Westcliffe Medical Practice
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Westcliffe Cardiology Service

Models for Screening for Atrial Fibrillation

Dr Matthew Fay

Heart Rhythm Congress 2009
HRC2009
18th – 21st October 2009
Hilton Birmingham Metropole Hotel, Birmingham, UK
Education Technology Diversity

Acknowledgements

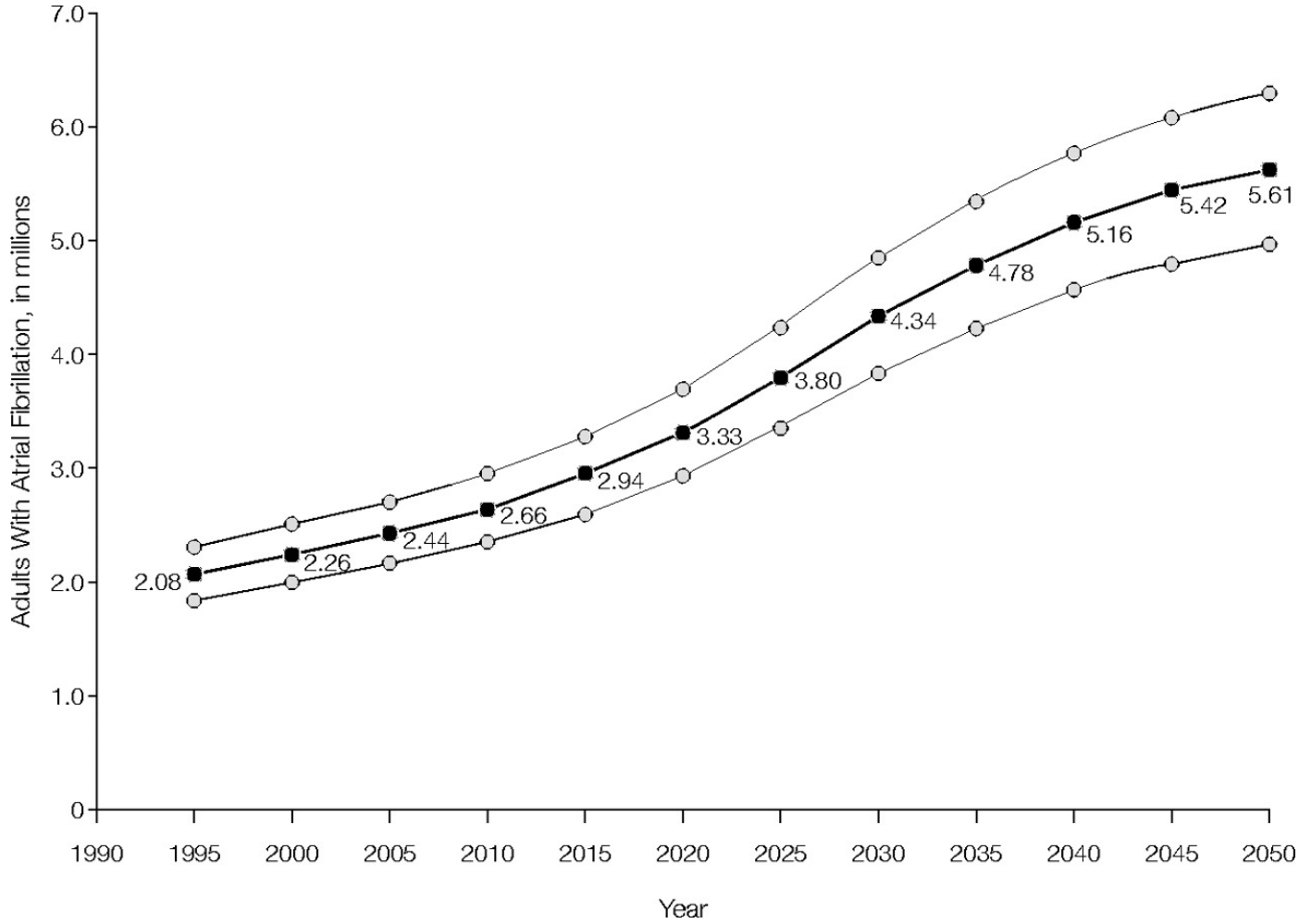
- Atrial Fibrillation Association
- Dr Andreas Wolff
- Dr Shane Gordon

Why is AF important?

- AF prevalence rate in primary care is 1.2%
  - 600,000 in England alone
- Atrial fibrillation predisposes patients to stroke, increasing stroke risk by 500-700%
- 12,500 strokes per year (of the 150,000 total) attributable to AF
  - 4,300 deaths in hospital
  - 3,200 discharges to residential care
  - 8,500 deaths within the first year

DH Figures 2007

Projected Number of Adults With Atrial Fibrillation in the United States Between 1995 and 2050

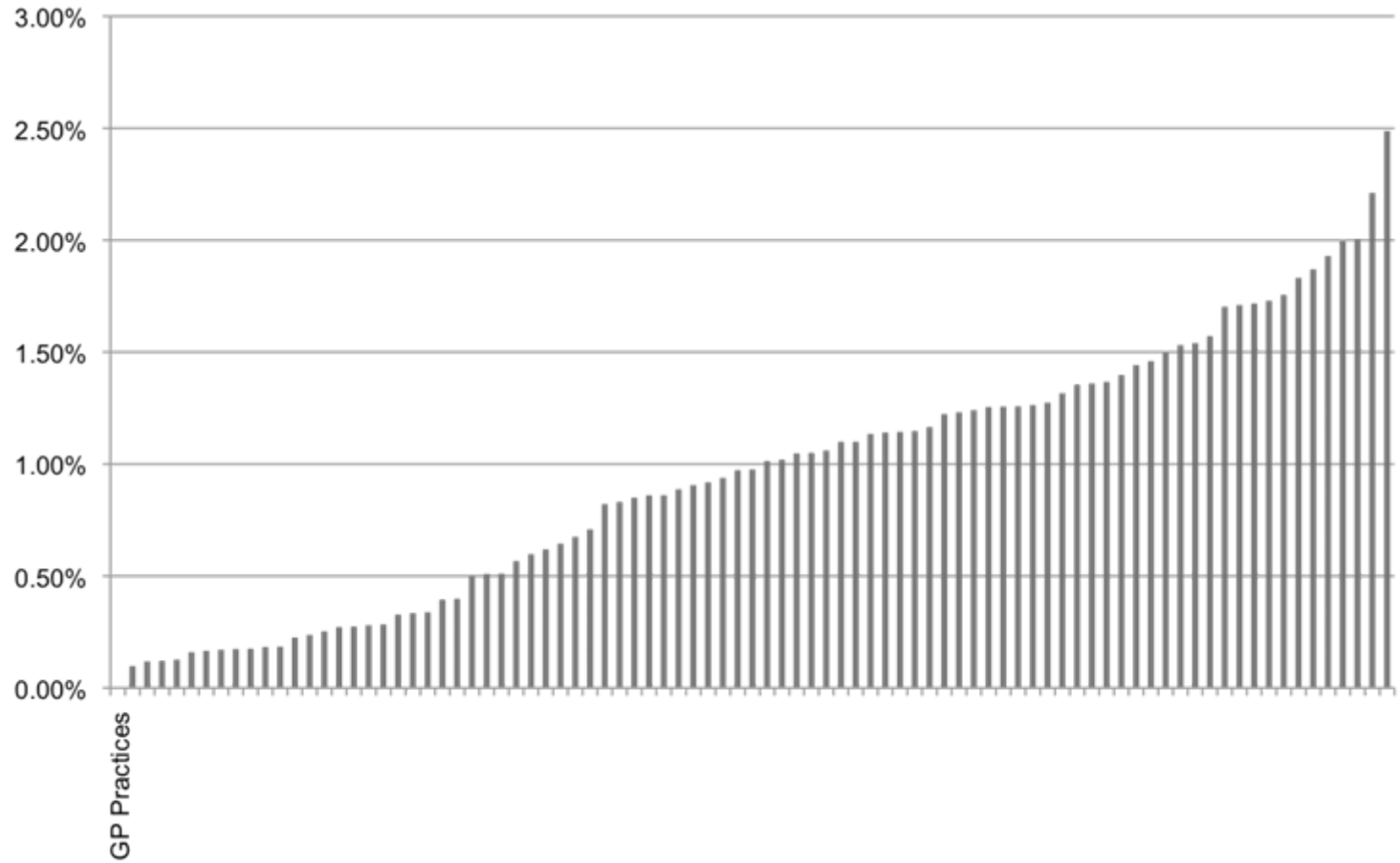


Go, A. S. et al. JAMA 2001;285:2370-2375.

JAMA

- Do we know who has atrial fibrillation?

Prevalence AF by practice



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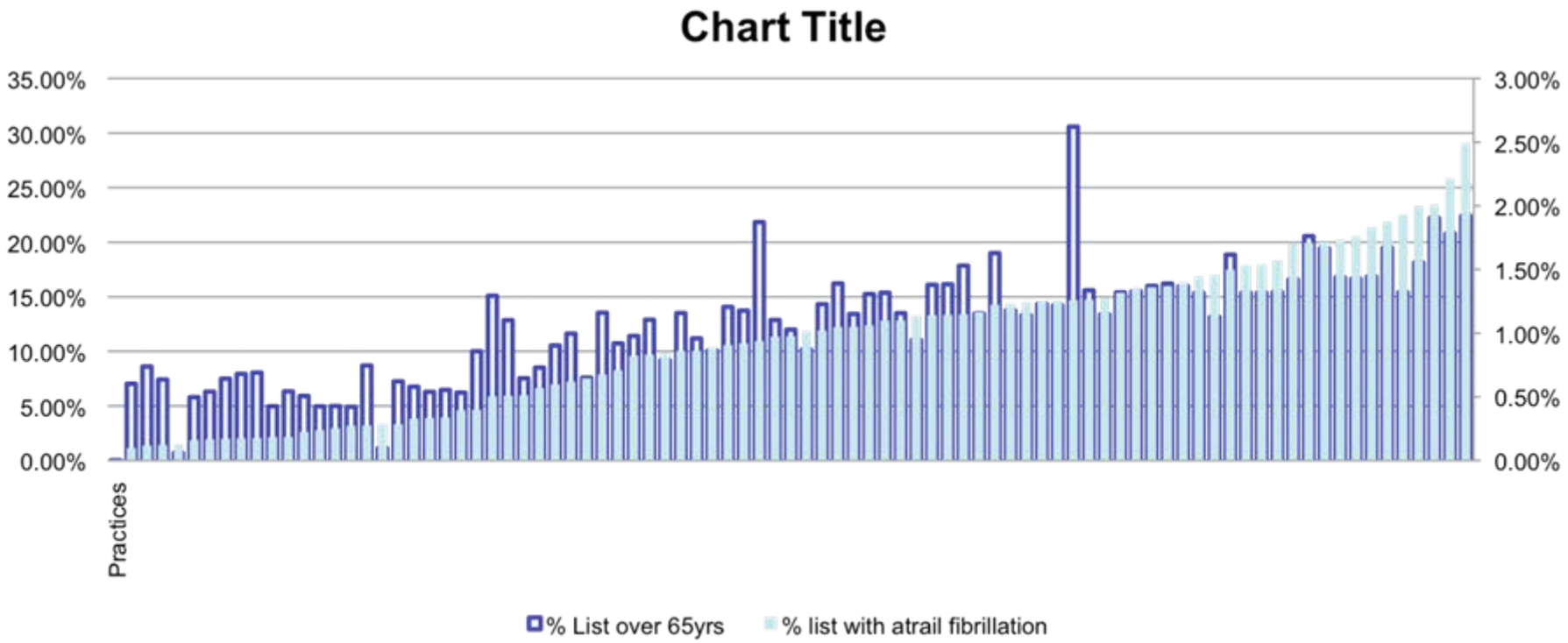
Direct Comparison



What's the true prevalence at present?

Table 2 Prevalence with 95% CI of AF at baseline by gender and age. The Rotterdam Study 1990–93 ($n = 6808$)

Age group (years)	All			Men			Women		
	n	Cases	Cases/*n*[a]	*n*	Cases	Cases/*n*[a]	*n*	Cases	Cases/*n*[a]
55–59	1161	8	0.7 (0.4–1.4)	485	4	0.8 (0.3–2.1)	676	4	0.6 (0.2–1.5)
60–64	1411	24	1.7 (1.2–2.5)	620	16	2.6 (1.6–3.4)	791	8	1.0 (0.5–2.0)
65–69	1291	51	4.0 (3.0–5.2)	597	31	5.2 (3.7–7.3)	694	20	2.9 (1.9–4.4)
70–74	1130	68	6.0 (4.8–7.6)	464	32	6.9 (5.0–9.6)	666	36	5.4 (4.1–7.0)
75–79	855	77	9.0 (7.3–11.1)	330	43	13.0 (9.8–17.1)	525	34	6.5 (4.7–8.9)
80–84	533	72	13.5 (10.9–16.7)	164	25	15.2 (10.5–21.5)	369	47	12.7 (9.7–16.5)
≥85	427	76	17.8 (14.5–21.7)	95	17	17.9 (11.5–26.8)	332	58	17.5 (13.8–21.9)
All	6808	376	5.5 (5.0–6.1)	2590	165	6.0 (5.0–7.0)	4053	206	5.1 (4.5–5.8)

[a]Denotes % (95% CI).

Heeringa J. EHJ 2006; 27: 949 – 953

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After 6.9 years mean follow up: prevalence 8.3%

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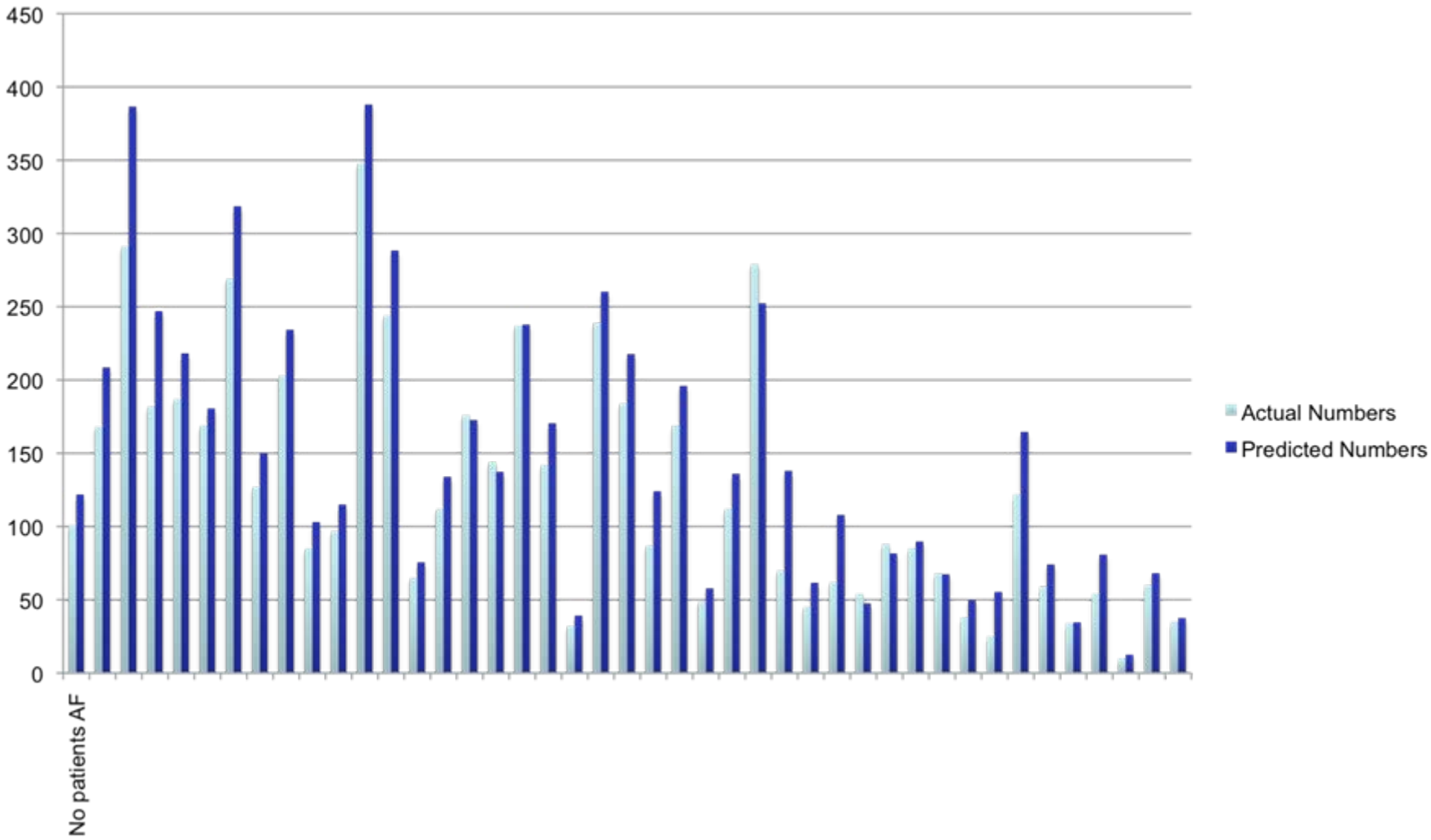

BMJ- August 2007 – Fitzmaurice et al

- This multicentered, cluster, randomized controlled trial I of computerized general practices in England included 14,802 patients aged 65 years or older from 50 practices in England.
- Half the practices were slated as intervention ones and were randomly allocated to either systematic screening or opportunistic case finding.
- The primary endpoint was new cases of AF during the 12-month study period.

Table 3 | Prevalence and detection rate of new cases by age at start of study and sex. Figures are numbers (percentages)

	Men			Women			
Group	65-74	75-84	≥85	65-74	75-84	≥85	Total
Baseline prevalence							
Control	74/1216 (6.1)	84/703 (11.9)	25/156 (16.0)	44/1378 (3.2)	106/1050 (10.1)	56/420 (13.3)	389/4923 (7.9)
Opportunistic	70/1304 (5.4)	63/650 (9.7)	24/148 (16.2)	48/1448 (3.3)	91/1005 (9.1)	44/375 (11.7)	340/4930 (6.9)
Systematic	69/1318 (5.2)	67/647 (10.4)	15/154 (9.7)	68/1391 (4.9)	70/1022 (6.8)	50/396 (12.6)	339/4928 (6.9)
12 month prevalence							
Control	81/1213 (6.7)	91/699 (13.0)	27/151 (17.9)	55/1377 (4.0)	122/1044 (11.7)	60/418 (14.4)	436/4902 (8.9)
Opportunistic	90/1303 (6.9)	77/647 (11.9)	28/148 (18.9)	59/1443 (4.1)	109/1001 (10.9)	52/373 (13.9)	415/4915 (8.4)
Systematic	90/1312 (6.9)	82/643 (12.8)	23/154 (14.9)	77/1387 (5.6)	88/1012 (8.7)	53/398 (13.5)	413/4906 (8.4)
12 month new case detection							
Control	7/1139 (0.6)	7/615 (1.1)	2/126 (1.6)	11/1333 (0.8)	16/938 (1.7)	4/362 (1.1)	47/4513 (1.0)
Opportunistic	20/1233 (1.6)	14/584 (2.4)	4/124 (3.2)	11/1395 (0.8)	18/910 (2.0)	8/329 (2.4)	75/4575 (1.6)
Systematic	21/1243 (1.7)	15/576 (2.6)	8/139 (5.8)	9/1319 (0.7)	18/942 (1.9)	3/343 (0.9)	74/4562 (1.6)

Fitzmaurice, D. A et al. BMJ 2007;335:383

- Do we know who has atrial fibrillation?

So How Do We Find Them?

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THEY COME TO YOU

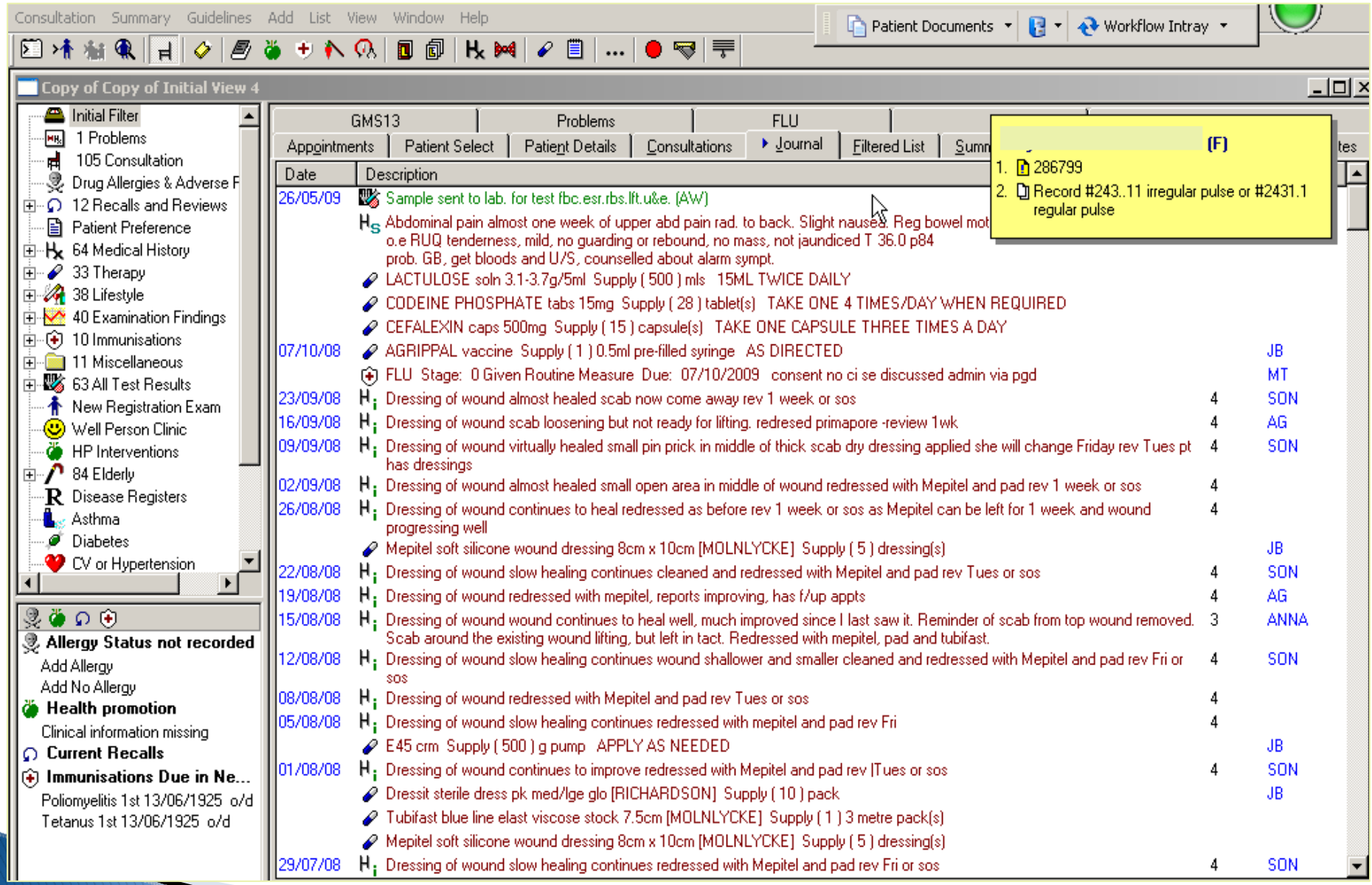
- People attend with many problems
  - Can present with breathlessness
  - Can present with fatigue
  - Can present with palpitations
  - Can present acutely with chest pain
  - And others

SEEK THEM OUT

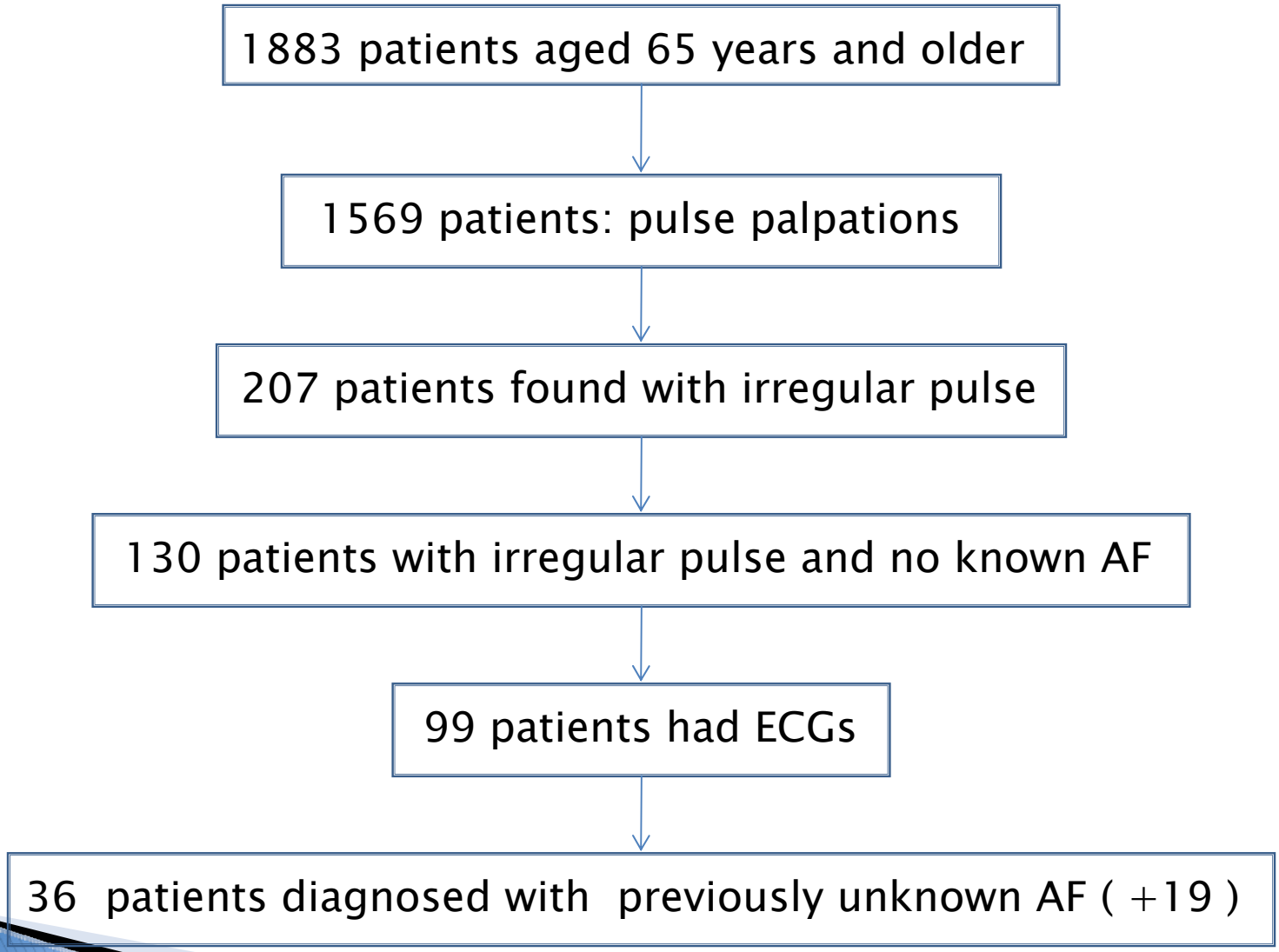
- People attend for many reasons
  - Medication reviews
  - Chronic Illness monitoring
  - Flu vaccination
  - Just for a chat

What's the best way of detecting AF in primary care?

- Atrial Fibrillation: Strategies in Primary Care – Prof M.Kirby BJC 2005
- Many patients can be identified during day-to-day practice simply by taking the pulse at the wrist to detect irregularity.


Consultation Summary Guidelines Add List View Window Help
Patient Documents
Workflow Intray
Copy of Copy of Initial View 4
Initial Filter
1 Problems
105 Consultation
Drug Allergies & Adverse F
12 Recalls and Reviews
Patient Preference
64 Medical History
33 Therapy
38 Lifestyle
40 Examination Findings
10 Immunisations
11 Miscellaneous
63 All Test Results
New Registration Exam
Well Person Clinic
HP Interventions
84 Elderly
Disease Registers
Asthma
Diabetes
CV or Hypertension
Allergy Status not recorded
Add Allergy
Add No Allergy
Health promotion
Clinical information missing
Current Recalls
Immunisations Due in Ne...
Poliomyelitis 1st 13/06/1925 o/d
Tetanus 1st 13/06/1925 o/d
GMS13
Problems
FLU
Appointments
Patient Select
Patient Details
Consultations
Journal
Filtered List
(F)
1. 286799
2. Record #243..11 irregular pulse or #2431.1 regular pulse
Date
Description
26/05/09 Sample sent to lab. for test fbc.esr.rbs.lft.u&e. (AW)
Abdominal pain almost one week of upper abd pain rad. to back. Slight nausea. Reg bowel mot
o.e RUQ tenderness, mild, no guarding or rebound, no mass, not jaundiced T 36.0 p84
prob. GB, get bloods and U/S, counselled about alarm sympt.
LACTULOSE soln 3.1-3.7g/5ml Supply (500) mls 15ML TWICE DAILY
CODEINE PHOSPHATE tabs 15mg Supply (28) tablet(s) TAKE ONE 4 TIMES/DAY WHEN REQUIRED
CEFALEXIN caps 500mg Supply (15) capsule(s) TAKE ONE CAPSULE THREE TIMES A DAY
07/10/08 AGRIPPAL vaccine Supply (1) 0.5ml pre-filled syringe AS DIRECTED JB
FLU Stage: 0 Given Routine Measure Due: 07/10/2009 consent no ci se discussed admin via pgd MT
23/09/08 Dressing of wound almost healed scab now come away rev 1 week or sos 4 SON
16/09/08 Dressing of wound scab loosening but not ready for lifting. redresed primapore -review 1wk 4 AG
09/09/08 Dressing of wound virtually healed small pin prick in middle of thick scab dry dressing applied she will change Friday rev Tues pt has dressings 4 SON
02/09/08 Dressing of wound almost healed small open area in middle of wound redressed with Mepitel and pad rev 1 week or sos 4
26/08/08 Dressing of wound continues to heal redressed as before rev 1 week or sos as Mepitel can be left for 1 week and wound progressing well 4
Mepitel soft silicone wound dressing 8cm x 10cm [MOLNLYCKE] Supply (5) dressing(s) JB
22/08/08 Dressing of wound slow healing continues cleaned and redressed with Mepitel and pad rev Tues or sos 4 SON
19/08/08 Dressing of wound redressed with mepitel, reports improving, has f/up appts 4 AG
15/08/08 Dressing of wound wound continues to heal well, much improved since I last saw it. Reminder of scab from top wound removed. Scab around the existing wound lifting, but left in tact. Redressed with mepitel, pad and tubifast. 3 ANNA
12/08/08 Dressing of wound slow healing continues wound shallower and smaller cleaned and redressed with Mepitel and pad rev Fri or sos 4 SON
08/08/08 Dressing of wound redressed with Mepitel and pad rev Tues or sos 4
05/08/08 Dressing of wound slow healing continues redressed with mepitel and pad rev Fri 4
E45 crm Supply (500) g pump APPLY AS NEEDED JB
01/08/08 Dressing of wound continues to improve redressed with Mepitel and pad rev ITues or sos 4 SON
Dressit sterile dress pk med/lge glo [RICHARDSON] Supply (10) pack JB
Tubifast blue line elast viscose stock 7.5cm [MOLNLYCKE] Supply (1) 3 metre pack(s)
Mepitel soft silicone wound dressing 8cm x 10cm [MOLNLYCKE] Supply (5) dressing(s)
29/07/08 Dressing of wound slow healing continues redressed with Mepitel and pad rev Fri or sos 4 SON

Opportunistic computer prompted screening 5/08 – 5/09



Key Facts

- 83.3% screened opportunistically
- 13% with irregular pulse
- 6.3% had ECGs
- 36% had AF on ECG
- Number needed to screen 43
- Change in prevalence 1.32 -> 1.82%
- Prevalence of 65ys and older: 10.9%

Conclusion

- Even Jo Blog's practice can do it
- Requires little resources
- Requires virtually no training
- It is cost effective
- It really works: 38% increase in AF prevalence

TAKE
A
PULSE

Undiagnosed AF

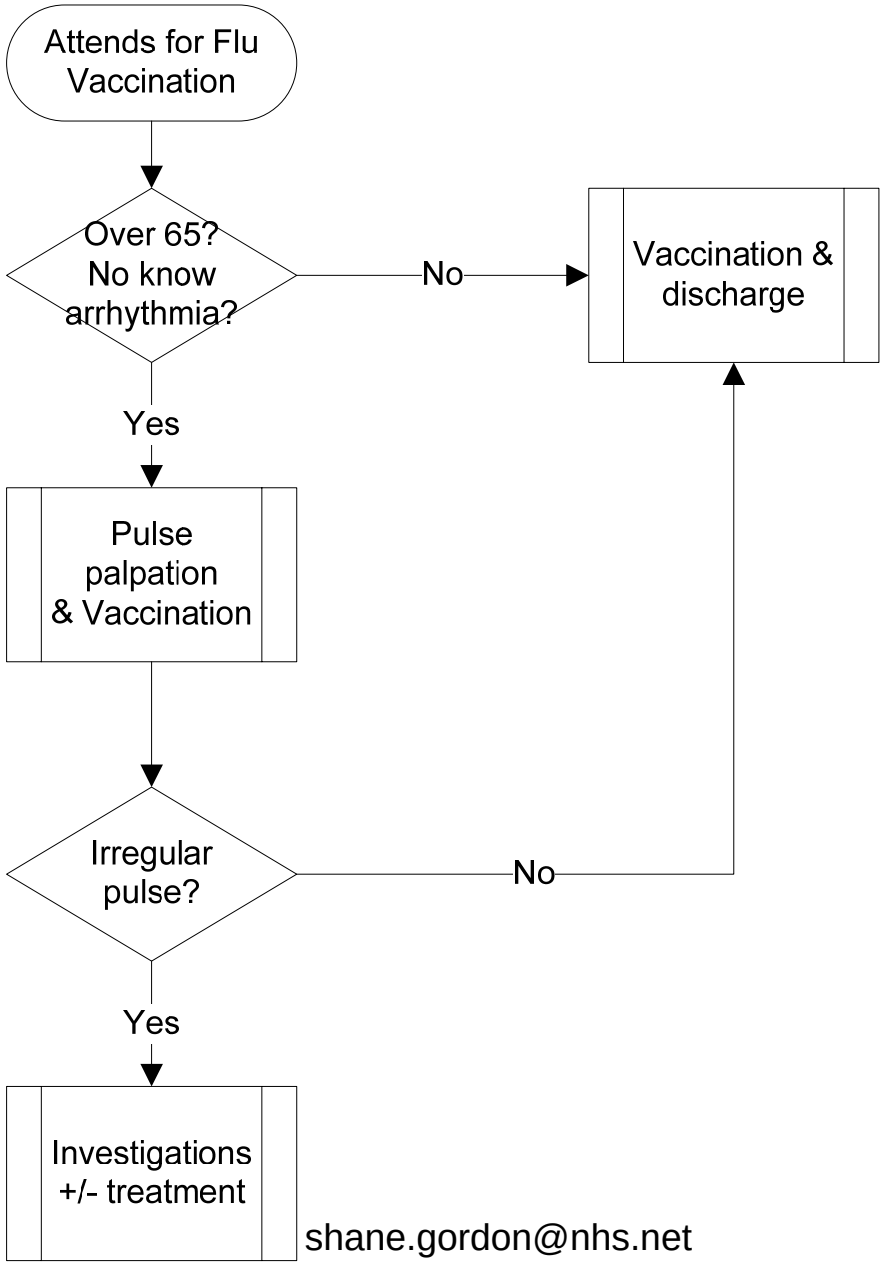
QoF Prevalences

- AF
  - National 1.2%
  - North East Essex 1.6% average (up to 4.8% in some practices)
- Stroke
  - National 1.6%
  - North East Essex 1.7% (up to 4% in some practices)

Pulse Palpation at Flu Vaccination

- Essex Cardiac & Stroke Network
- Dr. Max Hickman, Chairman Colchester PBC Group

- PBC Business Case August 2008
- LES agreed Sept 2008


Attends for Flu Vaccination
Over 65? No know arrhythmia?
No
Vaccination & discharge
Yes
Pulse palpation & Vaccination
Irregular pulse?
No
Yes
Investigations +/- treatment

Outcomes

37/43 practices in N E Essex Signed up to LES

- **34,201 patients screened** in 6 weeks
  - 3154 Patients found with irregular pulse (9.2%)
  - 189 Patients found with AF (0.55%)
  - 342 Patients found with other Arrhythmias (0.99%) including 2 in Complete H. Block!

Cost-Benefit Analysis

- Of 189 patients, 10 (5%) would suffer stroke in the next year
- Treatment of AF reduces risk of stroke by 50-70%[1], therefore approx. 5 strokes will be prevented in the next year

1 - Hart RG, Benavente O, McBride R, Pearce LA. "Antithrombotic therapy to prevent stroke in patients with atrial fibrillation: a meta-analysis.." Ann Intern Med 131 (1999): 492-501

Cost-Benefit Analysis

- The annual cost of Stroke to the UK economy is £8.9bn[1]
- There are 200,000 patients suffering or surviving with stroke in the UK each year[2]
- Therefore, the annual cost of stroke is approximately £44k

1 - Saka et al. “Cost of Stroke in the UK”, Age and Ageing, 2009

2 – ONS / Stroke Association

Cost-Benefit Analysis

Outlay = £68,402k Diagnoses = 189
Cost per diagnosis = £362

Strokes prevented next year = **5** @ £44k
Annual cost saving (recurrent) = £220k

Return on investment = 322%

National Service Framework For Older People by April 2004

- 'Every general practice, using protocols agreed with local specialist services, can identify and treat patients identified as being at risk of stroke because of high blood pressure, AF or other risk factors'

Heart Improvement programme

- A priority project was established to progress the improved identification and management of patients with atrial fibrillation (AF) within primary care

Approaches

- Use age corrected prevalence data and/or individual practice data to highlight practices with potentially low rates of AF
- Support practices in screening of appropriate patients using targeted opportunistic screening
- Support practices in reviewing their protocols for dealing with AF patients to ensure that approaches are evidence-based and consistent with current best practice
- Support practices' efforts to develop appropriate treatment services such as practice-based anticoagulation
- Examine local links for services for AF patients to ensure that these patients start promptly on an effective treatment pathway, including adequate systems for onward referral and specialist treatment

What's been going on

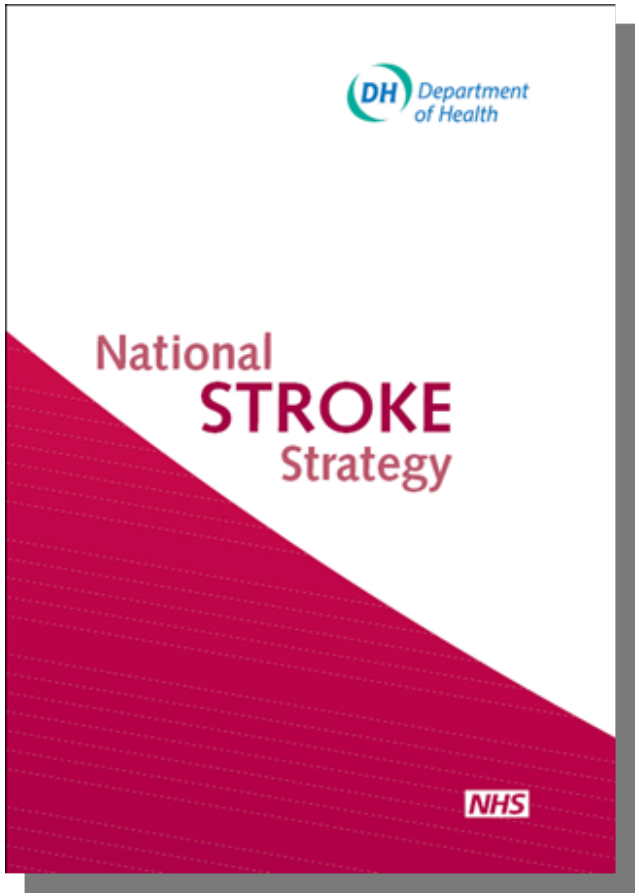
- AF screening in Flu clinics
  Bedfordshire and Hertfordshire Cardiac Network
- Information about a pilot screening project to identify possible cases of AF in a target population group of over 65 years during the annual flu clinics in a GP surgery.
- Rapid Access Arrhythmia Clinic Database
  Lancashire and South Cumbria Cardiac Network
- A blank database developed by Lancashire and South Cumbria Cardiac Network that can be used to record patient information, referred from primary care and accessing the specialist arrhythmia clinic. To gain administrator rights to the database, you will need to create yourself a new user.
- Identification and diagnosis of Atrial Fibrillation
  Lancashire and South Cumbria Cardiac Network

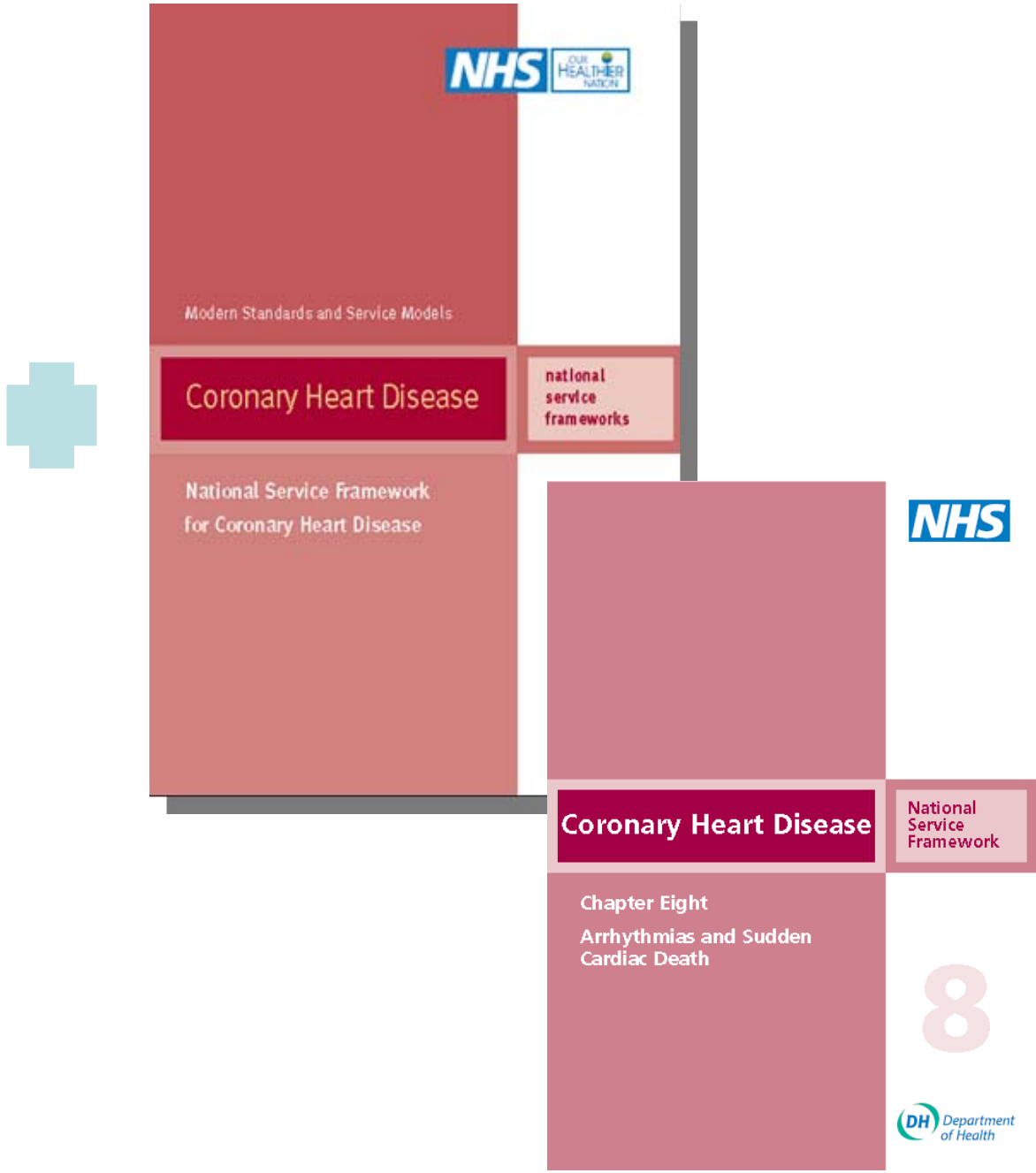
What's been going on

- Document for identifying and managing patients with AF within primary care. The document needs to be used in conjunction with the AF algorithm and AF template dataset below.
- Communication plan - Atrial Fibrillation Management in Primary Care project
  Lancashire and South Cumbria Cardiac Network
- Referral proforma for a Rapid Access Arrhythmia Service
  Black Country Cardiac Network
- Anti-coagulation/anti-platelet therapy audit
  Black Country Cardiac Network
- Hypertension guidelines
  North Trent Cardiac Network
- Creating/developing an AF register
  Leicestershire, Northamptonshire and Rutland Cardiac Network

What's been going on

- Guidelines on Diagnostics and Management of patients with Atrial Fibrillation
  Leicestershire, Northamptonshire and Rutland Cardiac Network
- AF pathway with QoF indicators
  Leicestershire, Northamptonshire and Rutland Cardiac Network
- AF treatment algorithms
  Leicestershire, Northamptonshire and Rutland Cardiac Network
- Questionnaires to audit primary and secondary care
  Anglia Cardiac Network
  .


Department of Health
National
STROKE
Strategy
NHS


NHS
Modern Standards and Service Models
Coronary Heart Disease
national service frameworks
National Service Framework for Coronary Heart Disease
NHS
Coronary Heart Disease
National Service Framework
Chapter Eight
Arrhythmias and Sudden Cardiac Death
8
Department of Health

NHS

NHS Improvement

CANCER

DIAGNOSTICS

HEART

LUNG

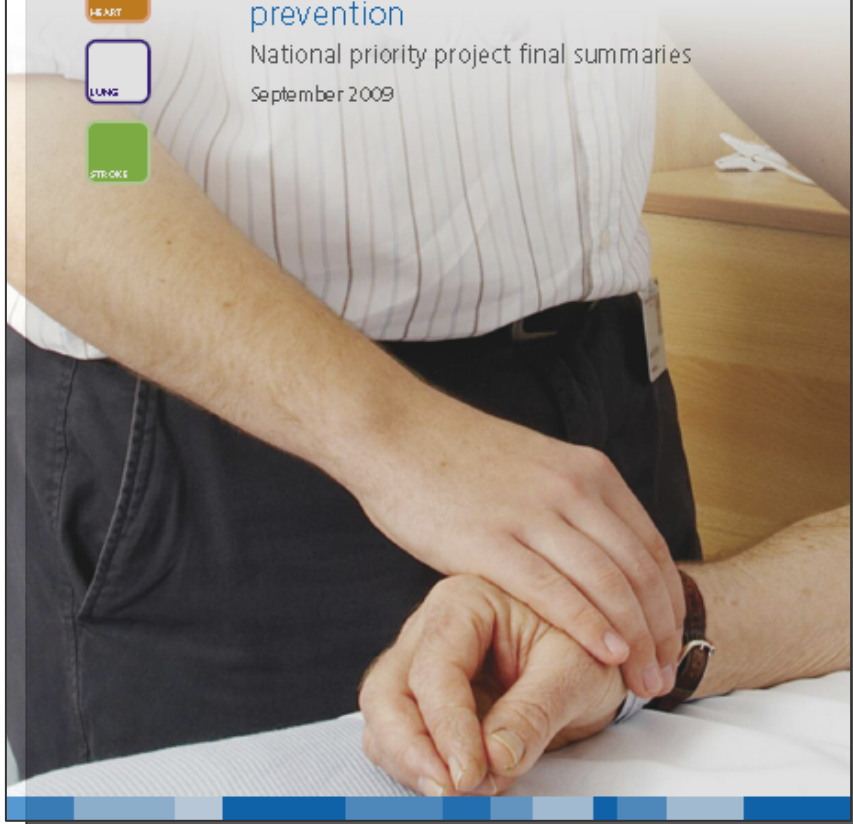
STROKE

Heart and Stroke Improvement

Atrial fibrillation in primary care: making an impact on stroke prevention

National priority project final summaries

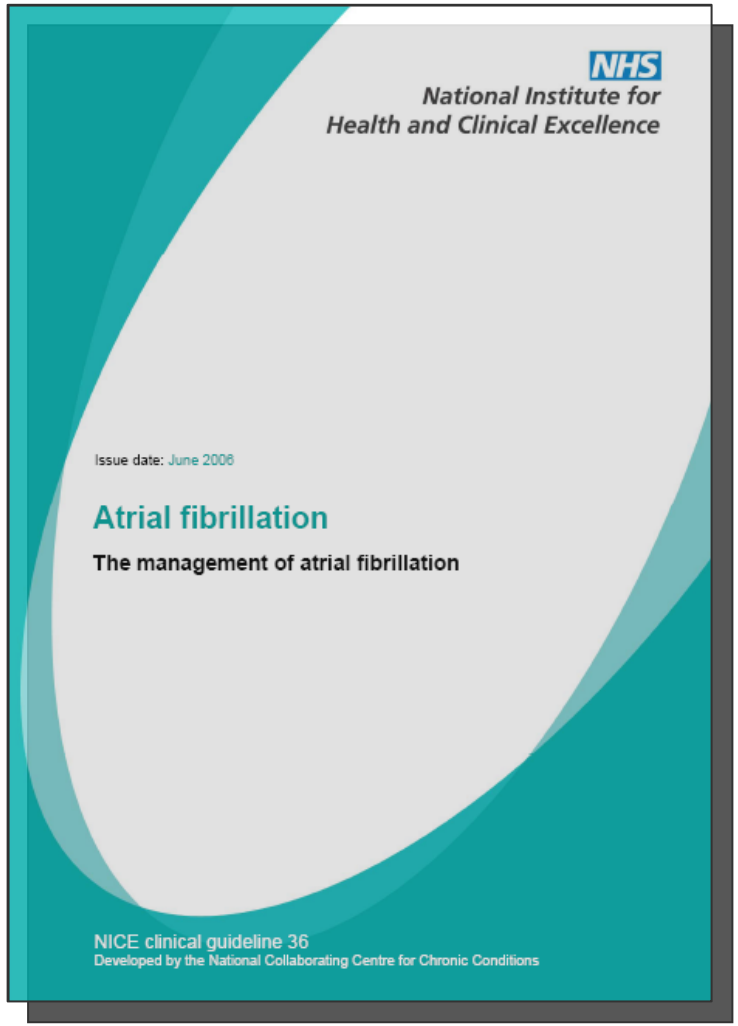
September 2009



GMS 2 Quality and Outcomes Framework 2006

Clinical Domain (655 points)	Points
Secondary Prevention of Coronary Heart Disease	89
Heart Failure	20
Stroke and TIA	24
Hypertension	83
Diabetes Mellitus	93
Chronic Obstructive Pulmonary Disease	33
Epilepsy	15
Hypothyroid	7
Cancer	11
Palliative Care	6
Mental Health	39
Asthma	45
Dementia	20
Depression	33
Chronic Kidney Disease	27
Atrial Fibrillation	30
Obesity	8
Learning Disabilities	4
Smoking Indicators	68
HOLISTIC BONUS – achievement across all clinical indicators	20

Organisational Domain (325 points)	
Records and Information	87
Information for Patients	5.5
Education and Training	31
Practice Management	17.5
Medicines Management	40
Patient Experience	108
Additional Services	36
TOTAL	1000



NHS

NHS Improvement

CANCER

DIAGNOSTICS

HEART

STROKE

Heart and Stroke Improvement

Commissioning for Stroke Prevention in Primary Care - The Role of Atrial Fibrillation

Food for thought…

- 150,000 strokes per year in the UK[1]
- 410 per day
- 17 per hour
- Within the next four hours, 10 patients with AF will have suffered a stroke
- 8 would have been known to be high risk of stroke
- 6 should have been on warfarin
- 3 will go home
- 5 will end up in residential care
- 2 will die....

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Questions

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