

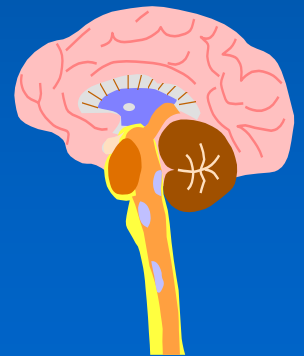
TIA & Minor Stroke

Diagnosis & pathways

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OBJECTIVES

- Impact and importance of Stroke
- Practical Diagnostic pointers of TIAs & minor Stroke
- Stroke pathways & what is on offer at Lewisham

STROKE 17 years ago !!!

- HISTORY Stroke
- EXAMINATION Stroke
- MANAGEMENT Prayers
Will

Stroke care is a national priority!!

- 1999 National Clinical Guidelines for Stroke
National Sentinel Audit - RCP
- 2001 NSF for older people (5)
- 2005 National Audit Office report
- 2007 National Stroke Strategy
Mending hearts & brains - Roger Boyle
- 2008 HfL Stroke project

Impact of Stroke

- 3rd commonest cause of death
- Commonest cause of adult disability
- In a 250,000 population: 400 first strokes, 150 repeat strokes; 150 TIA's
- 15% ischaemic strokes preceded by TIA
- NHS £3 billion / year National Audit Office
UK economy £7 billion / year www.nao.org.uk

British Museum: History of Medicine

6. Occupation and usual address Plumber (Retired) 340 North Street Bedminster Bristol	
7(a) Name and surname of informant June Jones	(b) Qualification Daughter P
(c) Usual address 340 North Street Bedminster Bristol	
8. Cause of death 1a. Stroke 1b. High Blood Pressure 1c. ----- 11 Cardiovascular disease Certified by A Harris MB	
9. I certify that the particulars given by me above are true to the best of my knowledge and belief J Jones	
10. Date of registration Second August 2003	11. Signature of registrar E Williamson Registrar

Certified to be a true copy of an entry in a register in my custody.



Konferenz von Yalta - Die Zukunft Europas

Stroke is a medical emergency!

- 'Brain attack' 'Time is brain'
- Faster Assessment & Investigations
- Acute medical treatment
- Immediate secondary prevention
- Recognition & management of complications

Brain attack: simple principles

- Recognise symptoms
- Ring for help
- Response by health care teams
- Review CT
- Reperfusion occurs!!!!

Promoting stroke awareness

**Suspect a stroke?
Act FAST. Call 999.**

F

Facial weakness

Can the person smile? Has their mouth or eye drooped?

A

Arm weakness

Can the person raise both arms?

S

Speech problems

Can the person speak clearly and understand what you say?

T

Test these symptoms

Stroke is a medical emergency.

By calling 999 early treatment can be given which can prevent further brain damage.

Stroke helpline 0645 3033 100 www.stroke.org.uk



The Global REACH Registry

REACH is the largest global registry evaluating atherothrombotic risk, with >68,000 patients in 44 countries

- Patients had a high risk of atherothrombotic event(s)
- They had at least one of:
 - Coronary artery disease [CAD]
 - Cerebrovascular disease [CVD] (incl. stroke & transient ischaemic attack)
 - Peripheral arterial disease [PAD]
- OR ≥ 3 risk factors only
- Vascular events and hospitalisations will be tracked over 4 years

44% of the REACH population had diabetes

Vascular disease – one event leads to another

Original Event = Stroke

MI Risk

- 2-3 x greater risk^{2*}

Stroke Risk

- 9 x greater risk³

Original Event = MI

MI Risk

- 5-7 x greater risk¹⁺

Stroke Risk

- 3-4 x greater risk²⁺⁺

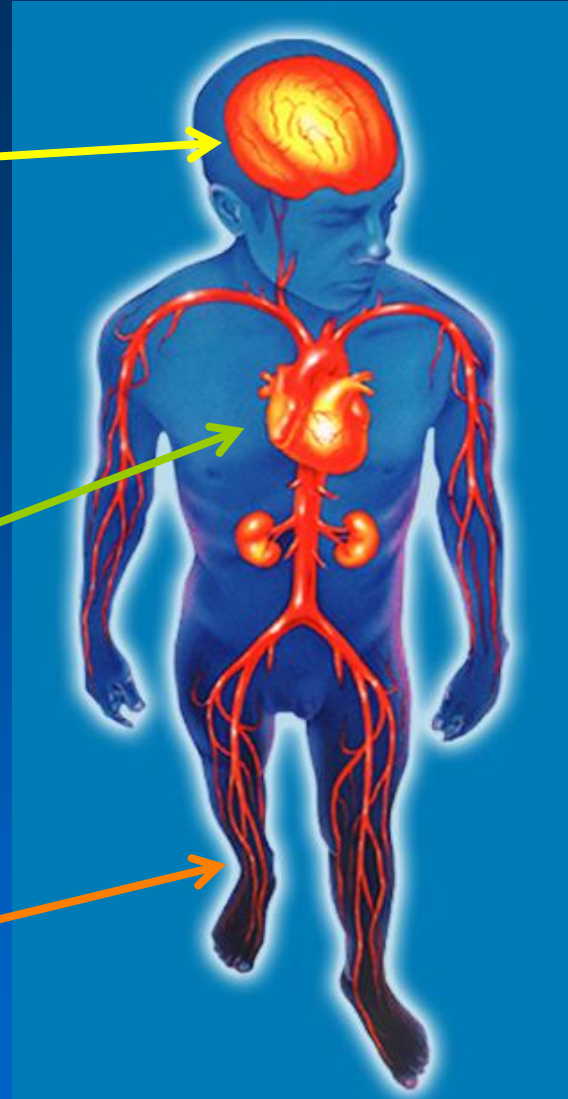
Original Condition = PAD

MI Risk

- 4 x greater risk^{4**}

Stroke Risk

- 2-3 x greater risk³⁺⁺



Diabetes (type 2)

Because of the increased risk associated with diabetes, it should be considered a cardiovascular risk equivalent to a non-diabetic patient with previous MI

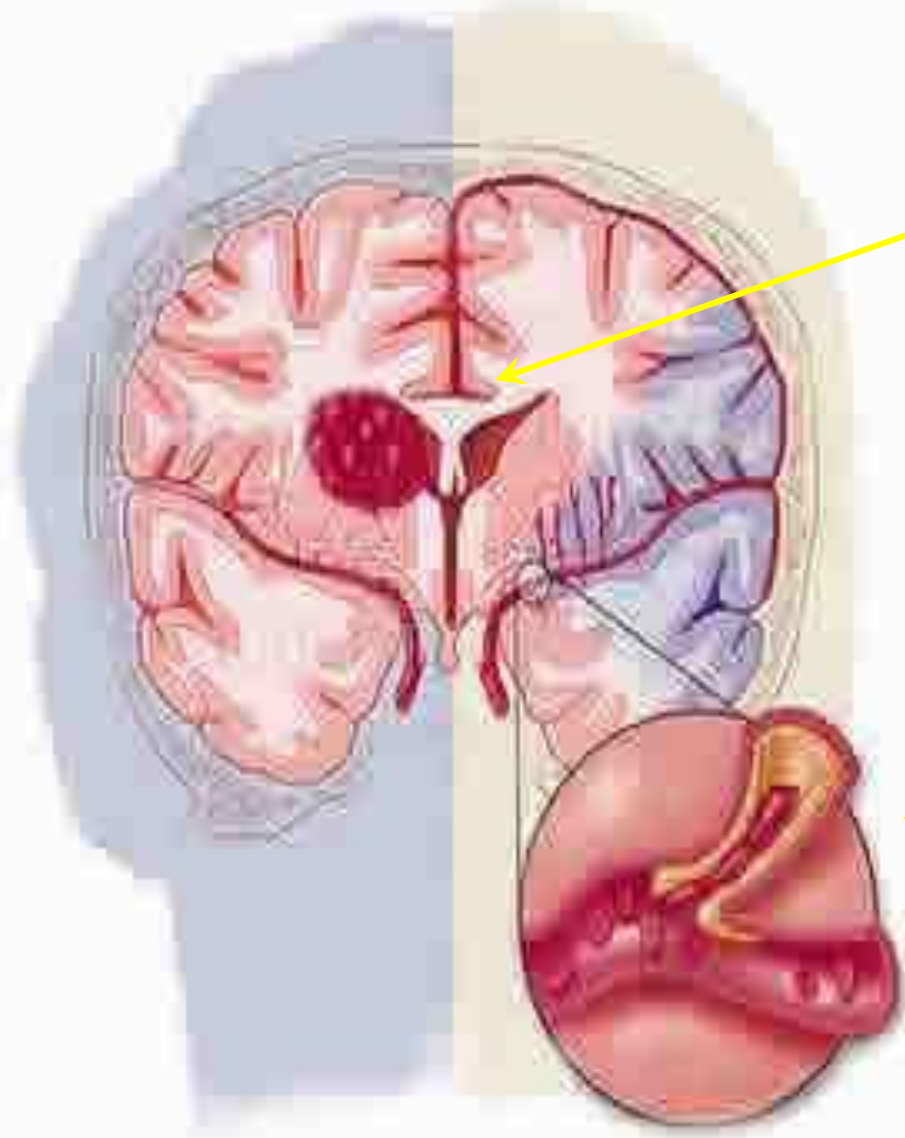
Data is increased risk vs general population (%)

1. Adult Treatment Panel II. *Circulation* 1994; 89:1333–63. 2. Kannel WB. *J Cardiovasc Risk* 1994; 1: 333–9.

3. Wilterdink JI, Easton JD. *Arch Neurol* 1992; 49: 857–63.

4. Criqui MH et al. *N Engl J Med* 1992; 326: 381–6.

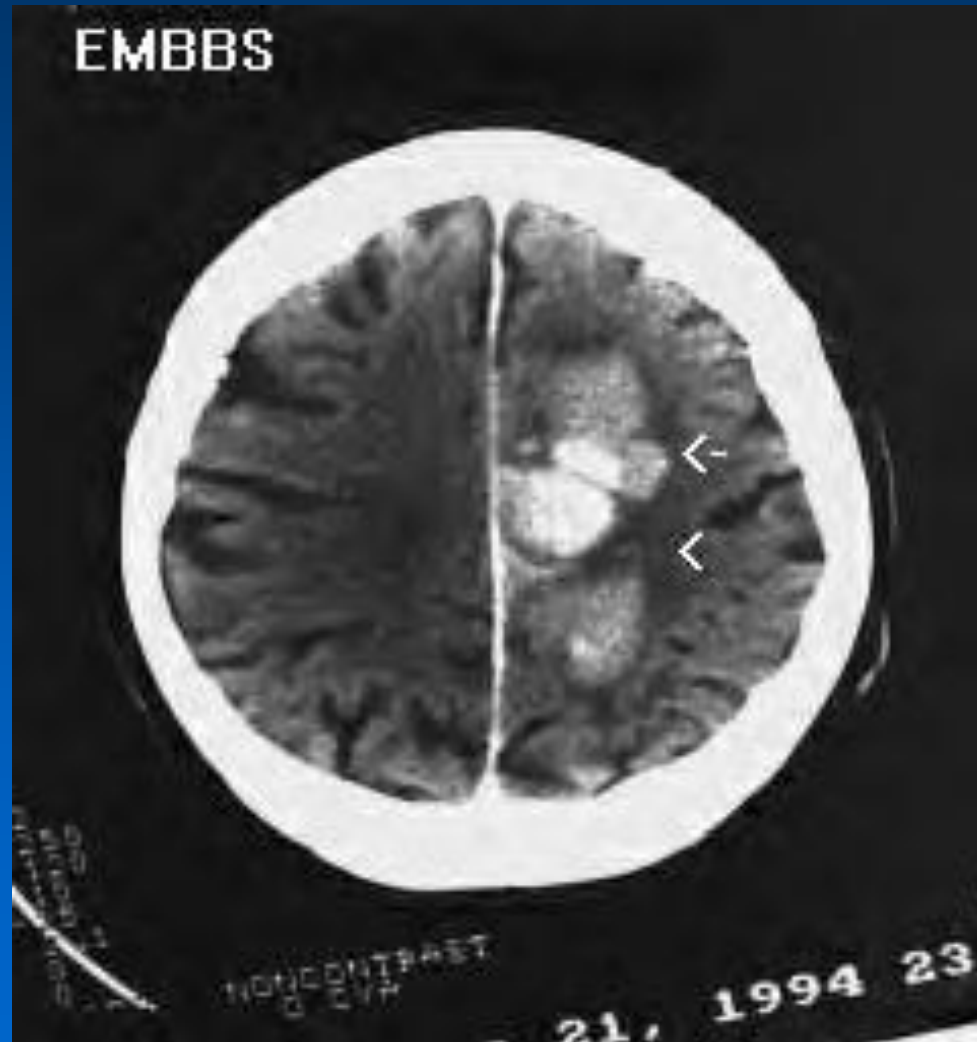
**CLINICAL FEATURES
& GUIDE TO DIAGNOSIS of
Stroke & TIA**



Cerebral
haemorrhage
(bleeding) – 15%

Cerebral infarction
(blood clot) – 85%

Primary Intracerebral Haemorrhage



Cerebral Infarction



TIA: loss of cerebral function

- Characterised by **Negative** symptoms :
loss of power or sensation, aphasia, dysphagia
- **NOT positive** symptoms:
limb jerks, visual hallucinations, flashing lights, tingling,
shooting pains, fits
- TIA **do not** usually cause:
transient LOC, confusion, generalised weakness,
transient forgetfulness, hearing loss and vertigo

Diagnosis of TIA not easy!

- $K=0.65$ between neurologists
- $K=0.31$ for territory Carotid vs VB
- $K=0.44$ between neurologist vs DW imaging
- Never say never in medicine
- Never 100% right!!; 30-40% non-TIA diagnoses

Practical tips in diagnosing TIA

- Most TIAs last 'minutes' than hours
- Most TIAs start 'suddenly' (acutely)
- Focal neurological symptoms / signs usually results from cerebral ischaemia
- Negative symptoms rather than positive ones
- Dysphagia and Neglect are generally not reported: please seek actively in history & examination

Common mimics of TIA

Syncope

Seizures

Sepsis

pSychology

Differential Diagnosis of TIA

Migraine

Epilepsy: partial seizure / Todd's paresis

Transient global amnesia

Structural intracranial lesions

Subdural haematoma

Tumour

AVM/aneurysm

Metabolic/toxic disorders

Hypoglycaemia and other acute metabolic disorders

Hypertensive and other encephalopathies

CNS infections: encephalitis/ abscess

Labyrinthine disorders

Vestibular neuronitis

BPPV/Ménière's disease

Psychological disorders

Hyperventilation/panic attacks

Somatisation/conversion disorder

Head injury

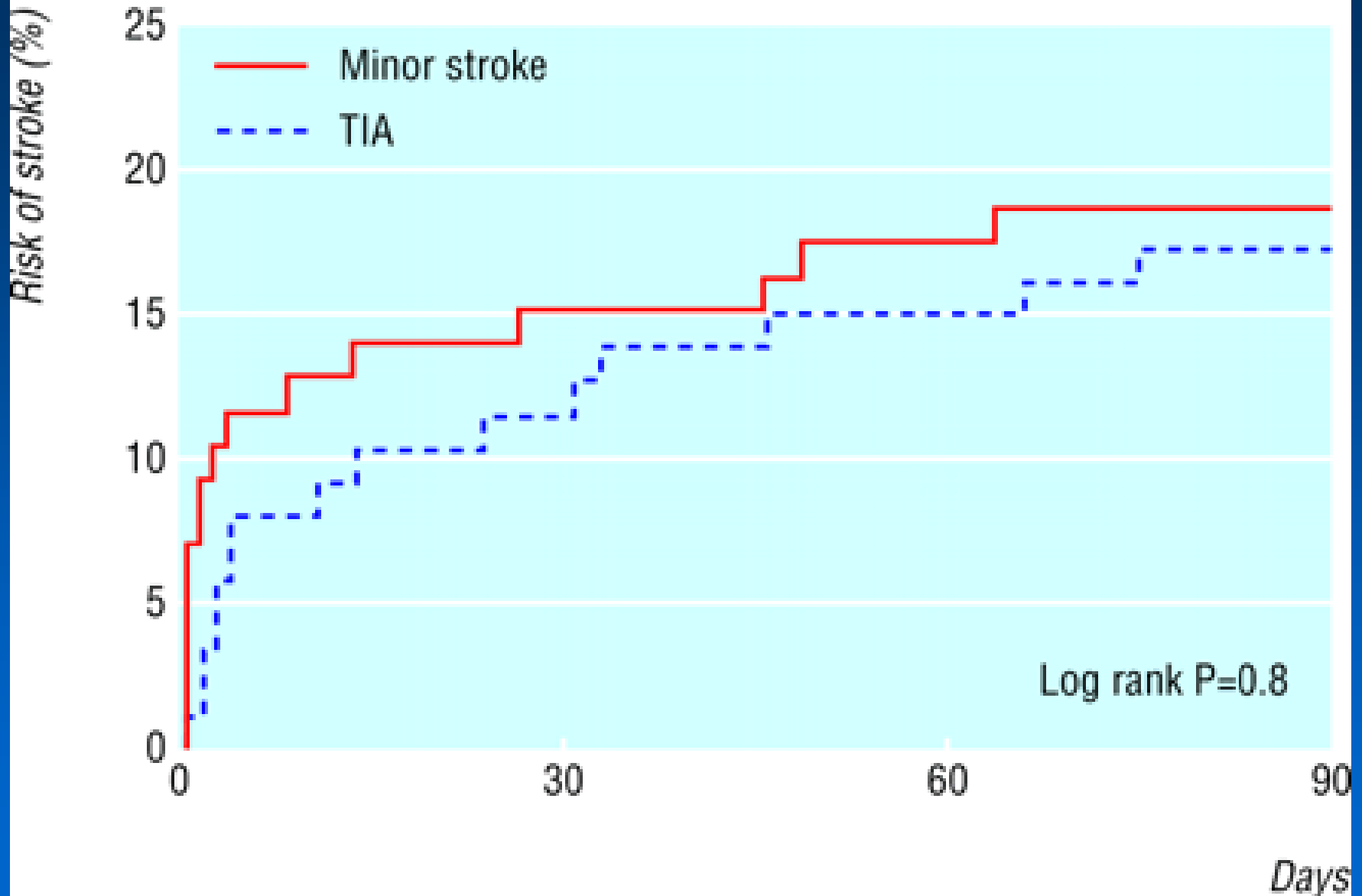
Multiple sclerosis

Neuromuscular disorders

Mononeuropathy/radiculopathy

Myasthenia gravis

Oxvasc Study



High risk TIA: ABCD² rule

ABCD risk stratification to identify stroke risk

A ge	> 60	1
B pressure	>140/90	1
C linical	weakness	2
	speech only	1
D uration	> 60 min	2
	10-59 min	1
	<10 min	0
D iabetes		1

Risk stratification: ABCD²

Score % risk of stroke within 2 weeks

1	0
2	0
3	0
4	1
5	12%
6-7	31%

- >3 admit
- Higher risk do present early after TIA
- **Admit TIA on anticoagulants**

Investigations

- Blood tests
 - FBC, ESR
 - U&E, Blood glucose, LFT, Lipid profile
 - ? Clotting screen & *Thrombophilia screen*
 - ? *Autoantibodies: anticardiolipin*
 - ? *Lupus anticoagulant & Sickle cell*
 - ? *Homocysteine*
- ECG and ? CXR
- Brain imaging (CT or MRI \pm MRA)
- Carotid artery imaging (U/S or Angiography)
- Echocardiography (TTE / ?TOE)
- 24 hour tape

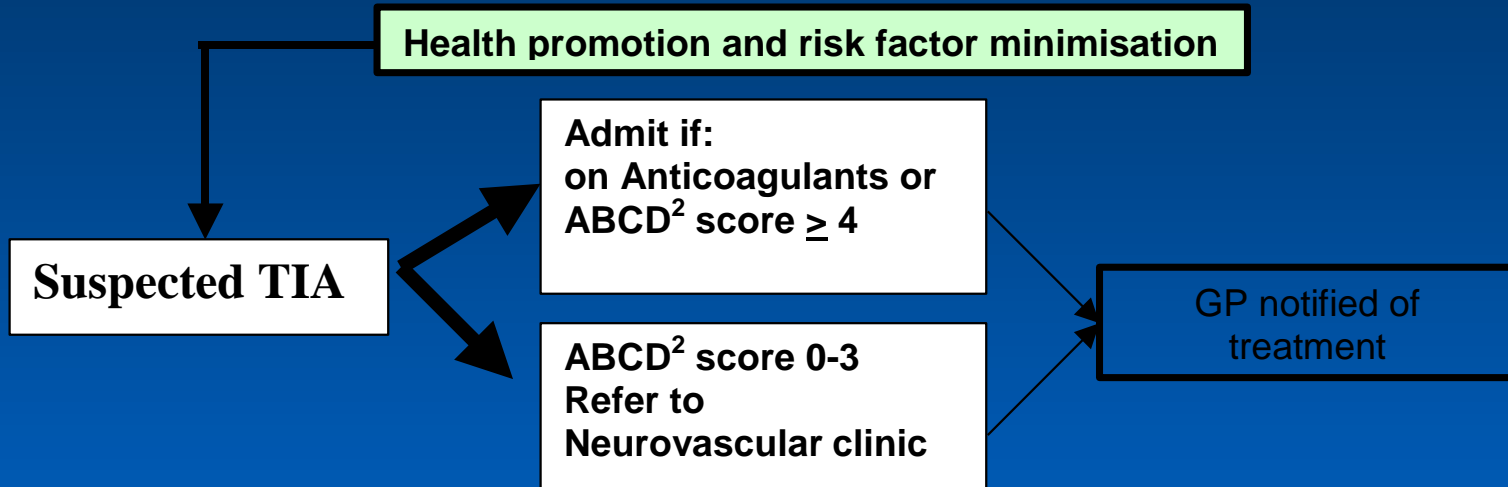
Stroke services at Lewisham



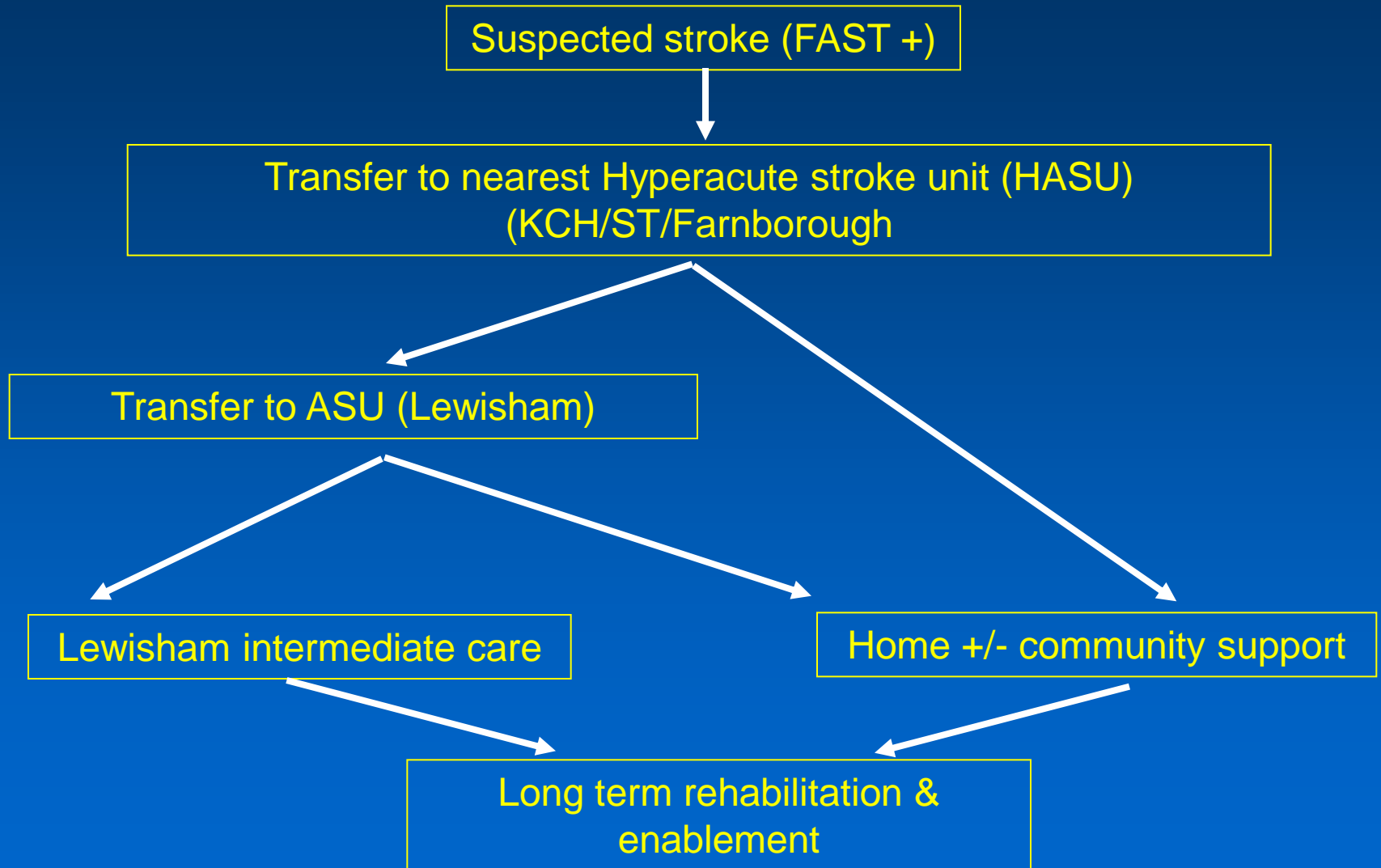
Stroke services at Lewisham

- Acute stroke ward rounds
- Acute & Rehabilitation Stroke unit
- Neurovascular clinic
- Community therapy teams
- Stroke Strategy & commissioning groups
- Lewisham integrated stroke team

TIA PATHWAY



STROKE PATHWAY across region

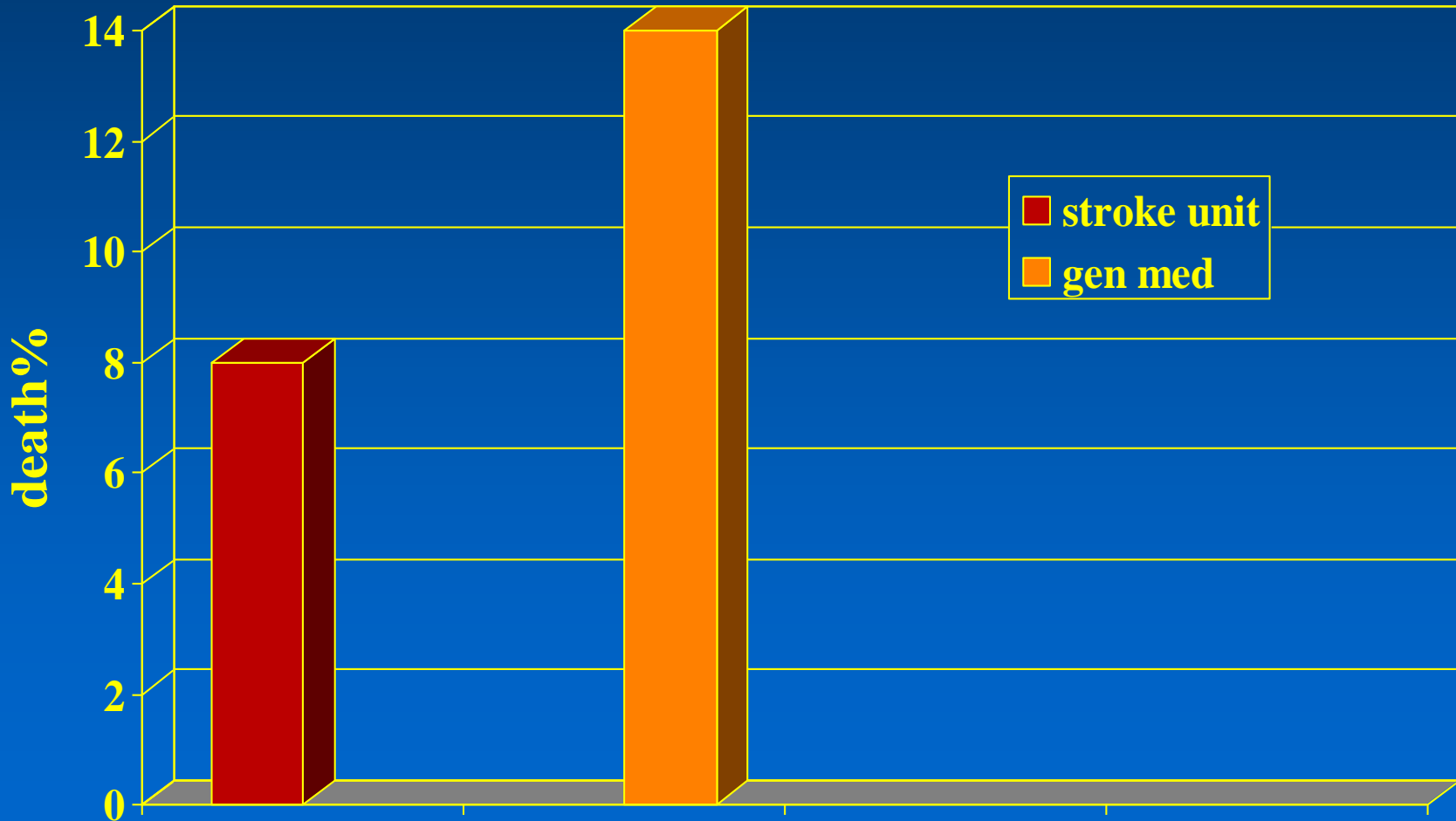


Acute Stroke Care

- 2004: Acute stroke ward rounds
- Stroke physician + Neurophysiotherapist
- Admissions within 24 hours reviewed
- 375-400 assessments per year
- Rapid assessment, quicker transfer to stroke unit and early referral to intermediate care
- Time from admission to transfer to unit reduced from 7-10 days to 0 – 1 day!

Acute stroke care – Acute Stroke Unit

Indredavik et al, 1999



Acute and Rehabilitation Stroke unit

- 22 bedded stroke unit (Beech: flex up to 28)
4 beds for acute monitoring
- 8 beds in a medical ward (1996)
- Multidisciplinary, specialist expertise,
geographically defined unit
- Monthly in-house training programme

Stroke Unit Structure

- Medical input
- Nursing
- Physiotherapy
- Occupational therapy
- Speech & Language therapy
- Dietician
- Family support worker (SA)
- Social Worker
- Pharmacist

2 wkly Neurovascular Clinic

- Aims:
 - rapid specialist assessment of non-admitted TIA/stroke
 - investigations to diagnose/ exclude TIAs
 - risk stratification to prevent further strokes
 - information on secondary stroke prevention
 - facilitate long-term follow-up if required

Neurovascular Clinic

- 250-275 new and 500 follow-up patients/year
 - Stroke Physician + SpR + SHO
 - Stroke unit staff nurses
 - Neurophysiotherapist
 - Family support worker (SA funded)
- All patients offered an appt < week of referral
- Assessments using proformas (Medical & nursing)
- CT Brain & Carotid Dopplers on same day

Atrial
fibrillation

Previous stroke/TIA
(5-13x)

Smoking

Age

Excess
alcohol

Family
history

High blood
pressure

Coronary
artery disease

Diabetes

High
cholesterol



RECENT DEVELOPMENTS OF THE LEWISHAM STROKE SERVICE

Health warning but no apologies!!!!



RECENT DEVELOPMENTS - 1

- Establishing a 4-bedded acute Stroke unit
- Refining and launching the in-hospital Acute Stroke Pathway
51% being admitted directly vs 0% before
- Better data collection using multiple sources of notification
- Written local guidelines for management of stroke
- Twice weekly neurovascular service
- 'Transfer of care' acute pathway from HASU to ASU
- Research nurse: SE England Stroke Research Network

RECENT DEVELOPMENTS -2

- Lewisham Stroke commissioning group – facilitated our decade-long dreams!!
- Lewisham Integrated Stroke Project (LISP): a pilot National SIP to establish an integrated pathway across acute and community settings. This dismantled organisational and service barriers and enabled the development of 3 new service specifications:
 - Stroke Association Family & Carer Support Co-ordinator
 - Communication Support Worker
 - Lewisham Integrated Stroke Team

RECENT ACHIEVEMENTS

- Healthcare for London Stroke Bid:
 - high quality Acute Stroke (AS) and TIA services
 - 37 criteria for AS and 25 for TIA, scored 3/5 & 4/5
 - A1 tariff uplift (70% above baseline)
 - high quality care e.g. speed and quality of MDT assessment & patient & carer involvement
- Vital signs for stroke (% spending >90% on stroke unit) improved in 2009 from 41% to 78%
- National Sentinel Stroke Audit (2008) (n=60):
 - 82 in 9 key indicators (national average: 72)
 - more patients had early CT Scans (69% v 59%)
 - multidisciplinary goal setting (100 v 86%)
- Improving efficiency of bed usage: from 441(2006) - 667(2009)

Finally.....

- For further information please contact:

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“it is the duty of the physician to explain to the patient, or to his friends, that the condition is past relief, that medicines and electricity will do no good, and that there is no possible hope of cure”



William Osler