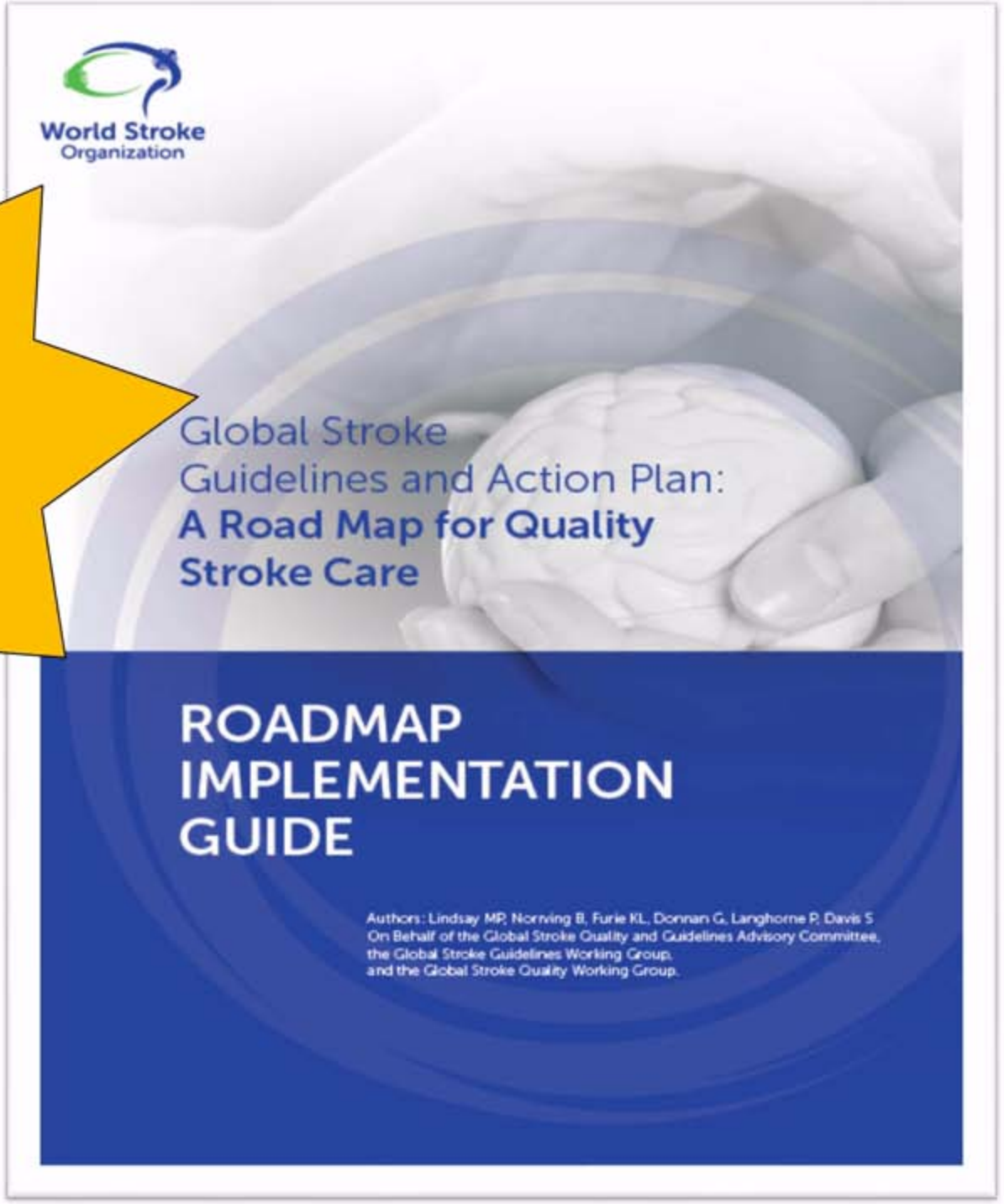


World Stroke Organization

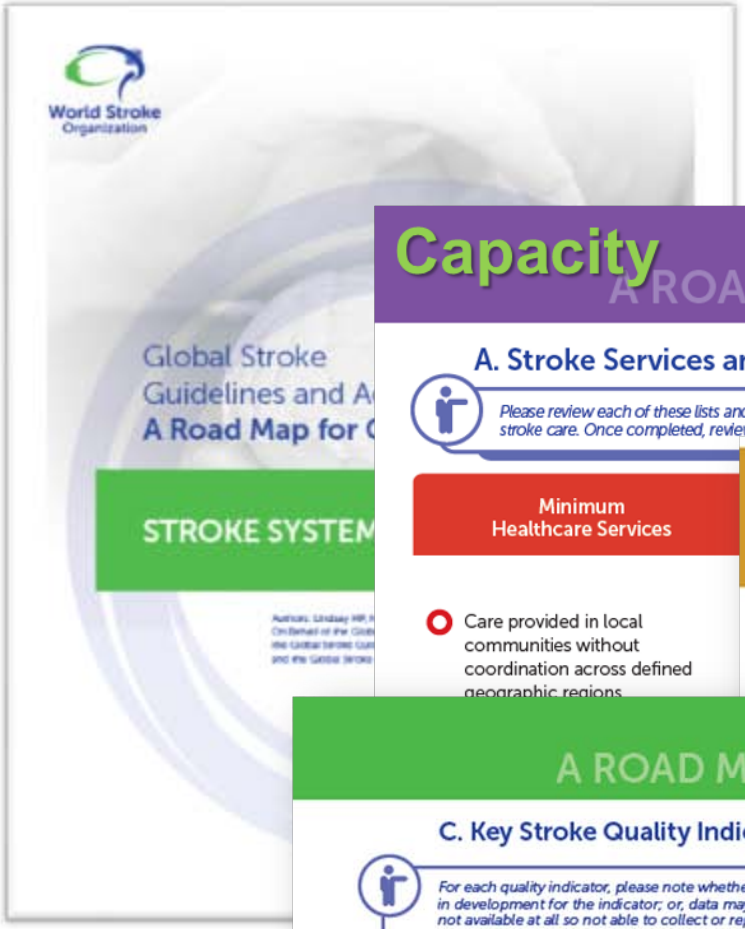
Canadian Stroke Best Practices

Implementation

Released October 2016



COMPONENTS



Capacity

PREHOSPITAL AND EMERGENCY CARE

A ROAD MAP FOR QUALITY STROKE CARE

A. Stroke Services and Resource Availability

Please review each of these lists and tick all services and resources that you currently have in place and available for providing stroke care. Once completed, review your responses to determine which category of stroke services you most closely fit into.

Minimum Healthcare Services

- Care provided in local communities without coordination across defined geographic regions

Practice

B. Core Stroke Care Recommendations

For each best practice recommendation, indicate with a tick whether the described practice is in place as a routine part of care; in ...rce may be available but it is not currently part of stroke ...thin your facilities, therefore not possible to implement.

...rting Evidence	Self Assessment
...r stroke)	
...dence level: A	☐ In place ☐ In development ☐ Not implemented ☐ Not available
...dence level: B	☐ In place ☐ In development ☐ Not implemented ☐ Not available

STROKE SYSTEM DEVELOPMENT

A ROAD MAP FOR QUALITY STROKE CARE

C. Key Stroke Quality Indicators

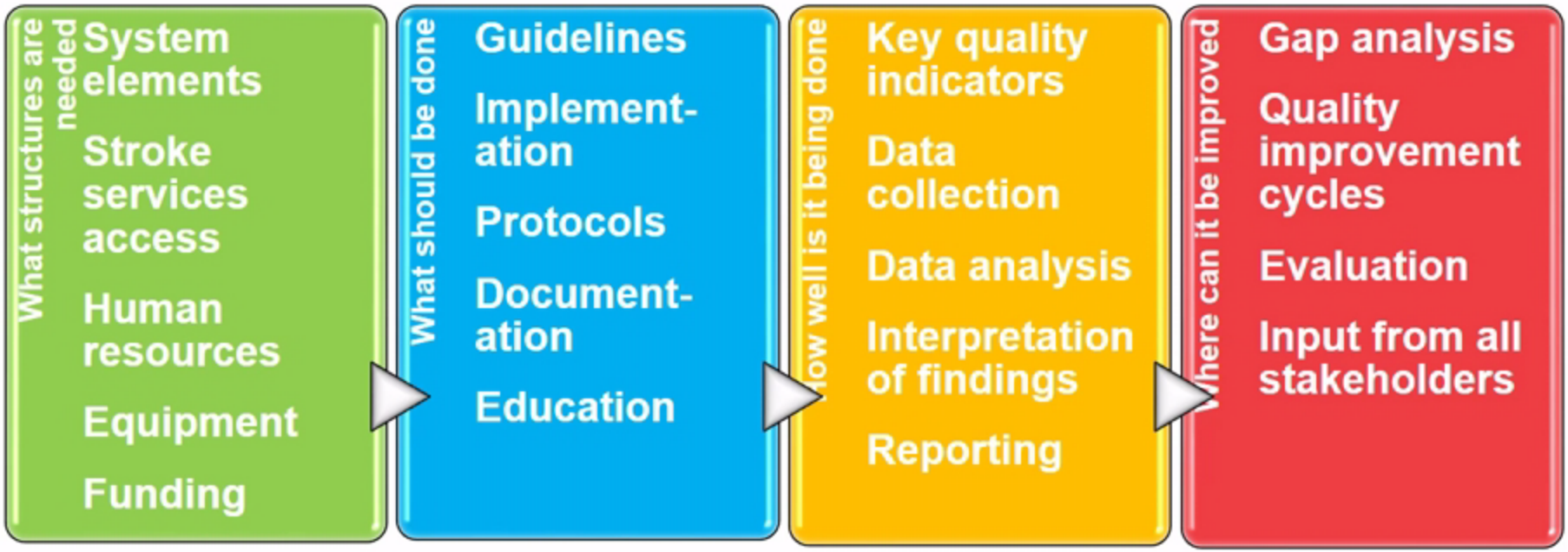
For each quality indicator, please note whether data is being actively and routinely collected; or, data collection processes are in development for the indicator; or, data may be available but it is not currently being collected; or, data for this indicator is not available at all so not able to collect or report it. Please tick the most appropriate box for each indicator.

Performance Measures	Numerator	Denominator	Self Assessment
Health System Monitoring			
1. Stroke incidence rates adjusted for age and sex in the population.	Total number of stroke cases in a population (stratified by stroke type).	Total population based on census information within a given time frame.	☐ Data collected ☐ In development ☐ Data not collected ☐ Data not available
2.a Prevalence of stroke risk factors in the population.	Total number of people in a population who report or are documented to have one or more stroke risk factors (high blood pressure, elevated cholesterol, diabetes, atrial fibrillation, family history, inactive life style, obesity or over weight, etc) (stratified by stroke type and type of risk factor).	Total population based on census information within a given time frame.	☐ Data collected ☐ In development ☐ Data not collected ☐ Data not available

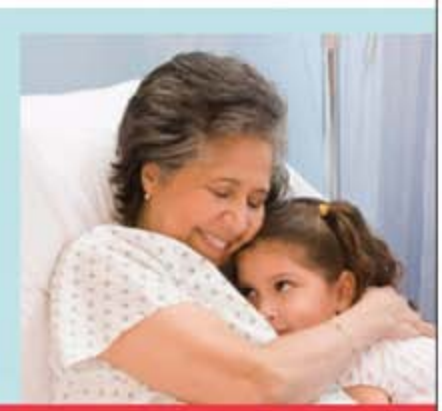
Quality

Roadmap Rationale

Mortality and morbidity from stroke could be significantly reduced through organized stroke care, including the implementation of evidence-based clinical practice guidelines and adoption of a continuous quality improvement philosophy and programs.



Supporting People Living with Stroke



Taking Charge of Your Stroke Recovery

A SURVIVOR'S GUIDE TO THE CANADIAN STROKE BEST PRACTICE RECOMMENDATIONS

BE INFORMED | BE INVOLVED | TAKE ACTION

CANADIAN

LIFE after STROKE

Blog | About | Stroke | Recovery and Rehabilitation | Community

my Heart&Stroke Blood Pressure ACTION PLAN

POST-STROKE Checklist

HEART&STROKE FOUNDATION | CANADIAN Stroke BEST PRACTICE RECOMMENDATIONS

Developed by the Global Stroke Community Advisory Panel (2012), endorsed by the World Stroke Organization, adapted by the Heart and Stroke Foundation Canadian Stroke Best Practice Recommendations development team (2014)

Patient Name: Date Completed:

COMPLETED BY: HEALTHCARE PROVIDER(S) PATIENT FAMILY MEMBER(S) OTHER

SINCE YOUR STROKE OR LAST ASSESSMENT

1 Secondary Prevention

Have you received medical advice on health-related lifestyle changes or medications to prevent another stroke?

NO: Refer patient to primary care providers for risk factor assessment and treatment if appropriate, or secondary stroke prevention services.

YES: Continue to monitor progress

2 Activities of Daily Living (ADL)

Are you finding it more difficult to take care of yourself?

NO: Continue to monitor progress

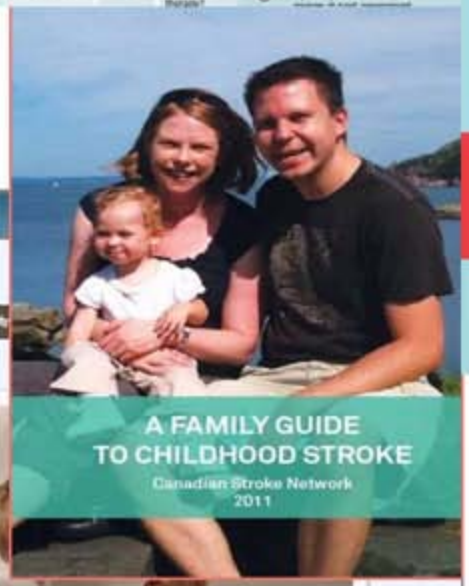
YES: Do you have difficulty ○ dressing, washing, or bathing? ○ preparing hot drinks or meals? ○ getting outside? If Yes to any, consider referral to home care services, appropriate therapist, secondary stroke prevention services

3 Mobility

Are you finding it more difficult to walk or move safely (i.e., from bed to chair)?

NO: Continue to monitor progress

YES: Are you continuing to receive rehabilitation therapy? ○ No: Consider referral to home care services, appropriate therapist, secondary stroke prevention services ○ Yes: Update patient record;



A FAMILY GUIDE TO CHILDHOOD STROKE

Canadian Stroke Network 2011

Your Stroke Journey

A guide for people living with stroke

HEART&STROKE FOUNDATION | CANADIAN Stroke BEST PRACTICE RECOMMENDATIONS

Heart&Stroke Risk ASSESSMENT

STROKE ENGINE

STROKE IN YOUNG ADULTS

A RESOURCE FOR PATIENTS AND FAMILIES

HEART&STROKE FOUNDATION | UofT

MY Heart&Stroke Healthy WEIGHT ACTION PLAN

It's for life.

Sodium it's everywhere!

Get the facts

FRAMEWORK:
TO BE USED BY ORGANIZATIONS AND GOVERNMENT IN PLANNING THE RANGE OF SERVICES REQUIRED ACROSS THE CONTINUUM

GLOBAL STROKE ACTION PLAN FRAMEWORK

Fig. 2 WSO Stroke Services Framework.
*Prevention of complications – includes venous thrombo-embolism, contractures, pressure ulcers, dysphagia and swallowing, infection, malnutrition and dehydration, falls.

About stroke

Stroke happens when the blood supply to part of the brain is cut off. Without blood, brain cells can be damaged or die. This damage can have different effects depending on where it happens in the brain. It can affect a person's body, mobility and speech, as well as how they think and feel.

17M strokes

6.5M deaths

26M survivors

Stroke is a leading cause of death and disability globally. Stroke can happen to anyone at any age. It affects everyone: survivors, family and friends, workplaces and communities – but strokes are preventable. We all have a reason to prevent stroke – what's yours?

one voice
One World Voice for Stroke

worldstrokecampaign.org | @WStrokeCampaign | #WorldStrokeDay

facebook.com/worldstrokecampaign

World Stroke Organization

STROKE IS PREVENTABLE

90% of strokes are linked to 10 key risk factors.

If you have diabetes, heart problems or history of stroke/TIA talk to your doctor about stroke risk and preventive treatments. Here are some actions we can all take to reduce the risk of stroke.

KNOW THE RISKS

1. **CONTROL HIGH BLOOD PRESSURE**
   Hypertension is linked to almost half of all strokes. Knowing and controlling your blood pressure with lifestyle change, or medication will reduce your risk of stroke.

2. **DO MODERATE EXERCISE 5 TIMES A WEEK**
   Over a third of all strokes happen to people who don't take regular exercise. Moderate exercise five times a week will reduce your risk of stroke.

3. **EAT A HEALTHY, BALANCED DIET**
   Almost a quarter of strokes are linked to poor diet, in particular low consumption of fruit and vegetables. Eating five or more portions of fruit and vegetables will reduce your risk of stroke.

4. **REDUCE YOUR CHOLESTEROL**
   More than 1 in 4 strokes are linked to high levels of 'bad' (LDL) cholesterol. Eating low saturated, non-hydrogenated fats instead of saturated fats will reduce your stroke risk. If you can't maintain a healthy cholesterol level with diet alone, talk to your doctor about treatments that could help.

5. **MAINTAIN A HEALTHY BMI OR WAIST TO HIP RATIO**
   Almost 1 in 5 strokes are linked to obesity. A good way to know if you need to lose weight is to divide your waist measurement by your hip measurement. If the number is over 0.9 (man) and 0.85 (woman) your weight is putting you at higher risk of stroke and you would benefit from losing weight.

6. **STOP SMOKING AND AVOID SECOND-HAND EXPOSURE**
   More than 1 in 10 strokes are linked to smoking. Stopping smoking will reduce your risk of stroke. Getting help to quit increases your chances of success.

7. **REDUCE ALCOHOL INTAKE**
   Over 1 million strokes each year are linked to excessive alcohol consumption. Reducing our alcohol intake to two units of alcohol a day for men and one for women will help to reduce your stroke risk.

8. **IDENTIFY AND TREAT ATRIAL FIBRILLATION**
   An irregular heartbeat or other heart condition is linked to 9% of strokes. Talk to your doctor about possible treatments to reduce your risk.

9. **DIABETES**
   As well as sharing many of the same risk factors, diabetes increases the risk of stroke. Reducing your risk of diabetes will reduce your risk of stroke. If you have diabetes, talk to your doctor about treatments to reduce your risk of stroke.

10. **INCOME AND EDUCATION**
    Across and within countries low levels of income education are linked to stroke. Government policies that address poverty and improve equitable access to healthcare and education will have a positive impact on stroke and other non-communicable diseases.

What can you do
to prevent stroke?

INDIVIDUALS

1. Find out more about your individual stroke risk using a clinically approved stroke risk assessment tool, such as the free WSO endorsed Stroke Riskometer app.
2. Get your blood pressure checked.
3. Talk to a healthcare practitioner about steps you can take to reduce your risk prevent stroke. Take steps to implement positive lifestyle changes and reduce your exposure to air pollution.
4. Get support. Talk to family and friends about your reasons for preventing stroke and identify ways you can help each other make positive lifestyle changes.

HEALTH PRACTITIONERS

1. Understand how medical conditions and behaviours impact on patient stroke risks. A third of strokes happen to patients with a history of stroke/TIA. Ensure patients with a history of stroke, or cardiovascular conditions are offered preventive treatment. Take steps to control hypertension and atrial fibrillation in your patients.
2. Offer blood pressure and pulse checks to your patients and communities.
3. Provide information and support to patients and communities and help them take steps that would reduce their lifetime risk of stroke.
4. Advocate for equitable access to healthcare and policies that promote community health.

GOVERNMENTS AND HEALTH CARE SYSTEM DECISION MAKERS

1. Implement population wide prevention strategies that address the economic, environmental and contributors to stroke.
2. Remove financial barriers to prevention screening and take a leadership role in developing sustainable, low cost risk assessment and management strategies.
3. Work in partnership with healthcare, researchers, stroke survivors and support organizations to develop and deliver effective national, regional and global stroke prevention strategies.

Stroke in Thailand

-Incidence 201-483/100,000 (35yrs)*

(193,200 cases)

-Prevalence 1880/100,000 (1.88%)* M:F 2.1:1 (752,000 cases)

-Mortality rate *

M 94/100,000 F 72 /100,000

(37,600+28,800=66,400 cases)

Thai Epidemiology stroke Study ,TES. Study 2004-6 (2003-2015)

Total number of major NCDs

ation 2009.

Burden of Disease

การสูญเสียปีสุขภาวะ

Disability-Adjusted Life Year : DALY

รายงานภาระโรคและการบาดเจ็บของประชากรไทย พ.ศ. 2556

10 leading causes of death in Thailand 2013

58,000

male	death('000)	% of Total death	death('000)	% of Total death	Female
1.Stroke	29	11.1	14.5	29	Stroke
2.Ischemic heart dis.	20	7.7	8.8	18	Ischemic heart dis
3. Car Accident	20	7.7	8.7	18	DM
4.Liver cancer	18	6.8	4.0	8.	Car Accident
5.COPD	15	5.7	3.8	8	UTI.&CKD
6.CA.lung	11	4.2	3.2	6	L.resp.track infection
7.AIDS	11	4.1	2.7	5	COPD
8DM	11	4.1	2.6	5	AIDS
9Cirrhosis	11	4.0	2.6	5	CA.lung
10.Lresp.track infection	7	2.7	2.5	5	Car Accident

10 leading causes of DAlYs in Thailand 2013

male Disease	YLLs('000)	%	%	YLLS ('000)	Disease Female
1. Car Accident	454	11.1	10.8	277	Stroke
2. Stroke	340	8.8	8.4	215	DM
3. Liver cancer	268	6.9	7.0	178	Ischemic heart dis
4. Ischemic heart dis.	256	6.6	4.7	121	AIDS
5. AIDS	244	6.3	4,5	114	Car Accident
6. Cirrhosis	191	4.9	4.4	112	CA. Liver
7. CA.lung	142	3.7	3.3	85	UTI.&CKD
8 COPD	131	3.4	3.2	83	CA.Cervix
9 DM	130	3.3	3.0	77	CA.Breast
10.Trauma	95	2.4	2.7	69	CA. Lung

stroke data 2014-2015

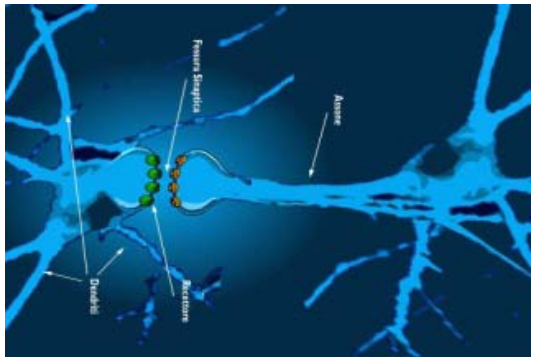
Age groups	Num. of ST. patient 2014	Num. of Dead 2014	% of dead 2014	Num. of ST. patient 2015	Num. of Dead 2015	% of dead 2015
< 60 Y	46,076	5,135	11.14	123,187	7,030	5.71
> 60 Y	112,448 (70.9%)	27,830 (84.4%)	24.75	273,295 (68.9%)	37,678 (84.3%)	13.79
Total	158,524	32,965	20.79	396,482	44,708	11.28

Data from Ministry of Public health 30 Nov 2015

Time is Brain or
Time lost is Brain loss

สถาบันประสาทวิทยา
PRASAT NEUROLOGICAL INSITITUTE

- Every one have stock of neuron cell 130 Billion cells
- Every 1 min of ischemic stroke with out treatment brain cell loss 1.9 million cells loss function and connection 1380 M units
- Every 1 hour cell degrading like aging brain 3.6 years



What are the standard procedure for stroke care ?

Acute ischemic stroke therapy

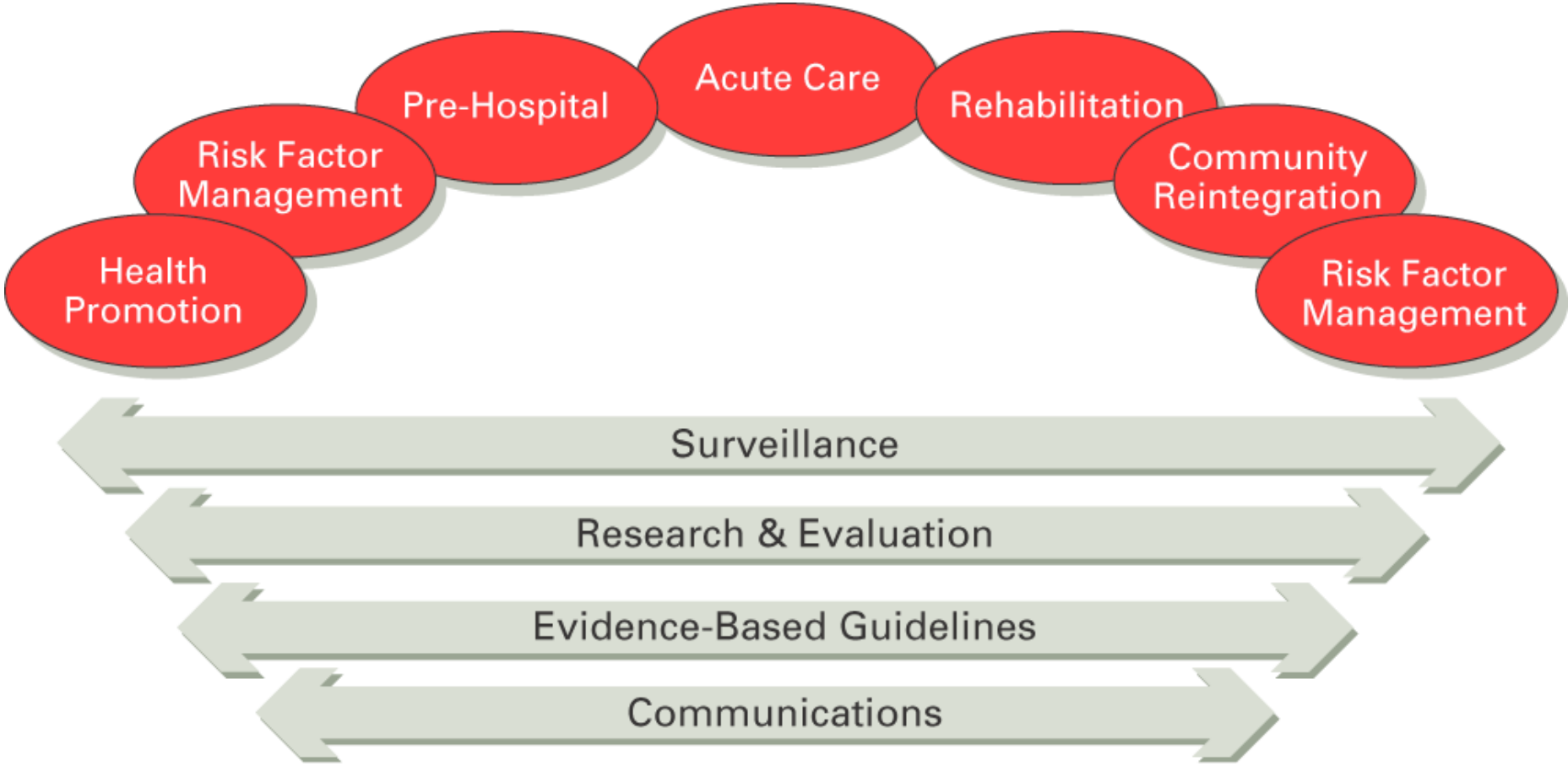
1. Stroke unit :Care in Stroke Units is recommended in national clinical guidelines
2. IV rt-PA for acute ischemic stroke within 4.5 hrs of onset
3. Aspirin administration in the first 48 hrs of onset.
4. Early hemi-craniectomy in large hemispheric infarction
5. Endovascular treatment with in <12 Hr. in large vessel occlusion

Implement for avoiding death from stroke

Treatment	RRR%	Numbers avoiding death or dependency per 1000 Rx	% can be Rx	Indication
Stroke Unit	9	56	80%	Routine
ASA	3	13	80%	Routine for ischemic
IV rt-PA	10	63	5%	Very selective

Warlow CP. Lancet 2003 :362

The Continuum of Stroke Care



Matric of stroke service in each region

indicator	A,S Hosp	M Hosp	M,F Hosp.
SFT	+	+/-	-
SU	+	+	-
ASA 48 H	+	+	+
2nd Prevention	+	+	+
Stroke rehabilitation	+	+	+
St Network	+	+	+
Referral System	+	+	+
St Awareness	+	+	+
St Alert	+	+	+

Standard work in each level of public health hospital

legend : + minor + Major

Health care system

In Thailand

66 M populations

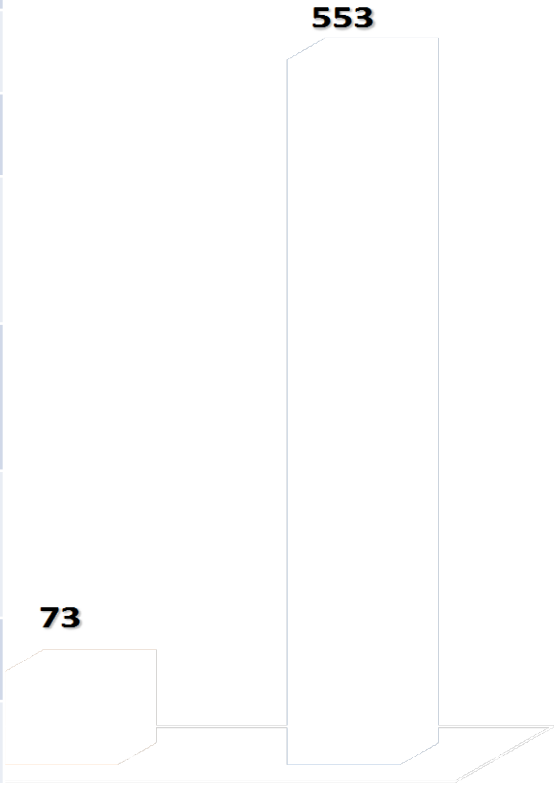
79 Provinces

12+1 Regions

Healthcare Services

Number of service center (by level)

	Level of healthcare care	Size (beds)	No.
A	Advance level hospital	≥ 500	33
S	Standard hospital	300-500	48
M	Medium size hospital	150- 300	35
F 1	Family hospital level 1	100-150	91
F 2	Family hospital level 2	50-100	73
F 3	Family hospital level 3	10-50	553
	Village healthcare unit	*OPD*	*9,755*
	Urban healthcare center	OPD	228

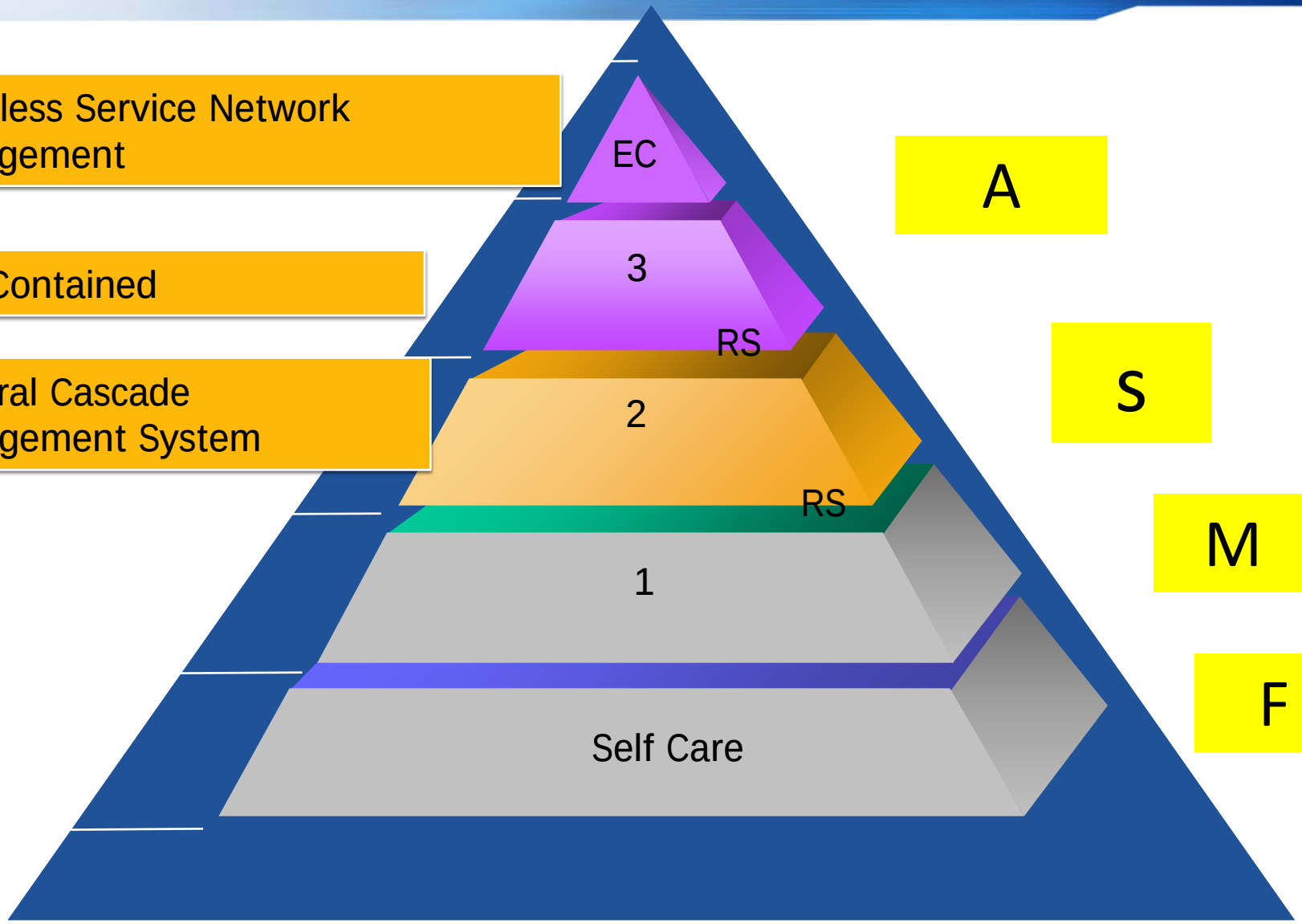


Management policy of stroke service in each region

Seamless Service Network Management

Self Contained

Referral Cascade Management System



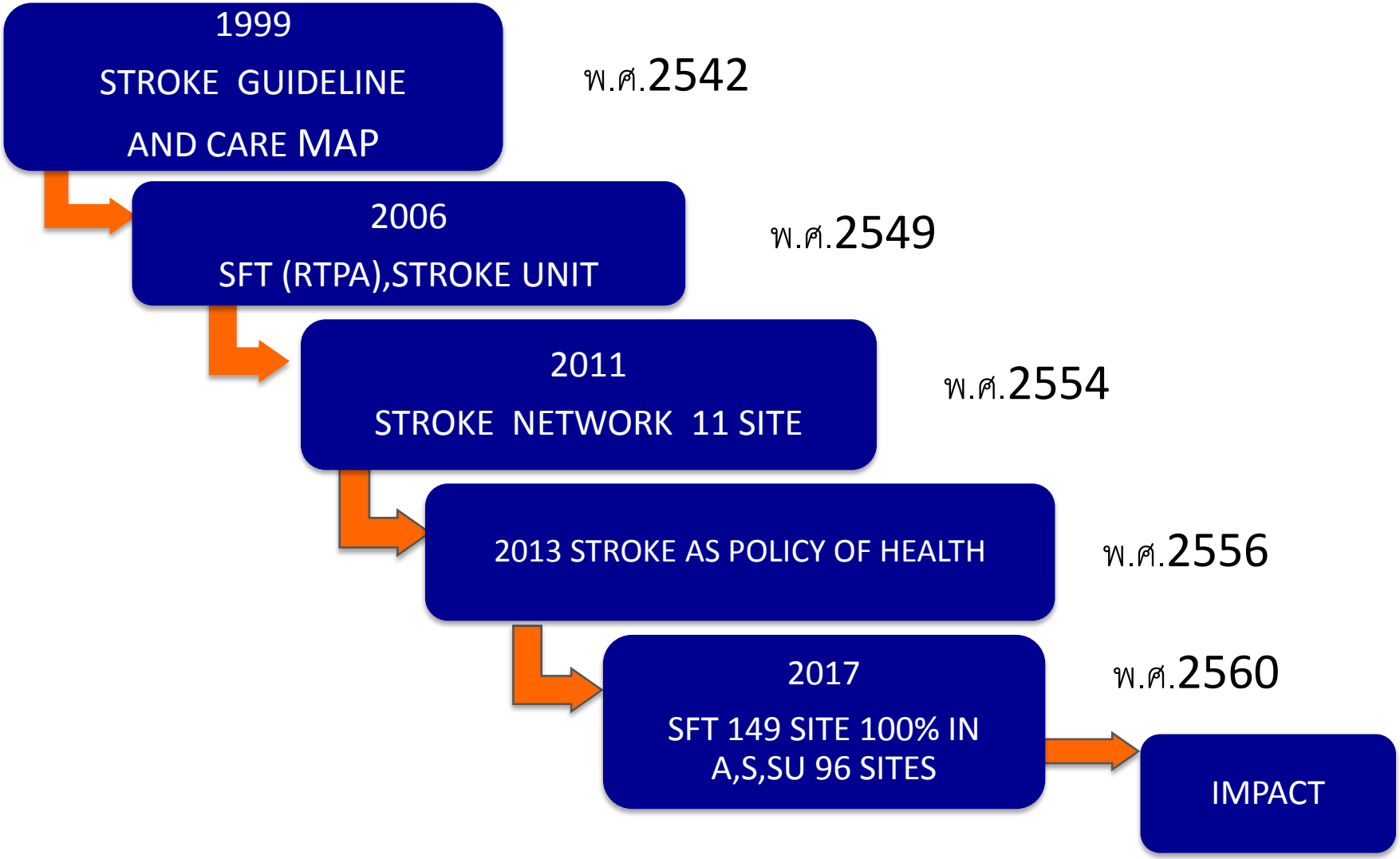
A

S

M

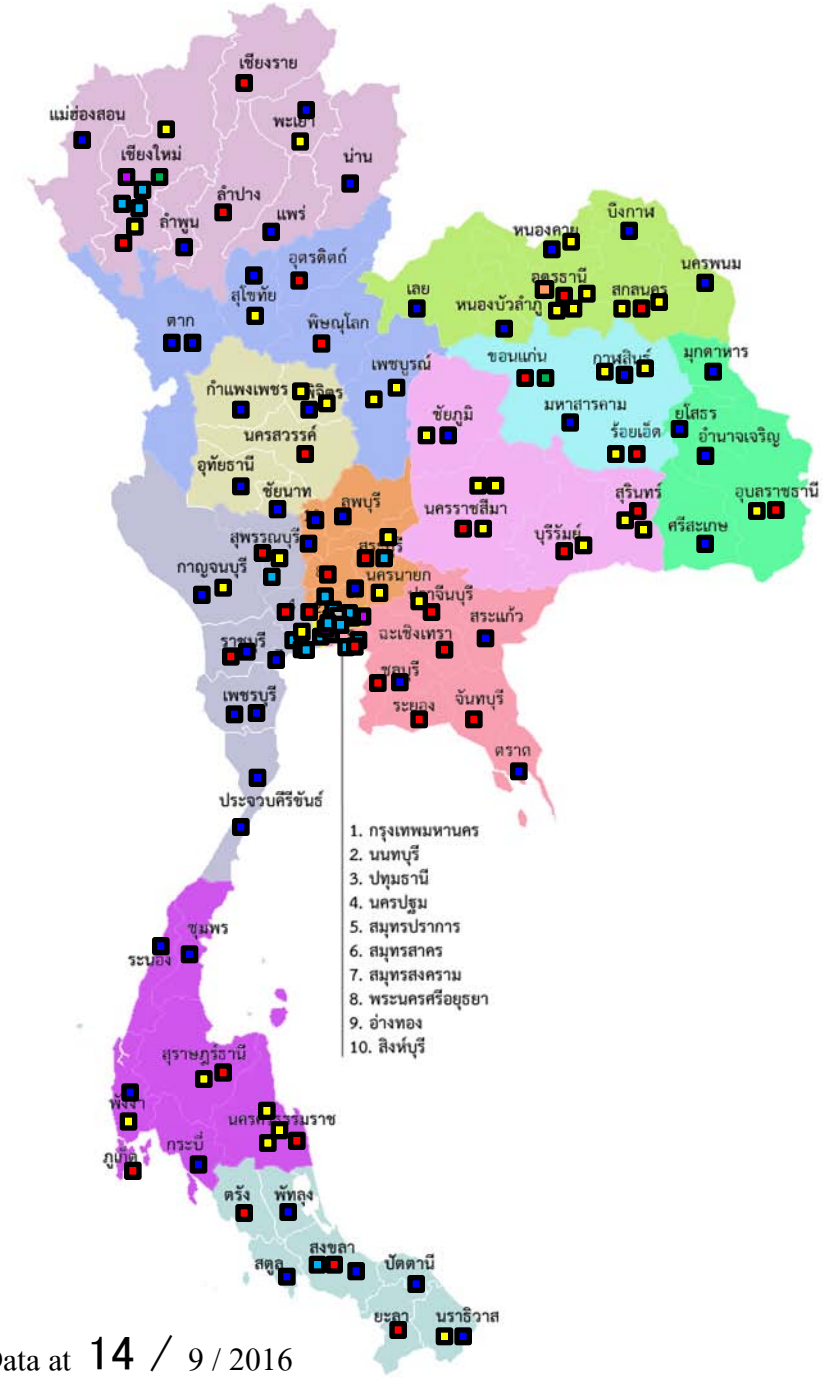
F

STEP OF IMPLIMENT OF STROKE SERVICES



Currently PNI. Has 143 hospitals signed an agreement with MOU, 96 hospitals(certified 73) had established stroke unit and 149 (certified 107) hospitals had established stroke fast track system. The network can enroll more than 800 hospitals network, resulted in standard healthcare system of ischemic stroke throughout Thailand.

For stroke database, PNI has more than 121 hospitals joined the data to improve the quality of care. (>60,000 records)



Stroke Fast Track of Thailand

Total 149 Hospitals

Level A	33 H.
Level S	47 H.
Level M	37 H.
Level F	1 H.
University H.	4 H.
MSD H.	4 H.
Army H.	1H .
Private H.	20 H .
Metropolitan H.	2 H.

Data at 14 / 9 / 2016

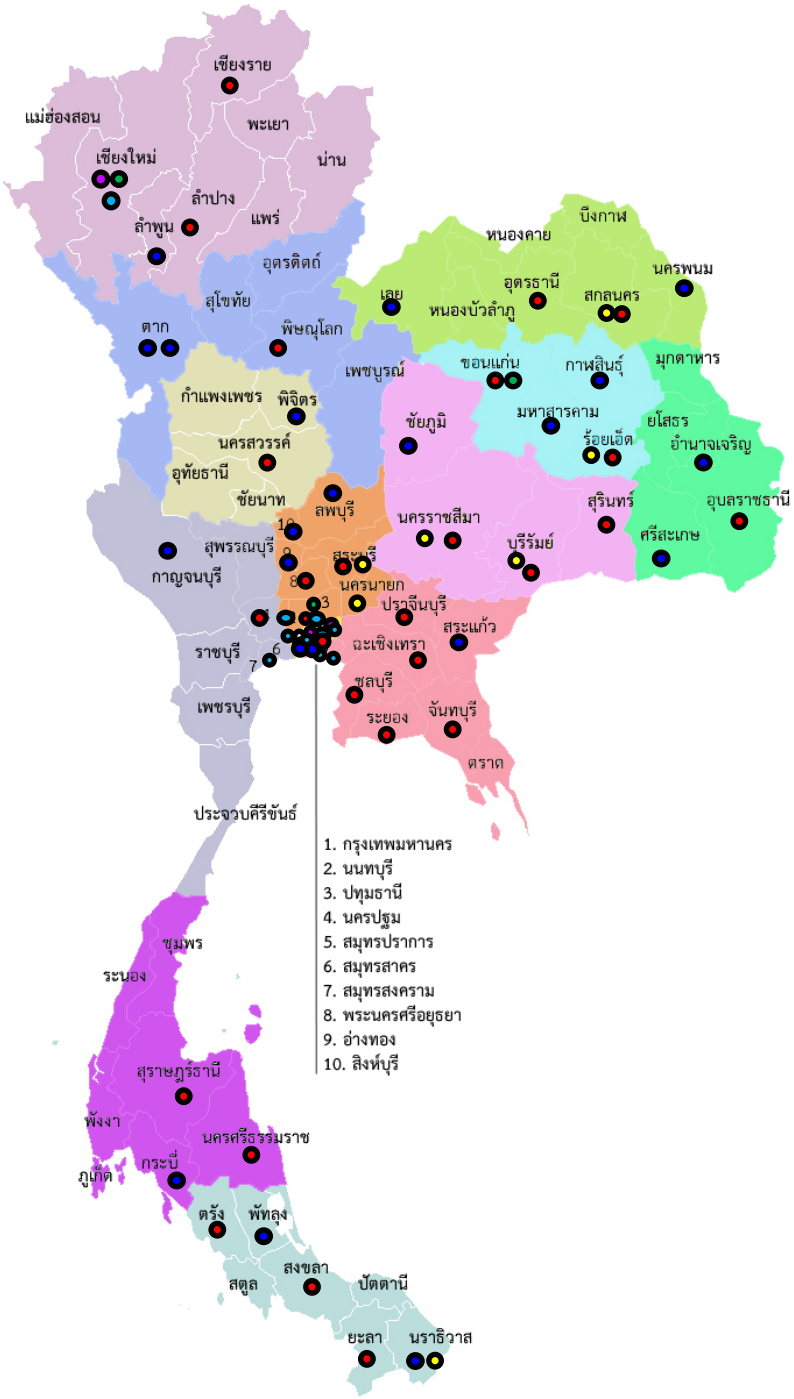
Accredited Stroke Unit in 2017

Total 96 Hospital

(Waiting for accredited 15 H.)

Level A	30 H.	Waiting
Level S	34 H.	
Level M1	4 H.	Accredited H.
MSD H.	3 H.	
Metropolitan H..	1 H.	
University H.	4 H.	
Private H.	10 H.	

Data at 10 / 5 / 2017



สถานบริการที่ผ่านการรับรอง Stroke Unit ปี 2560

(+16 รพ.) รวมจำนวน 73 โรงพยาบาล

ระดับ A	27 รพ.
ระดับ S	21 รพ.
ระดับ M1	7 รพ.
กรมการแพทย์	3 รพ.
กทม.	1 รพ.
ทบวงมหาวิทยาลัย	4 รพ.
เอกชน	10 รพ.

ข้อมูล ณ วันที่ 9 สิงหาคม 2560

HOW MANY SU.BED DO YOU WANT ?

REFERENCE TO TES STUDY:

Incidence 201-483/100,000 (35y)* (193,200 cases)

EVERAGE DAY IN STROKE UNIT 3 DAYS

We need = 193,200 cases * 3 day = 579,600 case-day

IF 100 % BED –OCCUPATION IN EACH YEARS

579,600 / 365 day = 1,588 beds

NOW WE ALREADY HAVE 94 HOSPITAL ESTABLISH SU.

DATA IN A LEVEL H. EVERAGE 10 BEDS/HOSP.= 300 BEDS

DATA IN S LEVELS H. EVERAGE 5 BEDS/HOSP.=34*5=177 BEDS

WE STILL NEED MORE AND MORE STROKE UNIT IN THAILAND

สรุป ผลการประเมินคุณภาพหออภิบาลผู้ป่วยโรคหลอดเลือดสมอง (Stroke Unit) ปี 2560

ลำดับ	โรงพยาบาล	ระดับรพ.	วันที่ลงประเมิน	ผู้ตรวจ	ผล
1	รพ.ชัยภูมิ	S	16 ก.พ.60	นพ.นฤพัชร,พว.ธัญพิมล,พว.ระวีวรรณ	ผ่าน
2	รพ.สมเด็จพระพุทธเลิศหล้า	S	7 มิ.ค. 60	นพ.ธน,พว.ธัญพิมล,พว.ระวีวรรณ	ผ่าน
3	รพ.โพนทอง	M1	13 มิ.ค. 60	นพ.ธน,พว.ระวีวรรณ,พว.สุธาสินี	ผ่าน
4	รพ.นางรอง	M1	13 มิ.ค.60	นพ.สุรศักดิ์,พว.ธัญพิมล,พว.รัตนา	ผ่าน
5	รพ.เจ้าพระยายมราช	A	16 มิ.ค.60	นพ.สุชาติ,พว.ธัญพิมล,พว.สุธาสินี	ไม่ผ่าน
6	รพ.พัทลุง	S	17 มิ.ค.60	นพ.วัชระ,พว.จุก,พว.ชัยยุทธ	ผ่าน
7	รพ.พิจิตร	S	20 มี.ค.60	นพ.สุชาติ,พว.ธัญพิมล,ภก.ธนวดี	ผ่าน
8	รพ.อำนาจเจริญ	S	20 มี.ค.60	นพ.สุรศักดิ์,พว.ระวีวรรณ,พว.สุภลักษณ์	ผ่าน
9	รพ.ศรีสะเกษ	S	21 มี.ค.60	นพ.ธนบูรณ์,พว.ระวีวรรณ,พว.สุภลักษณ์	ผ่าน
10	รพ.ปทุมธานี	S	31 มี.ค.60	นพ.สุรศักดิ์,พว.สายสมร,พว.ธัญพิมล	ผ่าน
11	รพ.นราธิวาสราชนครินทร์	S	3 เม.ย.60	นพ.วัชระ,พว.จุก,พว.ระวีวรรณ,พว.สุภลักษณ์	ผ่าน
12	รพ.สุไหงโกลก	M1	4 เม.ย.60	นพ.วัชระ,พว.จุก,พว.ระวีวรรณ,พว.สุภลักษณ์	ผ่าน
13	รพ.พระนารายณ์มหาราช	S	20 เม.ย.60	นพ.สุชาติ,พว.สายสมร,พว.รัตนา	ผ่าน
14	รพ.พหลพลพยุหเสนา	S	21 เม.ย.60	พญ.ทัศนีย์,พว.สายสมร,พว.ชัยยุทธ	ผ่าน
15	รพ.พระพุทธบาท	M1	28 เม.ย.60	พญ.ทัศนีย์,พว.เฉลิมศรี,พว.ชัยยุทธ	ผ่าน
16	รพ.สมเด็จพระยุพราชสว่างแดนดิน	M1	11 พ.ค.60	พญ.ทัศนีย์,พว.สายสมร,พว.สุธาสินี	ผ่าน
17	รพ.สวรรค์ประชารักษ์	A	23 มิ.ย. 60	นพ.ธน,พว.ธัญพิมล,พว.ระวีวรรณ	ผ่าน

สรุป SU ที่ผ่านการรับรองจากสถาบันประสาทวิทยา ปี 2554 – 2560

ปีงบประมาณ	ผ่าน	ภาครัฐ	เอกชน
2554	31 แห่ง	A 15 S 1 ทบวงมหาวิทยาลัย 4 กรมการแพทย์ 3 กทม 1	7
2555	7 แห่ง	A 2 S 2	3
2556	6 แห่ง	A 2 S 4	
2557	3 แห่ง	S 2 M1 1	
2558	2 แห่ง	S 2	
2559	8 แห่ง	A 7 M1 1	
2560	16 แห่ง	A 1 S 10 M1 5	
รวม	73 แห่ง	63 แห่ง	10 แห่ง

รพ.ระดับ A 27/33 = 81.82 %

รพ.ที่ไม่สามารถจัดตั้งSU ได้ 6 แห่ง เขต 1 รพ.นครพิงค์

เขต 2 รพ.อุตรดิตถ์

เขต 4 รพ.ราชบุรี

เขต 5 รพ.เจ้าพระยายมราช ,รพ.สมุทรสาคร

เขต 11 รพ.วชิรระภูเก็ต

รพ.ระดับ S 21/48 = 43.75 %

รพ.ที่ไม่สามารถจัดตั้งSU ได้ 27 แห่ง เขต 1 รพ.พะเยา,รพ.น่าน,รพ.แพร่,รพ.ศรีสังวาลย์

เขต 2 รพ.สุโขทัย,รพ.เพชรบูรณ์

เขต 3 รพ.กำแพงเพชร,รพ.ชัยนาทนเรนทร,รพ.อุทัยธานี

เขต 5 รพ.ประจวบคีรีขันธ์,รพ.หัวหิน,รพ.พระจอมเกล้า,รพ.บ้านโป่ง

เขต 6 รพ.ตราด,รพ.บางละมุง

เขต 8 รพ.บึงกาฬ,รพ.หนองคาย,รพ.หนองบัวลำภู

เขต 10 รพ.มุกดาหาร,รพ.ยโสธร,รพ.50พรรษา มหาวชิราลงกรณ

เขต 11 รพ.ชุมพรเขตอุดมศักดิ์,รพ.พังงา,รพ.ระนอง

เขต 12 รพ.ปัตตานี,รพ.สงขลา,รพ.สตูล

Stroke Benchmarking

STANDARD STROKE CENTER CERTIFICATION UNDER MINISTRY OF PUBLIC HEALTH

Begin in June 2015

ศูนย์โรคหลอดเลือดสมอง
มาตรฐานกระทรวงสาธารณสุข
STANDARD STROKE CENTER
ดำเนินการโดยกรมการแพทย์

ศูนย์โรคหลอดเลือดสมอง
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STANDARD STROKE CENTER
ดำเนินการโดยกรมการแพทย์

First 5 stars groups 8 SSCC hospitals 2015

PNI Bangkok

Prasat Chiengmai Hospital

Chiengmai university hospital

Hadyai general hospital

First 5 stars groups 8 SSCC hospitals 2015

Taksin hospital, BKK

Khonkan general hospital

Srinakarin hospital, Khonkan

Chiengmai Ram hospital

สรุป SSCC ปี 2558 - 2560

ปีงบประมาน		ภาครัฐ	เอกชน
2558	8 แห่ง ระดับ 5 ดาว		
	3 ดาว 1 แห่ง		

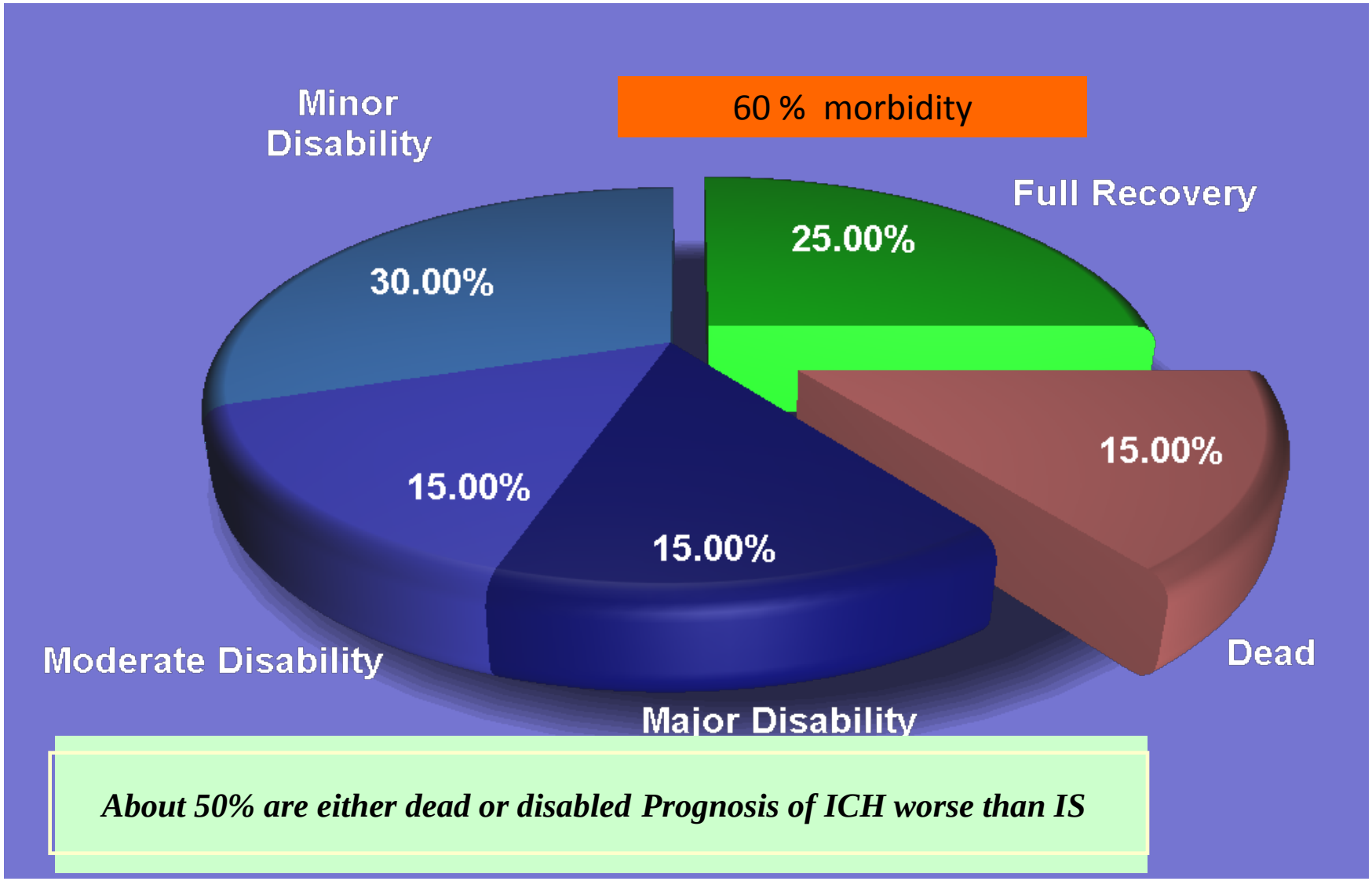
รพ.ที่สามารถส่งประเมิน SSCC ในงบประมาณ 2561 มี 36 แห่ง

เขต			
1	โรงพยาบาลลำปาง		
	จ.สมุทรสาคร	โรงพยาบาลมหาชัย	
		โรงพยาบาลจุฬารัตน์ 3	

The Solution: Organized Stroke Care

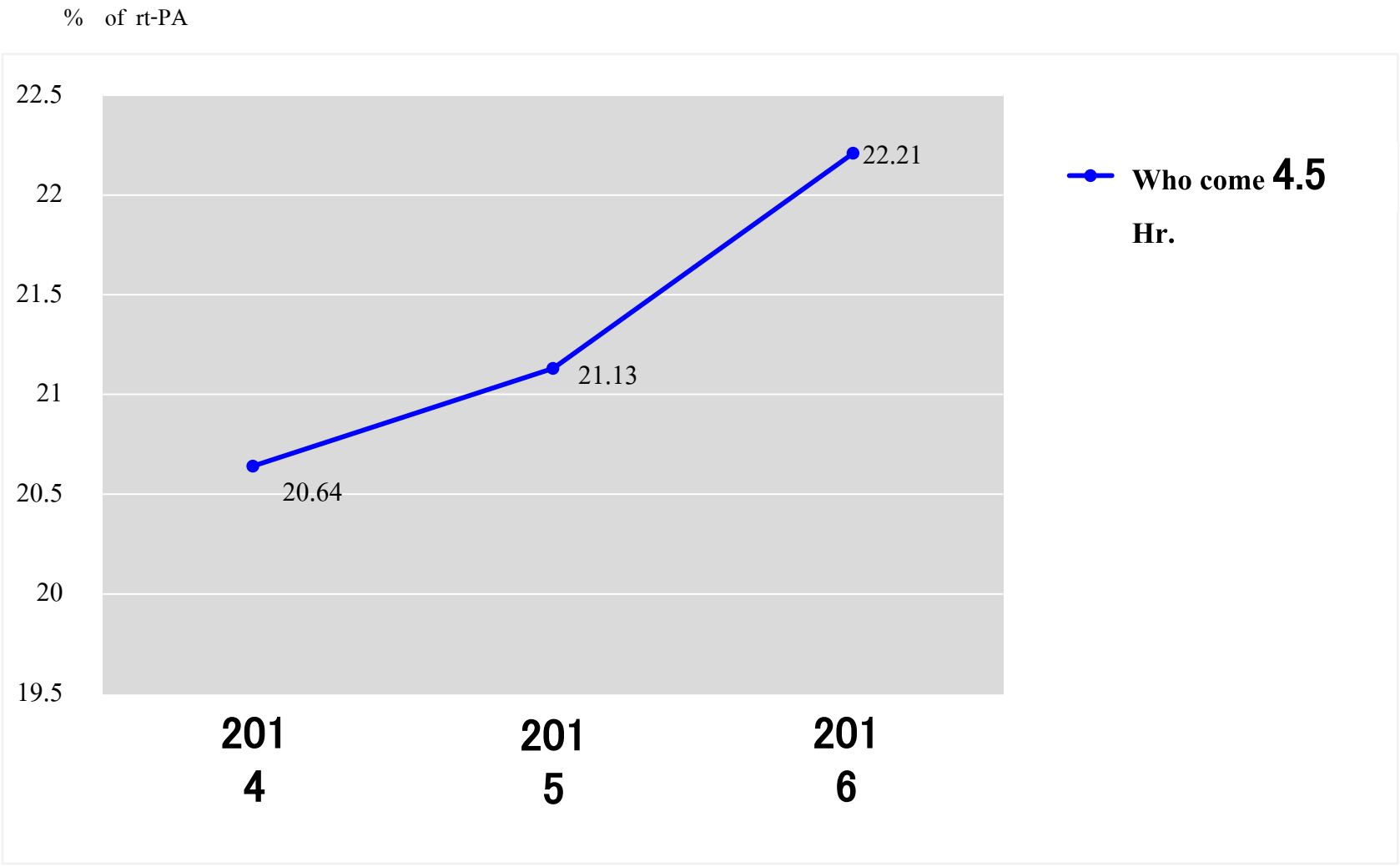
IMPACT 1 REDUCE DEATH

Outcome of Stroke



About 50% are either dead or disabled Prognosis of ICH worse than IS

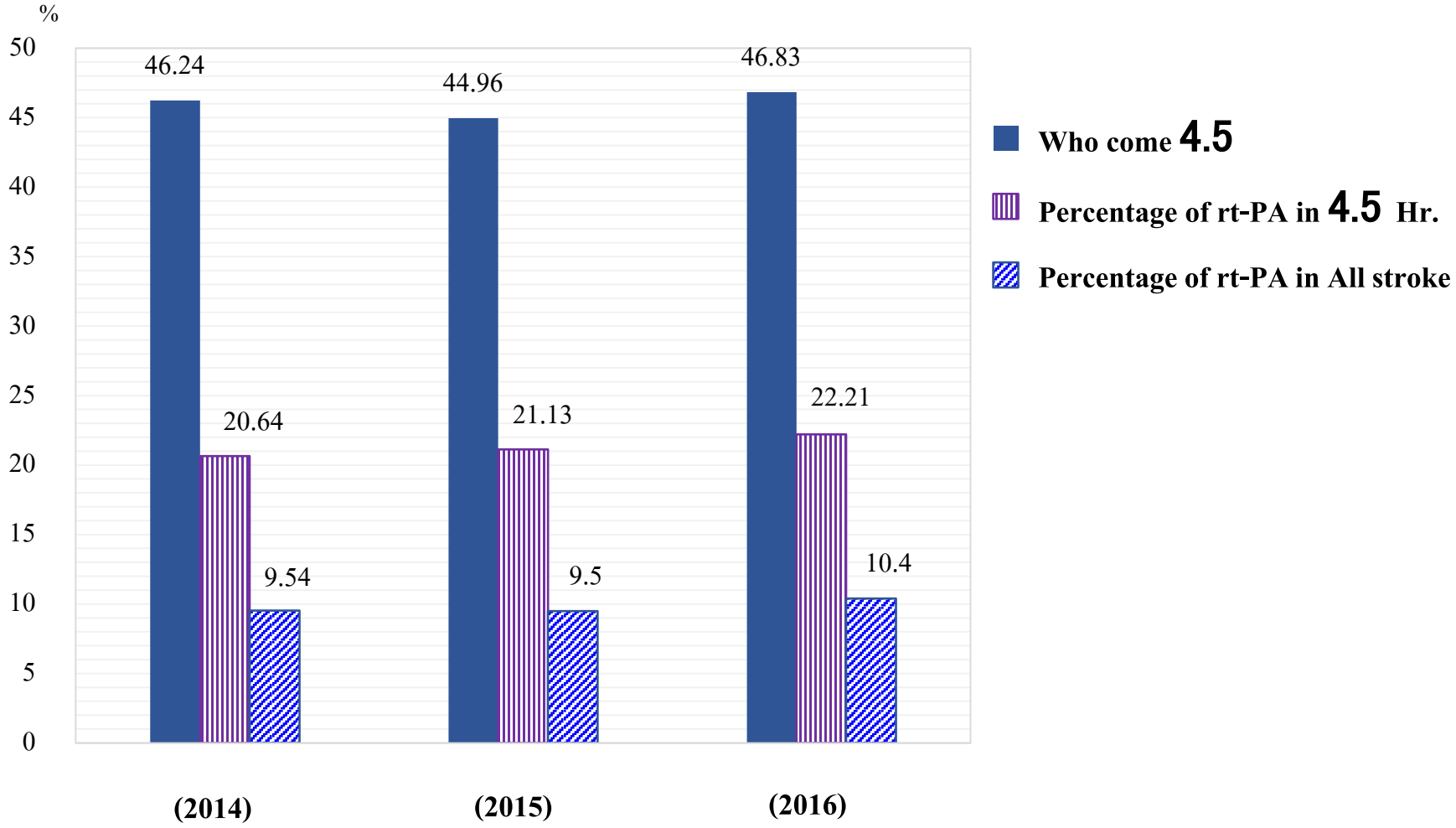
Percentage of rt-PA in stroke who come in 4.5 Hr. 2014-2016



Source : Prasat Neurological Information Center, 10 Oct. 2016

Percentage of rt-PA in All stroke and who come in 4.5 Hr.

2014–2016



Source : Prasat Neurological Information Center, 10 Oct. 2016

PNI.STROKE NETWORK DATA 2013-16

DATA	2013	2014	2015	2016	SUM	%
NO.	10152	15471	21662	20658	67943	100
UNIV&INSTITUTE	1597	2160	2137	2131	8025	21
PUBLIC HOSP.	7998	12505	18737	17804	57044	84
PRIVATE HOSP	557	806	788	723	2874	5

AGE GROUP	NO	%	
<45 Y	5708	8	
45-59 Y	19607	29	
60-79 Y	33167	49	63
> = 80 Y	9461	14	

MEAN AGE 63.8 Y

MODE AGE 63 Y

PNI.STROKE NETWORK DATA 2013-16

RTPA	2013	2014	2015	2016	SUM	%
NO.	653	1180	1789	1728	5350	100
UNIV&INSTITUTE	192	302	289	338	1121	21
PUBLIC HOSP.	405	809	1435	1335	3984	84
PRIVATE HOSP	56	69	65	55	245	5

AGE GROUP	NO	%	
<45 Y	535	10	
45-59 Y	1668	31	
60-79 Y	2680	50	59
> = 80 Y	467	9	

PNI.STROKE NETWORK DATA 2013-16

RTPA	2013	2014	2015	2016	SUM	%
NO.	653	1180	1789	1728	5350	100
UNIV&INSTITUTE	192	302	289	338	1121	21
PUBLIC HOSP.	405	809	1435	1335	3984	84
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AGE GROUP	NO	%	
<45 Y	535	10	
45-59 Y	1668	31	
60-79 Y	2680	50	59
> = 80 Y	467	9	

PERCENTAGE OF RTPA PATIENT ADMIT IN STROKE UNIT

INSTITUTE AND UNIVERSITY HOSP DATA 2013-16				
NO.	2013	2014	2015	2016
RTPA	192	302	289	336
RTPA AND SU	190	300	286	306
%	99	99	99	91

PUBLIC HOSPITAL DATA 2013-16				
NO.	2013	2014	2015	2016
RTPA	405	809	1435	1335
RTPA AND SU	379	759	1294	1228
%	83	93	90	92

PRIVATE HOSP DATA 2013-16				
NO.	2013	2014	2015	2016
RTPA	56	69	65	55
RTPA AND SU	51	68	59	53
%	91	99	91	96

PERCENTAGE OF PATIENT ADMIT IN STROKE UNIT

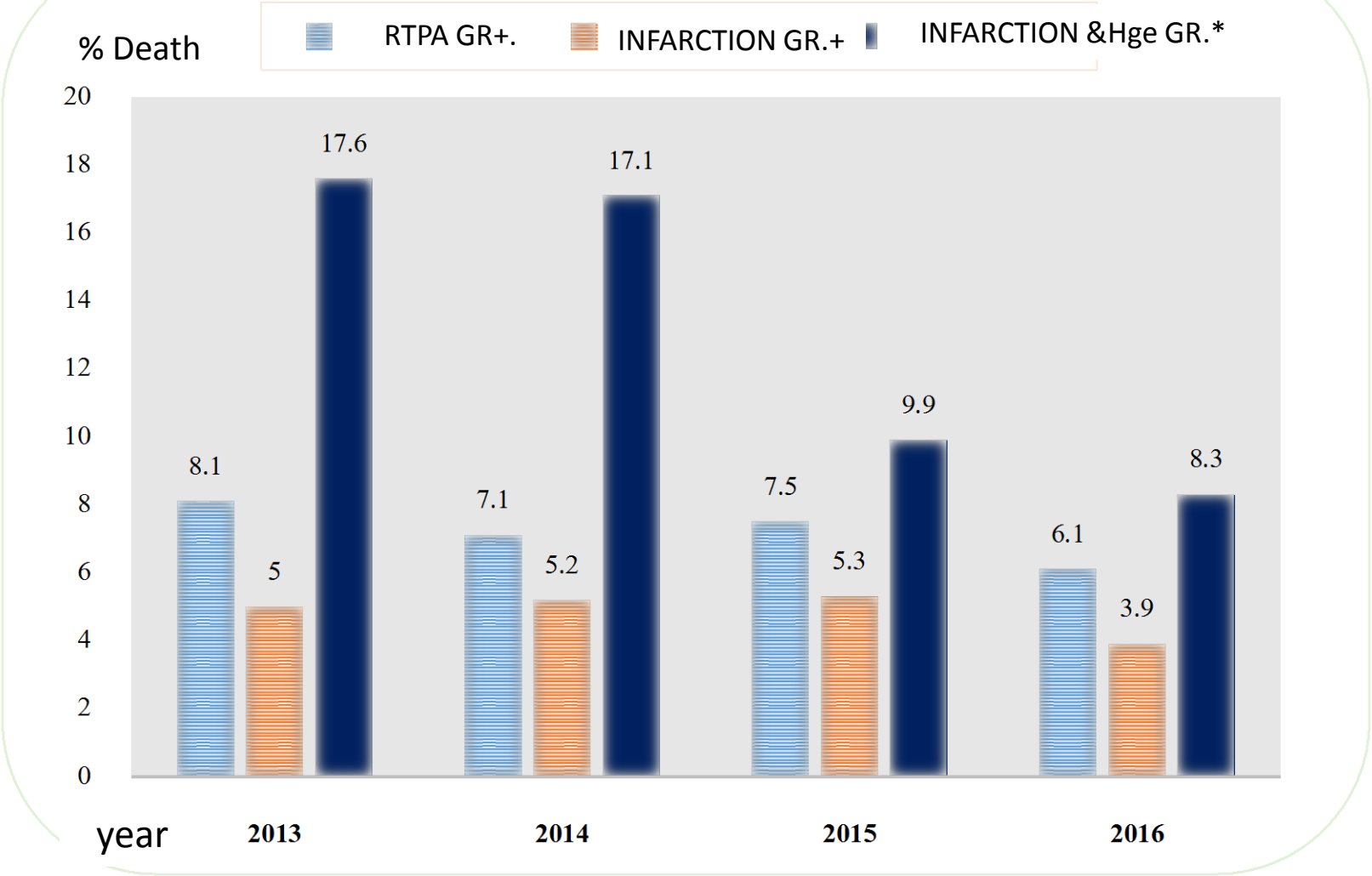
DATA 2013-16				
	2013	2014	2015	2016
NO.	10152	15471	21662	20658
SU	6486	9557	15758	16723
%	64	62	73	81

PNI.STROKE NETWORK DATA 16

data	OTD Mean /Hr	% DTN <60 min	%DTN <45 min	NIHSS mode	NIHSS median	NIHSS mean
UNIV&INSTITUTE	22.35	61	37	4	5	7.5
PUBLIC HOSP.	23.88	43.8	23	2	5	7.9
PRIVATE HOSP	23.12	51.2	24.4	2	4	6.8

AGE GROUP	OTD (Hr)	NIHSS Mean
<45 Y	23.6	6.5
45-59 Y	20.13	6.7
60-79 Y	18.72	7.9
> = 80 Y	18.78	10.6

DEATH OF STROKE IN THAILAND COMPARE WITH STROKE NETWORK OF PNI



+From Neurological Information center of PNI.

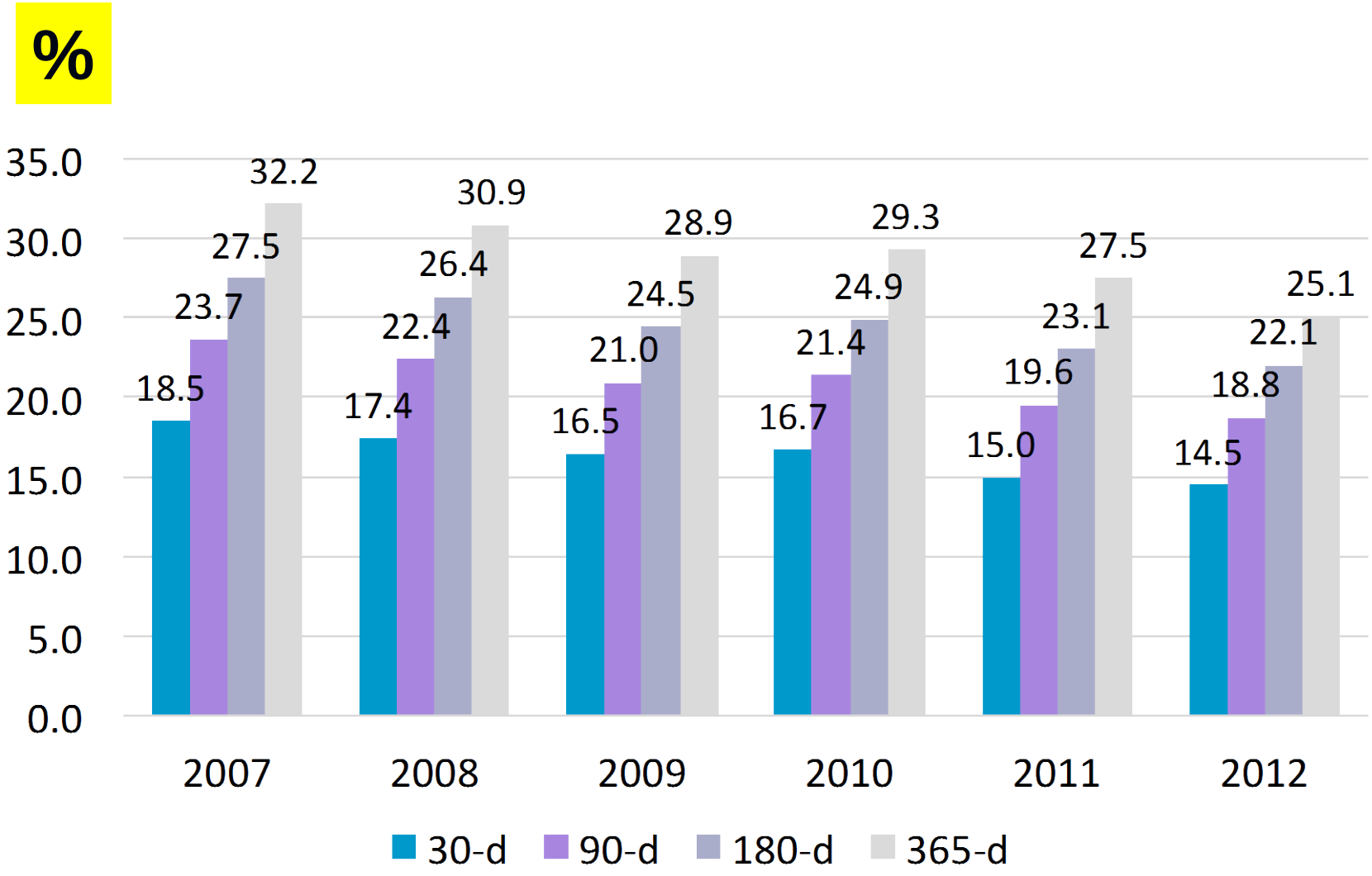
* Data Of MOPH.Department of Strategy

REDUCE DEATH IN YEAR 2016

YEAR	NO. PATIENTS	PERCENT DEATH	NO DEATH	SAVE LIFE NO.
2014	158,524	20.79 %	32,965	
2015	396,482	11.28%	44,708	11,743
2016	396,482	8.3%	364,90	8,218
GDP 5775.1USD*35*8,821 =1,765,533,000 BTH/years				
(200,128.5 BTH)				

TRADING ECONOMIC.COM/THAILAD/GDP –PER-CAPITA 2015

Mortality rate after acute stroke



ผู้ป่วย stroke (ischemic and ICH)
ต่อ 1 แสนประชากร

	2552	2553	2554	2555	2556	2557	2558	2559
เขต 1 เชียงใหม่	179.45	184.59	201.84	210.62	217.24	234.87	242.03	263.46
เขต 2 พิษณุโลก	193.62	201.96	226.29	241.01	254.09	273.96	282.24	289.39
เขต 3 นครสวรรค์	222.74	235.24	258.82	281.37	297.31	333.52	333.9	341.42
เขต 4 สระบุรี	219.6	225.47	262.72	270.92	270.94	300.53	310.77	325.4
เขต 5 ราชบุรี	194.46	192.56	218.02	234.24	245.08	268.27	288.34	294.87
เขต 6 ระยอง	204.95	212.4	230.66	242.34	249.83	273.17	280.39	305.92
เขต 7 ขอนแก่น	113.25	127.56	142.39	155.83	162	198.87	226.07	240.01
เขต 8 อุดรธานี	122.85	137.54	148.81	157.38	170.8	188.24	211.8	227.54
เขต 9 นครราชสีมา	153.82	167.24	190.34	201.68	215.34	250.33	268.62	290.54
เขต 10 อุบลราชธานี	118.51	129.08	155.13	166.44	181.66	202.25	217.27	230.82
เขต 11 สุราษฎร์ธานี	140.51	150.83	168.26	180.38	195.11	218.25	232.43	248.35
เขต 12 สงขลา	129.1	145.35	162.28	167.92	178.28	201.51	221.15	243.43
เขต 13 กรุงเทพมหานคร	162.08	183.84	177.49	193.23	204.25	219.69	230.49	240.77

Email: somtia@kku.ac.th / Tel.081 050 4626

อัตราการเสียชีวิตของผู้ป่วย ICH ที่ discharge

	2552	2553	2554	2555	2556	2557	2558	2559
เขต 1 เชียงใหม่	19.17	21.55	22.04	20.98	21.91	17.95	19.5	19.02
เขต 2 พิษณุโลก	28.58	32.39	30.7	28.86	30.84	29.19	29.83	30.19
เขต 3 นครสวรรค์	35.74	33.48	33.63	37.79	36.14	36.05	39.12	36.49
เขต 4 สระบุรี	40.07	44.61	42.21	40.2	40.74	41.08	40.73	40.68
เขต 5 ราชบุรี	34.82	34.48	31.72	34.55	34.77	33.37	32.51	32.45
เขต 6 ระยอง	40.16	40.71	38.7	39.41	39.78	39.28	37.42	36.18
เขต 7 ขอนแก่น : อันดับ 1	15.57	16.46	14.22	14.55	13.55	15.86	13.48	13.1
เขต 8 อุดรธานี	11.65	11.92	12.21	11.75	14.08	13.17	16.22	13.68
เขต 9 นครราชสีมา	27.84	29.17	29.5	31.27	29.41	28.75	27.27	27.69
เขต 10 อุบลราชธานี	16.57	16.65	16.93	17.2	17.73	16.54	16.59	15.41
เขต 11 สุราษฎร์ธานี	31.07	30.04	31.93	31.86	31.3	29.67	29.25	30.82
เขต 12 สงขลา	22.31	20.22	20.42	24.51	22.15	20.43	22.96	21.96
เขต 13 กรุงเทพมหานคร	32.11	31.73	29.12	30.27	28.43	28.37	27.71	27.41

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อัตราการได้รับยาละลายลิ่มเลือดในผู้ป่วย ischemic stroke

	2552	2553	2554	2555	2556	2557	2558	2559
เขต 1 เชียงใหม่	0.34	1.5	3.03	3.22	4.79	5.47	5.31	6.27
เขต 2 พิษณุโลก	0.16	0.6	1.56	2.35	4.11	7.31	6.52	6.64
เขต 3 นครสวรรค์	0.14	0.08	0.4	0.46	1.31	3.27	3.88	3.45
เขต 4 สระบุรี	2.08	1.73	4.61	3.91	2.66	5.18	4.56	5.12
เขต 5 ราชบุรี	0.22	0.13	0.22	0.56	1.06	2.18	2.25	3.36
เขต 6 ระยอง	0.71	5.07	1.64	1.75	2.31	2.65	3.41	3.48
เขต 7 ขอนแก่น :อันดับ 3	0.42	1.85	2.64	3.75	4.16	4.77	6.03	6.21
เขต 8 อุดรธานี	0.18	0.27	0.56	2.84	5.09	5.06	6.4	5.36
เขต 9 นครราชสีมา	0.61	0.38	1.26	2.12	2.33	2.52	2.86	3.8
เขต 10 อุบลราชธานี	0.05	0.64	0.63	0.28	0.57	2.22	3.37	4.62
เขต 11 สุราษฎร์ธานี	0.41	1.22	1.68	2.47	2.54	3.36	3.58	4.17
เขต 12 สงขลา	0.37	0.36	0.95	1.48	3.2	3.53	4.29	5.2
เขต 13 กรุงเทพมหานคร	0.93	1.06	1.51	1.64	2.53	3.57	3.9	5.41

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อัตราการเสียชีวิตของผู้ป่วย ICH ที่ 30 วัน

	2552	2553	2554	2555	2556	2557	2558	2559
เขต 1 เชียงใหม่	39.93	40.71	39.88	37.81	37.96	35.58	37.25	36
เขต 2 พิษณุโลก	42.34	46.49	42.29	41.37	42.7	41.46	38.54	39.95
เขต 3 นครสวรรค์	47.47	45.53	49.52	48.89	46.3	45.02	48.78	44.28
เขต 4 สระบุรี	41.49	45.46	43.92	41.89	41.64	41.78	40.36	41.39
เขต 5 ราชบุรี	42.05	41.13	39.06	40.08	39.06	37.83	36.53	36.21
เขต 6 ระยอง	42.45	41.71	41.32	41.16	40.57	40.79	40.66	40.08
เขต 7 ขอนแก่น: อันดับ 11	47.65	50.45	49.33	46.15	46.33	46.71	43.56	41.92
เขต 8 อุดรธานี	40.31	39.38	41.28	39.71	40.97	40.42	41.71	41.15
เขต 9 นครราชสีมา	48.89	49.06	48.97	48.62	48.48	45.42	43.62	43.07
เขต 10 อุบลราชธานี	44.51	42.33	42.96	43.17	43.49	40.93	41.83	40.06
เขต 11 สุราษฎร์ธานี	45.4	45.14	45.09	44.05	42.75	40.42	40.53	40.57
เขต 12 สงขลา	39.73	43.42	41.05	41.83	39.27	37.75	40.07	37.91
เขต 13 กรุงเทพมหานคร	32.16	31.97	28.52	30.32	28.09	28.82	27.71	28.51

Email: somtia@kku.ac.th / Tel.081 050 4626

อัตราการเสียชีวิตของผู้ป่วย ischemic stroke ที่ discharge

	2552	2553	2554	2555	2556	2557	2558	2559
เขต 1 เชียงใหม่	5.25	6.46	5.46	5.21	5.26	5.05	5.03	4.21
เขต 2 พิษณุโลก	8.51	9.08	7.49	7.44	6.03	6.54	7.2	6.92
เขต 3 นครสวรรค์	10.23	11.24	9.89	8.87	10.34	7.94	8.22	7.92
เขต 4 สระบุรี	12.69	12.84	11.06	10.95	10.69	8.34	7.91	8.89
เขต 5 ราชบุรี	9.1	9.46	8.8	9	8.25	7.71	6.75	6.02
เขต 6 ระยอง	11.02	10.76	9.57	9.72	9.03	9.23	7.82	7.42
เขต 7 ขอนแก่น: อันดับ 1	4.7	3.92	3.6	3.78	3.49	3.54	3.16	2.29
เขต 8 อุดรธานี	2.68	3.48	3.57	4.48	2.66	2.99	3.03	2.74
เขต 9 นครราชสีมา	8.05	8.79	7.37	6.89	7.53	6.45	5.71	5.16
เขต 10 อุบลราชธานี	5.23	6	4.35	4.82	5.64	4.81	4.03	3.39
เขต 11 สุราษฎร์ธานี	8.98	8.6	8.29	6.68	7.6	6.87	6.49	7.2
เขต 12 สงขลา	5.51	6.09	5.27	5.64	5.99	4.7	4.97	5.21
เขต 13 กรุงเทพมหานคร	9.48	8.54	7.98	8.21	8.22	7.14	7.96	7.55

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อัตราการเสียชีวิตของผู้ป่วย ischemic stroke ที่ 30 วัน

	2552	2553	2554	2555	2556	2557	2558	2559
เขต 1 เชียงใหม่	16.09	17.09	15.45	14.56	15.02	14.2	13.2	13.13
เขต 2 พิษณุโลก	16.44	15.82	13.6	13.69	11.8	12.2	11.58	11.96
เขต 3 นครสวรรค์	17.9	18.41	16.63	15.68	15.87	14.02	13.35	12.83
เขต 4 สระบุรี	15.51	16.64	12.95	13.07	13.95	10.73	10.38	11.26
เขต 5 ราชบุรี	14.04	14.18	13.8	12.97	11.86	10.8	10.05	9.27
เขต 6 ระยอง	14.07	14.15	12.93	12.19	11.61	11.42	10.58	9.96
เขต 7 ขอนแก่น : อันดับ 13	23.62	19.96	19.71	17.84	17.94	16.48	14.64	13.31
เขต 8 อุดรธานี	17.11	16.25	16.18	14.64	13	12.49	12.07	11.52
เขต 9 นครราชสีมา	18.87	19.62	16.84	14.99	16.51	14.69	13.57	12.64
เขต 10 อุบลราชธานี	19.57	19.64	17.62	17.65	16.22	16.15	13.77	11.94
เขต 11 สุราษฎร์ธานี	15.07	15.27	13.6	12.06	13.38	12.16	11.39	10.93
เขต 12 สงขลา	12.39	14.48	12.96	12.39	12.39	11.02	11.12	10.45
เขต 13 กรุงเทพมหานคร	10.21	8.74	8.96	9.56	9.16	8.21	8.67	8.56

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อัตราการเสียชีวิตของผู้ป่วย stroke (ischemic and ICH) เมื่อ discharge

	2552	2553	2554	2555	2556	2557	2558	2559
เขต 1 เชียงใหม่	10.27	11.54	11.48	10.57	10.56	9.14	9.92	8.86
เขต 2 พิษณุโลก	15.81	17.31	16.17	14.54	14.04	13.8	14.28	14.11
เขต 3 นครสวรรค์	19.33	18.43	18.29	17.77	17.97	16.21	16.76	15.68
เขต 4 สระบุรี	22.43	23.12	21.91	20.76	19.99	18.52	17.4	18.09
เขต 5 ราชบุรี	17.92	17.5	16.37	17.62	16.43	15.58	14.2	13.78
เขต 6 ระยอง	20.98	20.53	18.57	19.5	18.36	18.55	16.59	15.85
เขต 7 ขอนแก่น: 2	8.18	7.68	7.28	7.08	6.05	6.53	6.05	5.25
เขต 8 อุดรธานี	5	5.51	5.61	5.83	5.15	5.42	5.99	5.04
เขต 9 นครราชสีมา	13.98	14.73	14.68	14.39	13.73	12.12	11.44	11.06
เขต 10 อุบลราช	8.64	8.95	8.67	8.42	8.95	7.8	7.21	6.59
เขต 11 สุราษฎร์	14.88	14.58	15.23	13.94	13.98	13.13	12.59	13.23
เขต 12 สงขลา	10.49	9.62	8.96	10.87	10.18	8.83	9.49	9.22
เขต 13 กรุงเทพ	17.71	16.17	15.69	15.57	14.79	13.8	14.02	13.62

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อัตราการเสียชีวิตของผู้ป่วย stroke (ischemic and ICH) ที่ 30 วัน

	2552	2553	2554	2555	2556	2557	2558	2559
เขต 1 เชียงใหม่	24.9	25.39	24.56	22.59	22.42	21.16	21.49	20.25
เขต 2 พิษณุโลก	26.01	26.48	24.18	22.82	21.98	21.92	20.14	20.49
เขต 3 นครสวรรค์	28.2	26.97	28.23	25.72	24.89	22.94	23.25	21.32
เขต 4 สระบุรี	24.77	26.41	24.07	22.82	22.48	20.37	19.1	19.93
เขต 5 ราชบุรี	23.95	23.18	22.28	22.11	20.29	19.33	17.82	17.04
เขต 6 ระยอง	24.1	23.27	21.78	21.83	20.58	20.56	19.4	18.76
เขต 7 ขอนแก่น : 12	31.28	29.29	29.75	26.86	25.69	24.16	22.9	21.01
เขต 8 อุดรธานี	23.37	22.51	23.05	20.66	19.34	19.75	18.72	18.12
เขต 9 นครราชสีมา	28.58	29.19	28.23	25.72	25.47	22.87	21.74	20.73
เขต 10 อุบลราชธานี	27.04	26.22	26.32	25.17	23.76	22.47	20.88	19.41
เขต 11 สุราษฎร์ธานี	23.43	23.98	23.02	21.02	21.39	19.79	18.97	18.59
เขต 12 สงขลา	21.43	22.77	21.18	21	19.78	18.29	18.83	17.31
เขต 13 กรุงเทพมหานคร	18.41	16.53	16.17	16.48	15.41	14.91	14.67	14.71

Email: somtia@kku.ac.th / Tel.081 050 4626

IMPACT REDUCE MORBILITY

Modified Rankin Scale for Neurologic Disability

0.= No Symptoms at all

1.= No Significant disability despite symptoms: able to carry out all usual duties and activity

2.= Slight disability : unable to carry out all previous activities, but able to look after own affairs without assistance

3.=Moderate disability: requiring some help, but able to walk without assistance

4.=Moderately severe disability: Unable to walk without assistance and unable to attend to own bodily needs without assistance

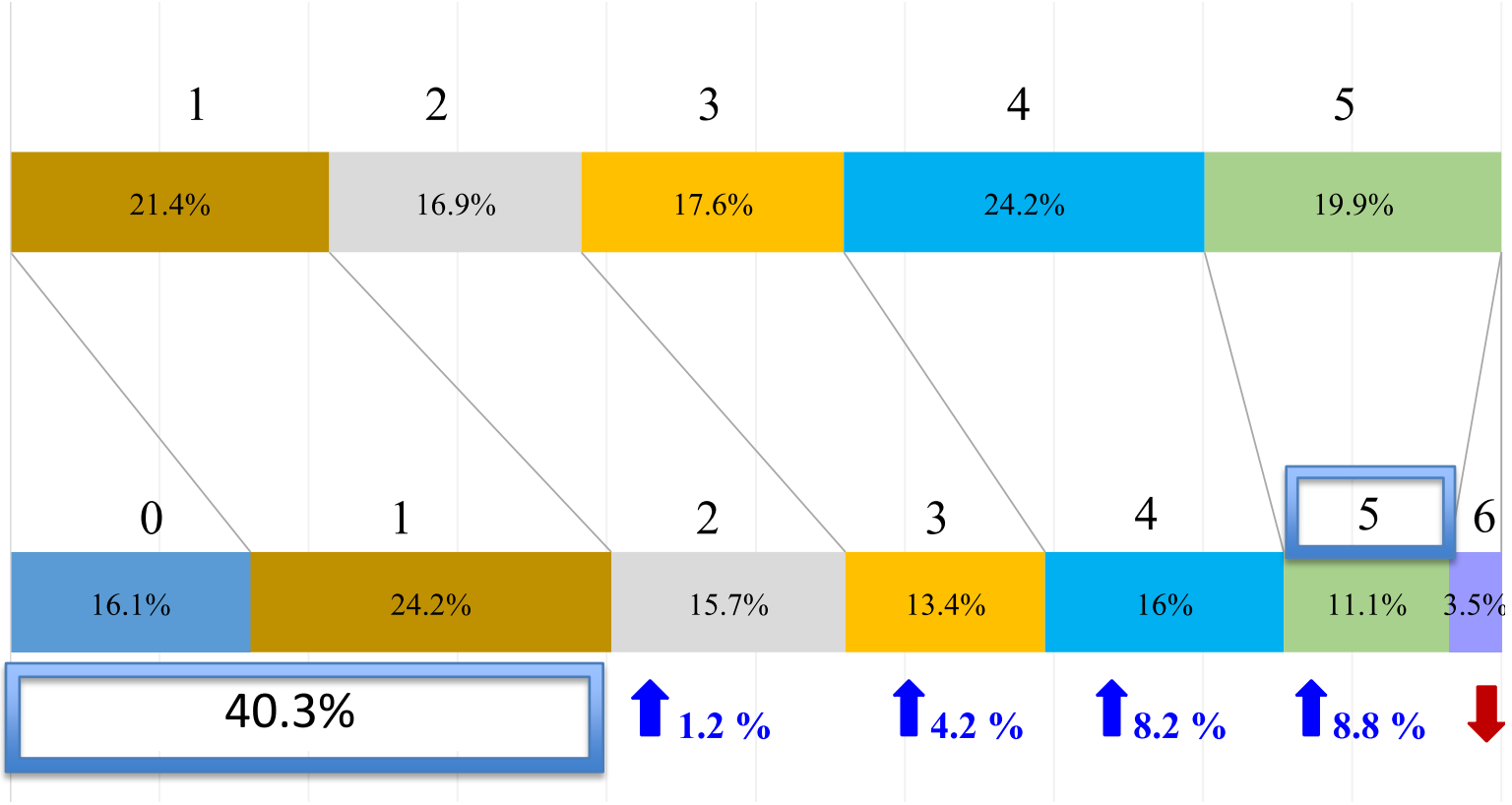
5.=Severe disability: bedridden ,incontinent and requiring constant nursing care and attention

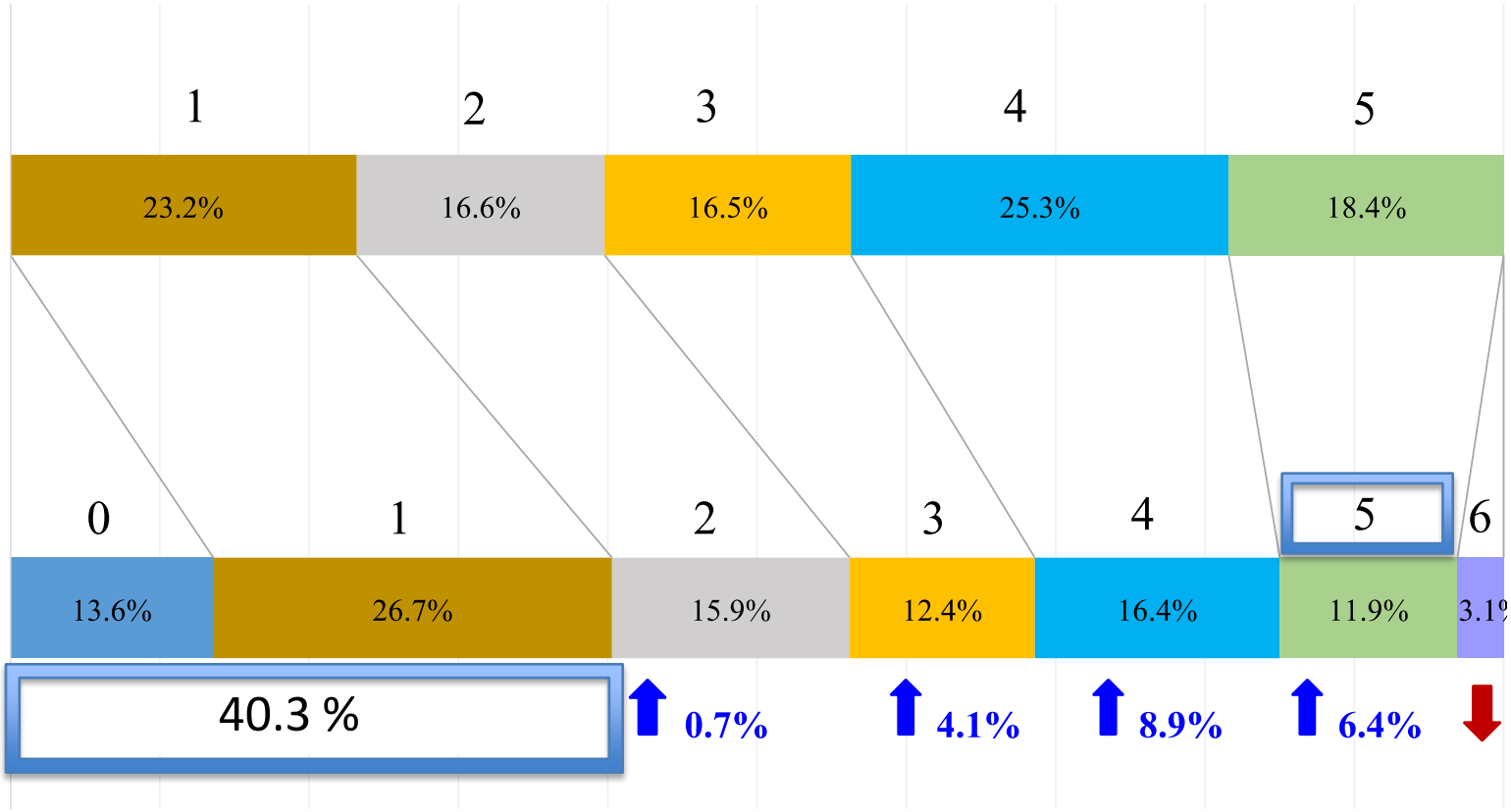
6.= Dead

2014

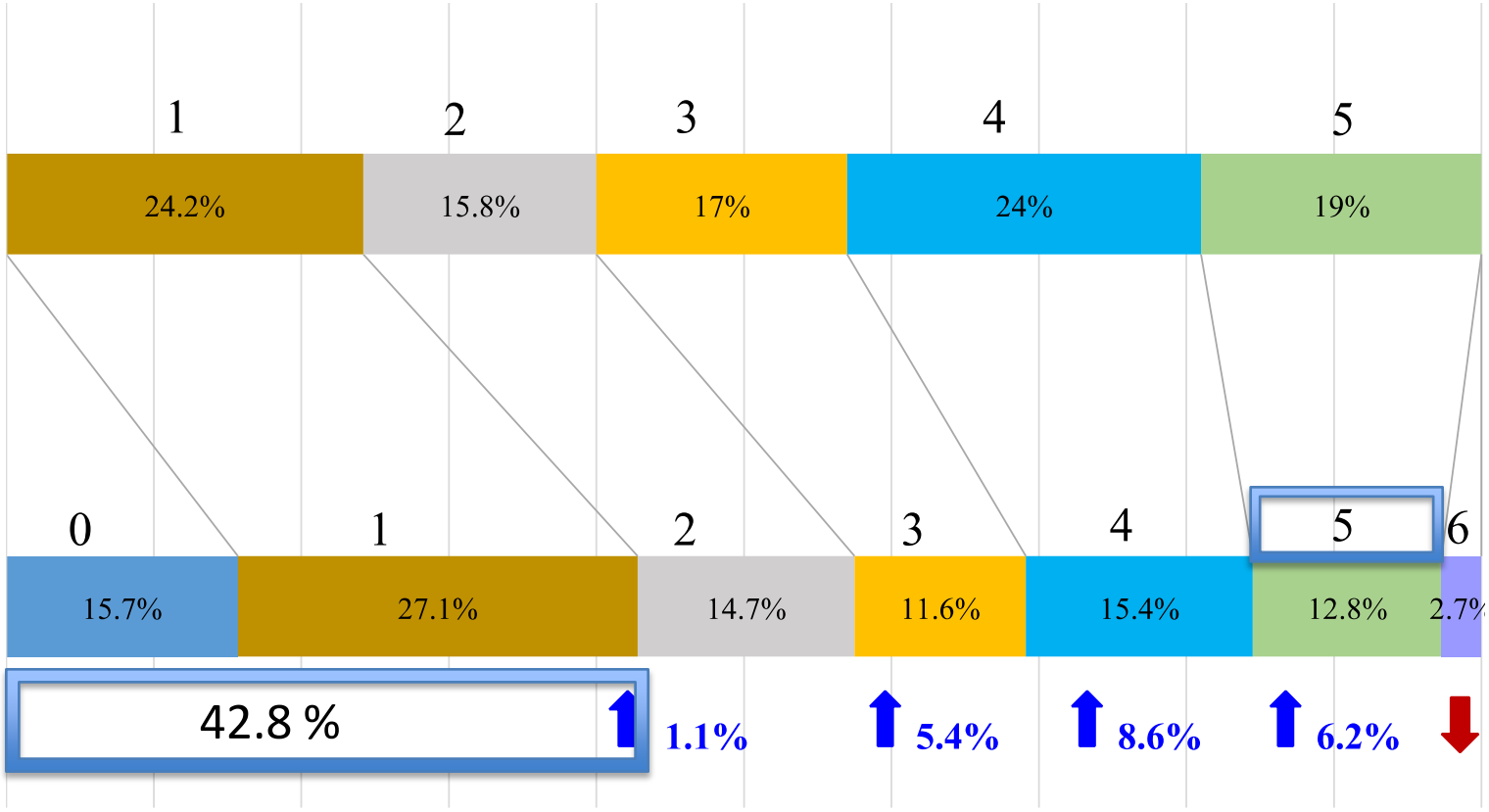
Result of Ischemic Stroke Classify by mRS

Ischemic Stroke





enter, 10 Oct. 2016


1
2
3
4
5
24.2%
15.8%
17%
24%
19%
0
1
2
3
4
5
6
15.7%
27.1%
14.7%
11.6%
15.4%
12.8%
2.7%
42.8 %
1.1%
5.4%
8.6%
6.2%

Oct. 2016

REDUCE MORBILITY IN YEAR 2016

YEAR	NO. PATIENTS	PERCENT FULLY RECOVERY	PERCENT IN STROKE NETWORK	FULLY RECOVERY NO.
2016	396,482	25%	42%-50%	99,120

25%*396,482=99120

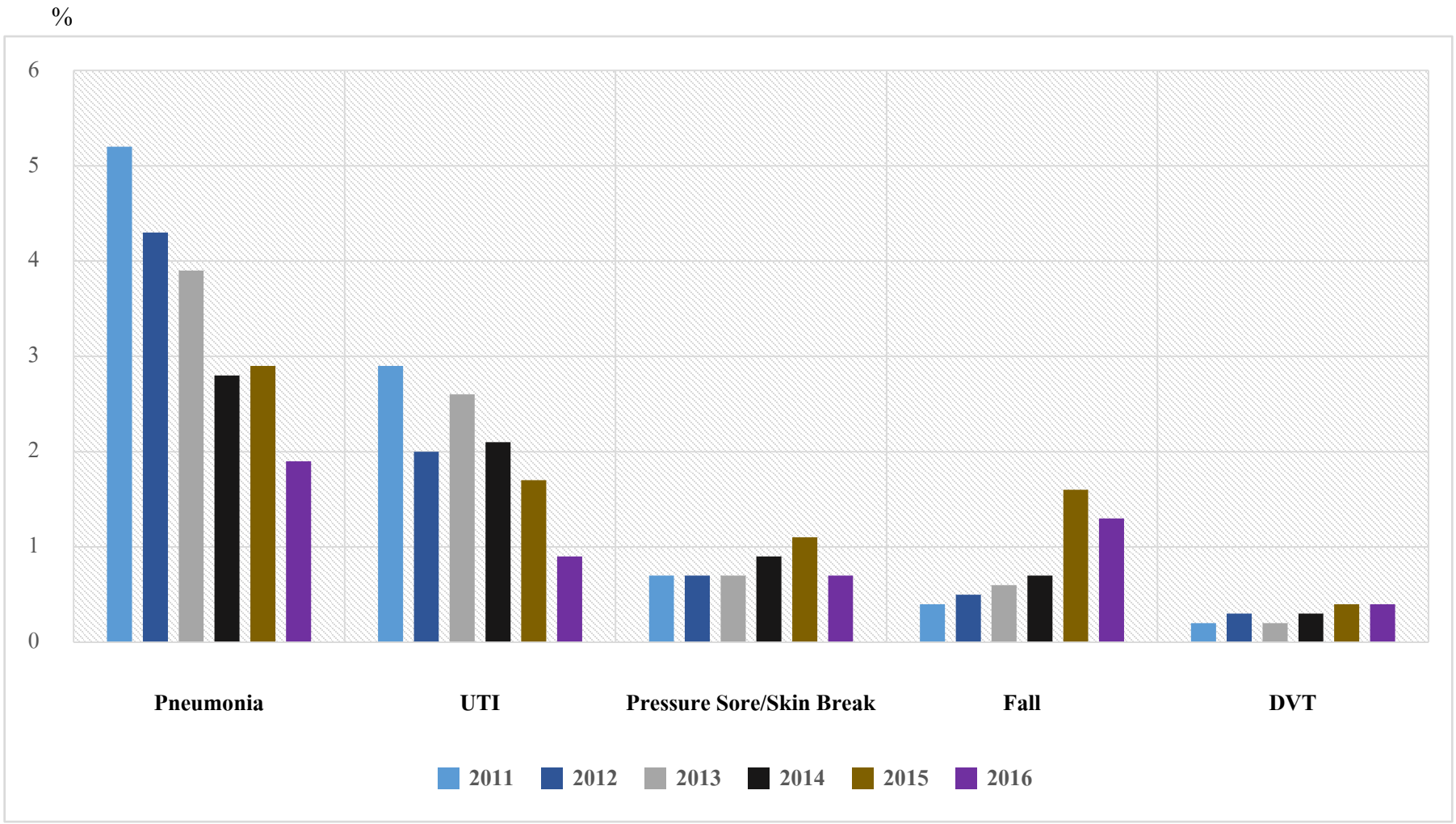
GDP 5775.1USD*35*99,120 =19,836,736,920 BTH/years

(200,128.5 BTH)

TRADING ECONOMIC.COM/THAILAD/GDP –PER-CAPITA 2015

IMPACT REDUCE COST

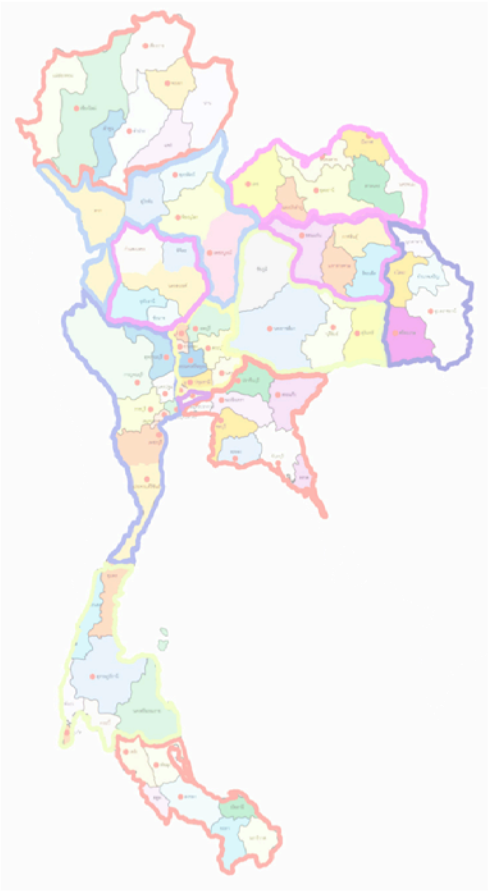
Complication Indicator 2011-2016

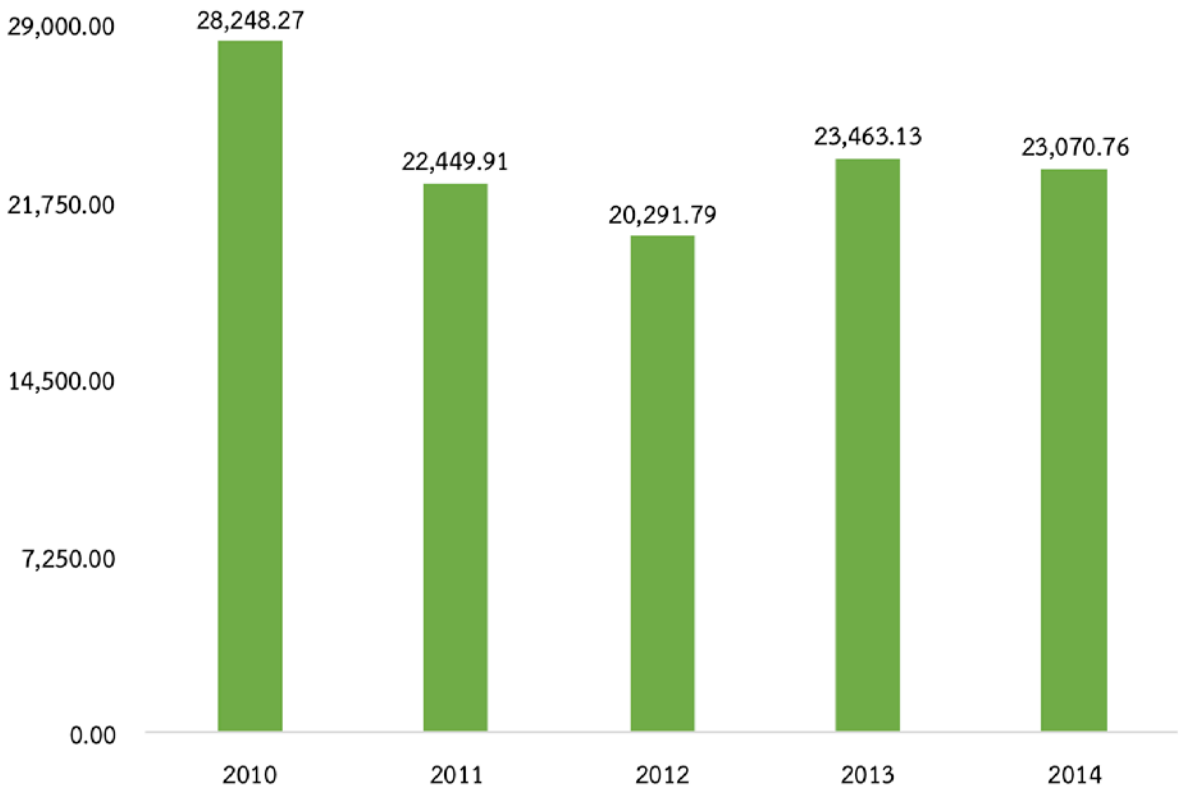


Source : Prasat Neurological Information Center, 10 Oct. 2016

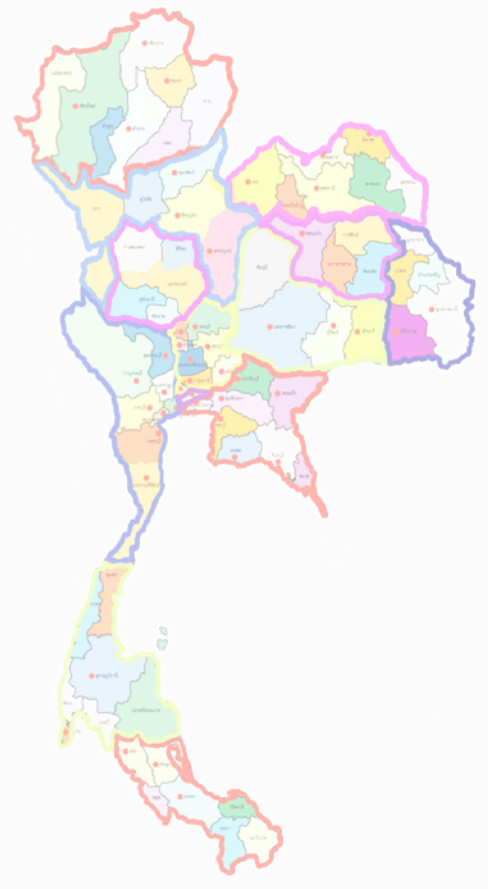
The average chart

Cost of stroke patients. (Baht)

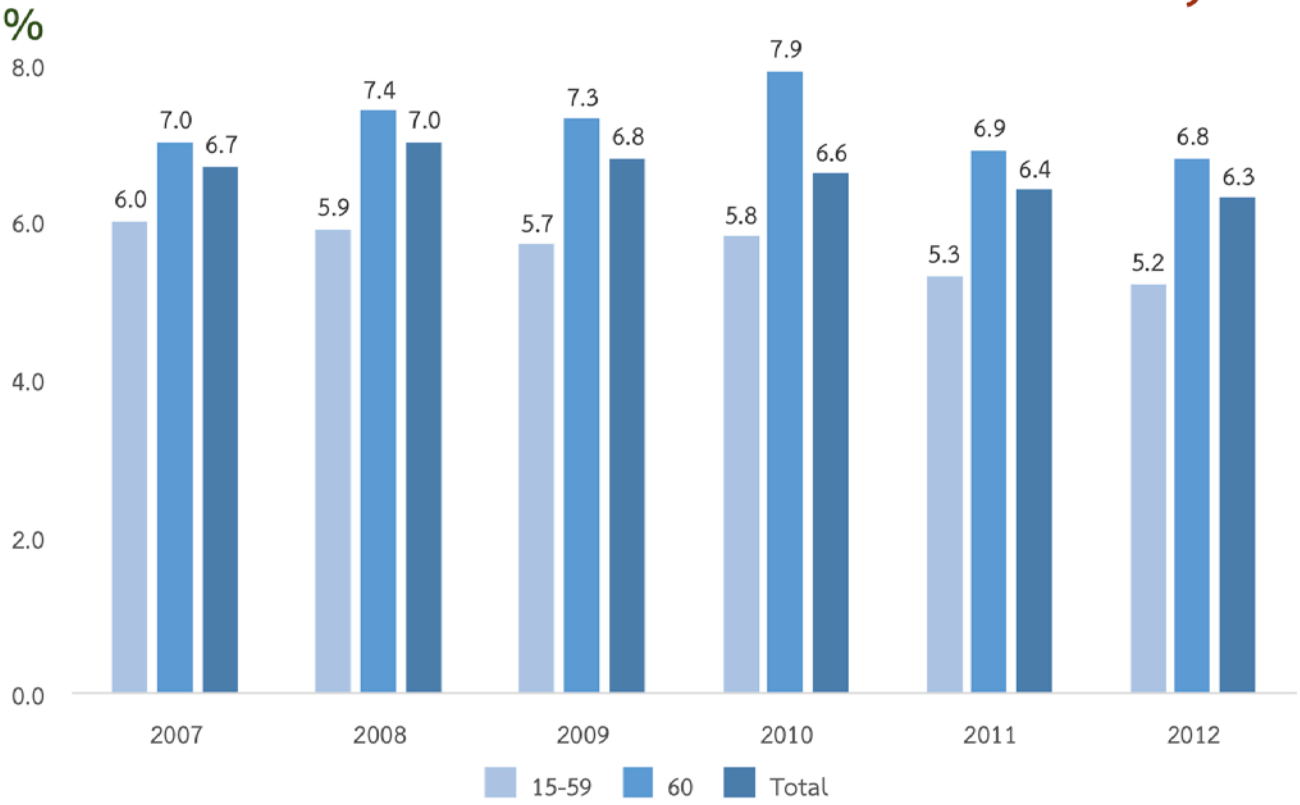




Length of stay (day)



6.3 days



GOAL OF STROKE

Stroke and Near future

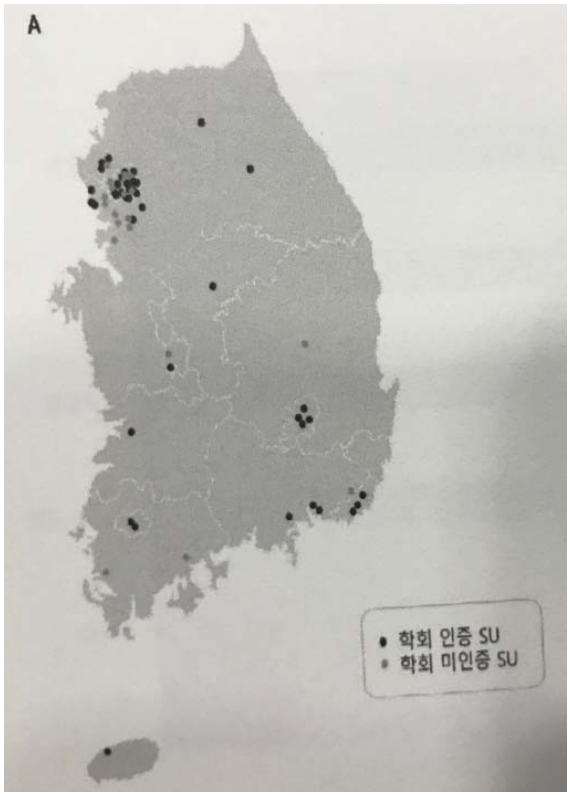
Transport to nearest appropriate stroke facility

Range of stroke centre capabilities

Comprehensive stroke centre	Primary stroke centre	Acute stroke facility
24/7 state-of-the-art care with all the latest equipment and facilities from acute stroke to rehabilitation	Evidence-based stroke care, providing excellent acute phase treatment, usually with transfer for further care	Effective diagnosis and treatment in the very acute phase, with transfer for further care

1. Jauch E, et al. *Stroke* 2013;44:870-947.
2. Xian Y. *JAMA* 2011;305(4):373-380.

Current Korean Status on Stroke Center



Current SUs are mainly located in Seoul, Busan, Daegu

65 SU

47 KSS certified

KSS objective on SU

Increase PSC (primary stroke center; rt-PA ready HP) up to 500 evenly throughout the country

Issues (survey by KSS)

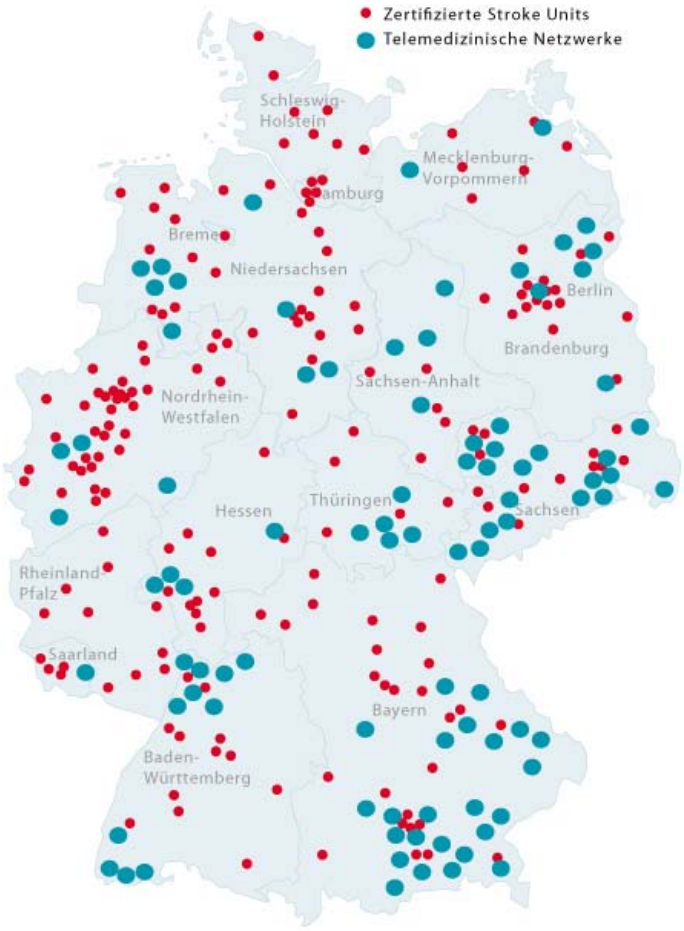
- New SU: difficult to set up
  - Short of personal (95.8%)
  - Lack of financial support (87.5%)
- Exiting SU: difficult to maintain
  - Lack of financial support (78.4%))
  - Short of personal (75.7%)

Source from KSS supplemental training June 2017
HIRA Stroke Quality Assessment 2015
AHA/ASA guideline 2015

Hyper-acute Stroke Units: The German Variant

Early admission
Short stay
All active therapies available
Early rehab
Intermediate care standard

Almost 300 certified stroke units in the country



1st ASEAN stroke collaboration: Stroke service in ASEAN 1-4 May 2017

Somchai Towanabut
Prasat Neurological institute
Medical services department ,Moph ,Thailand

ASEAN Countries sort by area of countries

Congress purpose

1. To Reduce mortality and morbidity of stroke in ASEAN countries by.
   - set up collaboration between leader of ASEAN countries
   - Perform Knowledge exchange or/and transfer best practice and technology together
   - setting data exchange by network and benchmark
2. Join research of stroke and Neurology in the future.

Our slogan

“ If you want to go First go alone

If we want to go quick go together “

Target of benchmark

- Action
- Accessibility
- Equity (sufficient)
- network

Boehringer Ingelheim

angels

2014

We want to support the implementation of the mission of the scientific societies

World Stroke Organization

Our mission is to reduce the global burden of stroke through prevention, treatment and long term care. We aim to accomplish its mission by:

- Fostering the best standards of practice
- Increasing stroke awareness among the population and among health professionals

ESO
EUROPEAN STROKE ORGANISATION

The ESO's major objective is to improve stroke care in Europe by providing medical education to healthcare professionals and the lay public in Europe. By offering best practice approaches, the ESO's goal is to harmonise stroke management in Europe.

ESO Quality meas

1.	Percent of acute stroke patients treated with intravenous thrombolysis having a **door-to-needle time <60 minutes.**	**50%**
2.	Recanalization **procedure rate**	**5% min – 15% target**
3.	Percent of brain imaging by **CT or MRI** in every suspected stroke.	
4.	Percent of ischemic stroke patients with antithrombotic therapy (**antiplatelet** medication) at **discharge**.	**85% min**
5.	Corresponding antithrombotic therapy (**anticoagulation**) at **discharge** in patients with atrial fibrillation.	**85% min**
6.	Percent of stroke unit patients **screened for swallowing disorders**	**85% min**
7.	Percent of all acute patients with stroke as the predominant pathology admitted to the hospital treated on the **stroke unit** (or the ICU, if appropriate).	**85% min**

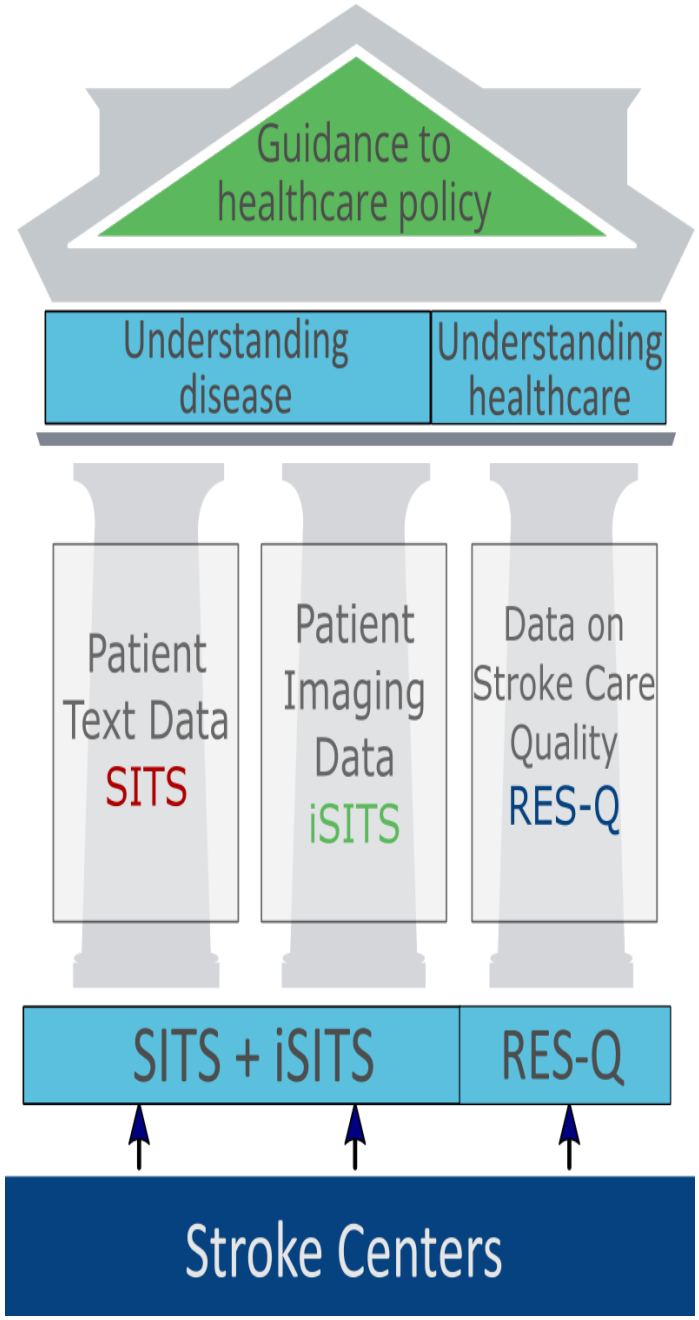
Recognition

THE EXCELLENCE AWARDS ARE DESIGNED TO

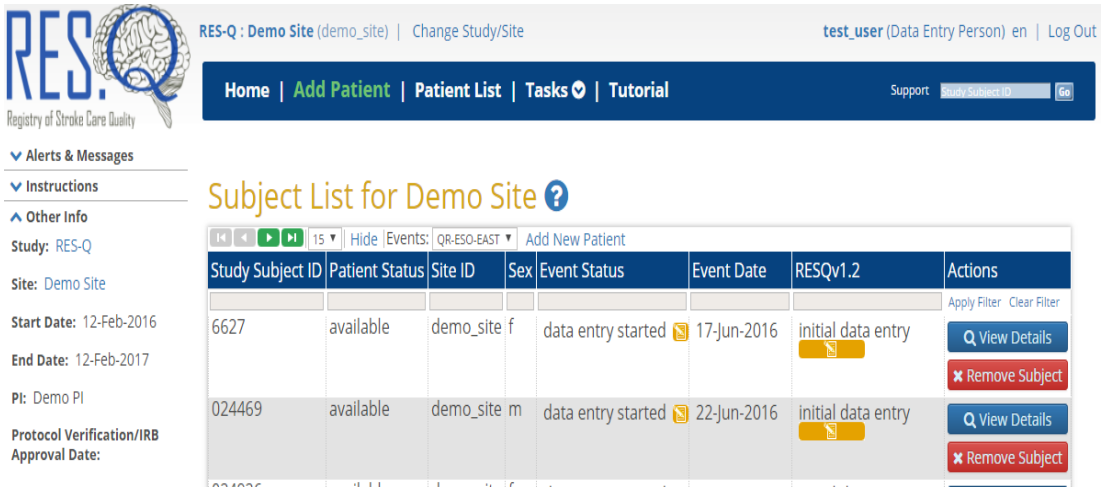
ACKNOWLEDGE & HONOUR

TEAMS AND INDIVIDUALS COMMITTED TO EXCELLENCE IN STROKE PRACTICE.

	STROKE READY HOSPITAL	GOLD STROKE CENTRE	PLATINUM STROKE CENTRE	CENTRE OF EXCELLENCE
Registration requirements	Registration criteria met plus 20 patients captured as baseline	Registration criteria met plus the criteria below met for last 100 stroke patients	Registration criteria met plus the criteria below met for last 200 stroke patients	Registration criteria met plus the criteria below met for last 500 stroke patients
DTN time < 60 mins		50%	75%	75%
DTN time < 45 mins				50%
Recanalization procedure rate		5%	15%	25%
% of stroke patients that received CT or MRI scan		80%	85%	90%
% of ischemic stroke patients with antiplatelet therapy at discharge		80%	85%	90%
% of ischemic stroke patients with AF with anticoagulation at discharge		80%	85%	90%
% of stroke unit				



RES-Q is a **RE**gistry of **S**troke Care **Q**uality developed as an ESO initiative to help physicians in involved countries to improve their stroke care system.



http://www.qualityregistry.eu/resq/pages/login/login

Next activity

- Post Stroke service care
- Promote stroke awareness
- Standardized stroke center increase
- Set standardized of Stroke network increase
- Promote activity to controlled stroke risk factors and risk patient .
- Set network to AEC countries.
- Benchmark to Europe
- Promote comprehensive stroke center
- Reduce death from cerebral hemorrhge

Thank you for your attention