

## Essential Skills for Today's Pharmacy

Blood Pressure  
Atrial Fibrillation  
Medicines Optimisation  
Brief Interventions

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## Agenda

The Expanding Role of Pharmacy within Healthcare

Blood Pressure, Atrial Fibrillation, Pulse Palpation

Brief Interventions

Close

## Please...

- Interrupt
- Ask questions
- Disagree
- Heckle!



## Expanding Role of Pharmacy within Healthcare

### Pre-2000

UK Healthcare



Community Pharmacy



2000



2013



Health and Care System, DoH, April 2013,  
<http://doh.zabisco.com/html/fullsize/index.html>

## Unique Selling Points (USPs)

Accessibility & Expertise

Medicines Optimisation

Medicines Use Reviews

Healthy Living Pharmacies



## Medicines Optimisation

"...ensures people obtain the best possible outcomes from their medicines while minimising the risk of harm." <sup>1</sup>

- Aim to understand the patient's experience
- Ensure evidence based choice of medicines
- Ensure medicines use is as safe as possible



<sup>1</sup>NICE (2013), Medicines Optimisation: Draft Scope, 9 September 2013, National Institute for Health and Care Excellence, <http://guidance.nice.org.uk/CG/Wave0/076>  
[www.pharms.com/promoting-pharmacy-pdfs/helping-patients-make-the-most-of-their-medicines.pdf](http://www.pharms.com/promoting-pharmacy-pdfs/helping-patients-make-the-most-of-their-medicines.pdf)

### • ↑ Adherence

- 30 – 50% of patients *do not* take medications as prescribed <sup>2</sup>
- ~9% CVD events due to poor adherence <sup>3</sup>
- 1.4–15.4% of hospital admissions are drug related and preventable; the commonest causes were prescribing and monitoring problems (53%) and non-adherence (33%) <sup>4</sup>

### • ↓ Medicines Wastage

- ~£150 million annually in primary care <sup>1</sup>

<sup>1</sup> York Health Economics Consortium/School of Pharmacy, University of London (2010). *Evaluation of the Scale, Causes and Costs of Waste Medicines*

<sup>2</sup> NICE (2009). *Medicines Adherence*. [www.nice.org.uk/nicemedial/pdf/cg76f/ulguideline.pdf](http://www.nice.org.uk/nicemedial/pdf/cg76f/ulguideline.pdf)

<sup>3</sup> Chowdhury et al. (2013). Adherence to cardiovascular therapy. *Euro Heart J* (2013) 34, 2940-48

<sup>4</sup> Howard RL, et al. (2007). Which drugs cause preventable admissions to hospital? *BJCP*. 63(2):136-147

## Medicines Use Reviews

- ~90% of pharmacies providing MURs. 2.8m delivered in 2012/13
- Minimum of 50% should be performed with patients taking a high risk medicine (e.g. anticoagulants), patients with respiratory conditions, patients recently discharged from hospital
- Up to 50% can be with patients not in target groups:
  - Patients that pharmacists think would benefit most
  - Referrals from other HCPs (including general practice staff)

[www.psn.org.uk/contract-it/the-pharmacy-contract/](http://www.psn.org.uk/contract-it/the-pharmacy-contract/)

[www.psn.org.uk/wp-content/uploads/2013/07/Advanced-services-briefing-for-GPs-Aug-2013.pdf](http://www.psn.org.uk/wp-content/uploads/2013/07/Advanced-services-briefing-for-GPs-Aug-2013.pdf)  
 Latif A, et al. (2013). Medicines use reviews: a potential resource or lost opportunity for general practice? *BMC Family Practice*, 14:57

## Healthy Living Pharmacy

Supporting local communities by "...delivering consistent and high quality health and wellbeing services, promoting health and providing proactive health advice and interventions."



[www.npa.co.uk/Documents/HLP/HLP\\_overview\\_12.11.pdf](http://www.npa.co.uk/Documents/HLP/HLP_overview_12.11.pdf)

LOCAL HEALTH NEED				
HEALTHY LIVING PHARMACY FRAMEWORK				
NEED	CORE	LEVEL 1 Promotion	LEVEL 2 Prevention	LEVEL 3 Protection
Smoking	Health promotion, self care, signposting, OTC supply	Pro-active health promotion, Brief advice, assess willingness, signpost to services	NHS stop smoking service, cancer awareness, Health Check	COFD and cancer risk assessment with referral. Prescriber for stop smoking service.
Obesity	Health promotion, self care, signposting, OTC supply	Pro-active health promotion, Brief advice, assess willingness, signpost to services	NHS weight management service, cancer awareness, Health Check	Prescriber e.g. obesity, CVD, diabetes, Cancer risk assessment
Alcohol	Health promotion, self care, signposting	Pro-active health promotion, Brief advice, assess willingness, signpost to services	NHS alcohol intervention service, cancer awareness, Health Check	Structured care planned alcohol service, Cancer risk assessment
Physical Activity	Health promotion, self care, signposting	Pro-active health promotion, Brief advice, assess willingness, signpost to services	NHS Health Checks, healthy lifestyle consultation service	Structured physical activity plans, activity prescriptions
Sexual Health	Health promotion, self care, signposting, OTC supply	Pro-active health promotion, Brief advice, signpost to services	NHS EHC & chlamydia screen and treat PGD service	Assessment, support, contraception & vaccination
Men's Health	Health promotion, self care, signposting	Pro-active health promotion, Brief advice, signpost to services	NHS Health Check, PGD Treatment, Cancer awareness	PGD/Prescriber in men's health
Substance Misuse	Health promotion, self care, signposting	Supervised consumption, needle & syringe exchange	Harm reduction, Hep B & C screening	Client assessment, support and prescribing, Hep B vaccination
Other	Health promotion, self care, signposting	Oral health, travel/health, sun & mental health awareness	Cancer early detection and treatment adherence support, vaccination	Prescriber for travel health and immunisation and vaccination
Common Allergens	Health promotion, self care, OTC supply, signposting	NHS service (advice and treatment with P & SGL medicines)	NHS service (PGD treatment)	NHS service (prescribed POMs)
Long-term Conditions	Health promotion, self care, signposting, dispensing supply, risk management	Medicines Optimisation (New Medicine Service and Medicines Use Reviews)	Parameter monitoring, clinical review and management	Prescriber/PGD for LTCs
ENABLERS - QUALITY CRITERIA				
Workforce Development	Core capabilities	Healthy Champion Leadership skills	Behavioural change skills Leadership skills	PGD/Prescriber Leadership skills
Environment	GPIC standards	Advanced IT and premises	Enhanced IT and premises	Enhanced IT and premises
Engagement	Operational	Primary Care	Community	Public Health & Clinical leadership
PHARMACY CAPABILITY				

Hampshire Healthy Living Pharmacies, [www.hampshirehlp.org.uk/webfm\\_send/3506](http://www.hampshirehlp.org.uk/webfm_send/3506), date?

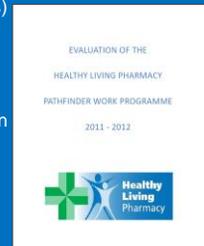
## Features of a Healthy Living Pharmacy?

- ✓ **Consistently delivers broad range of high quality commissioned services**
- ✓ **Provides a quality mark** on quality, innovation & productivity
- ✓ **Identifiable as a brand** the public can recognise, with services tailored to a local community
- ✓ **Proactive team ethos**
- ✓ **Healthy Living Champion**



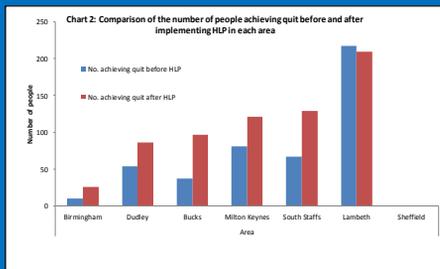
## Service Evaluation

- 20 pathfinder sites (30 PCTs)  
14 areas returned data (n = 362 HLPs)
- Improvements were seen in the majority of services evaluated:
  - stop smoking
  - Emergency Hormonal Contraception
  - minor ailments
  - alcohol awareness
  - MURs
  - NMS
  - substance misuse
  - *Pivotell* automated pill dispenser

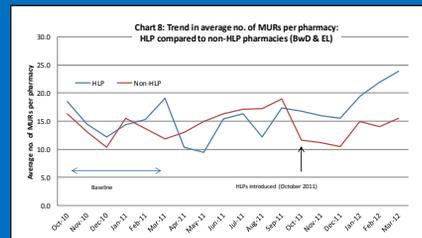


April 2013

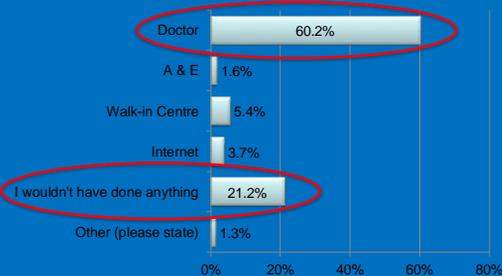
## Service outcomes: stop smoking



## Service outcomes: Medicines Use Review



## Location where service users would have sought help/advice had this service not been available in the pharmacy (n = 1,034)



2100+ qualified Health Champions  
1500+ leadership development  
722 Healthy Living Pharmacies (1385 expected by end March 2014)  
40+ areas implementing

## 4. The Future

- A Call to Action
  - NHS England developing plan for future primary care services
  - Wants to secure CP services that deliver great outcomes; cost effective; reach into every community; make the most of pharmacists' expertise & pharmacy's unique accessibility
- National / Local Commissioning Opportunities
- Harmonising GMS & Pharmacy contracts



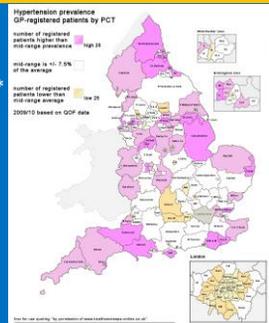
## Summary



## Blood Pressure

## Prevalence

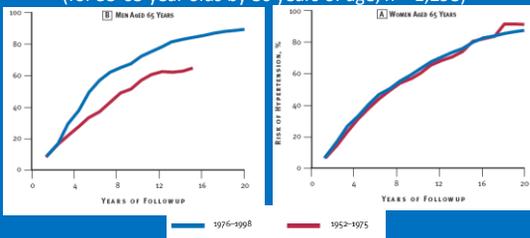
- ~25% of adults have high BP\*  
Rising to >50% 60yrs<sup>1</sup>
- N = ~12 million  
~7 million diagnosed;  
~5.7 million undiagnosed<sup>2</sup>



\* defined as  $\geq 140/90$ mmHg or on Tx  
<sup>1</sup> NICE (2011). Clinical management of primary hypertension in adults, NICE clinical guideline 127  
<sup>2</sup> APH2 (2011). Hypertension Prevalence Modelling Briefing Document, Association of Public Health Observatories. <http://www.apho.org.uk/resource/view.aspx?RID=111139>

## If you live long enough, you get hypertension

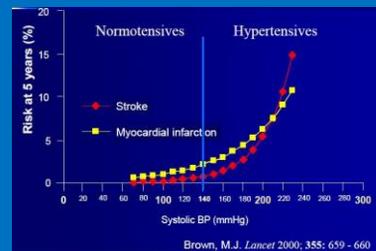
Estimated lifetime risk of developing hypertension is 90%  
(for 55-65 year olds by 80 years of age; n = 1,298)



Ramachandran S, et al. (2002). Residual Lifetime Risk for Developing Hypertension in Middle-aged Women and Men, The Framingham Heart Study, JAMA, 287(8):1003-1010

## Significant risk factor

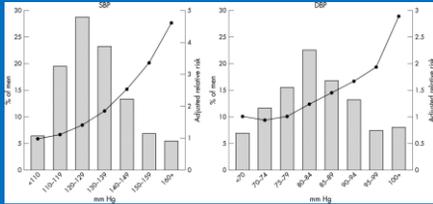
69% of all first MIs, 74% of CHD, 77% first strokes, 91% HF associated with  $\uparrow$  BP<sup>1</sup>



<sup>1</sup> AHA (2012). Heart Disease and Stroke Statistics—2012 Update, A Report From the American Heart Association, Circulation, 125: e2-e220

## Curvilinear Relationship Between BP & Risk <sup>1, 2</sup>

Risk associated with increasing BP is continuous. **No natural cut-off point** above which 'hypertension' definitively exists and below which it does not <sup>3</sup>



<sup>1</sup> National High Blood Pressure Education Program Working Group (1993). Report on primary prevention of hypertension. Arch Intern Med. 153:186-208  
<sup>2</sup> Martin MJ, et al. (1996). Serum cholesterol, blood pressure and mortality: implications from a cohort of 361,662 men. The Lancet, 328(8513):933-936  
<sup>3</sup> NICE (2011). Clinical management of primary hypertension in adults, NICE clinical guideline 127

## BP Reductions of 2 mmHg Reduce CV Risk by ~10%

2 mmHg decrease in mean SBP



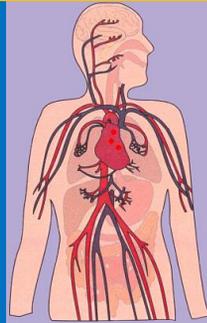
7% reduction in risk of IHD mortality  
 10% reduction in risk stroke mortality

(Based on meta-analysis of 61 prospective, observational studies; 1 million adults; 12.7 million person-years)

Prospective Studies Collaboration (2002). Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies. The Lancet, 360(9349):1903-913

## Blood Pressure Physiology

- BP is the force that blood exerts on the walls of arteries
- Constant flow & constant pressure are required to transport blood gases to cells of the body



## Systole and Diastole

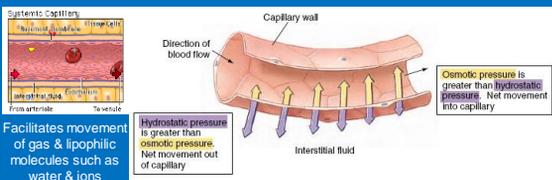
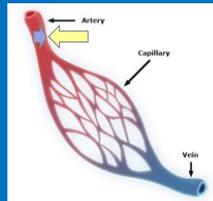
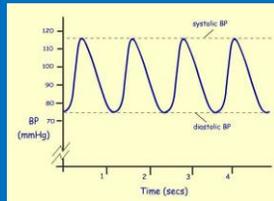
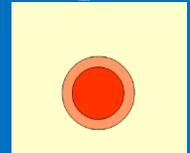
### Systolic Pressure

As the heart pumps blood into the arterial system, pressure in the arteries increases.



### Diastole Pressure

Recoil of the elastic arteries forces blood out of the arterial system into the capillaries. Pressure in the arteries falls as blood leaves the system. Diastolic pressure is the pressure existing between heart beats.



## Measurement

## NICE Guideline (2011)



**Quality standard for hypertension**

**CS23**

**Introduction and overview**

**Introduction**

Standard CS23 sets out the quality standards for the care of people with hypertension. It covers the diagnosis, management and monitoring of hypertension in adults.



**NICE**  
National Institute for Health and Clinical Excellence

**Hypertension**  
Clinical management of primary hypertension in adults

This guideline partially updates and replaces NICE clinical guideline 54

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**Hypertension overview**

Flowchart showing the process from 'Person with hypertension' to 'Diagnosis and management', 'Monitoring and review', and 'Review and management'.

<https://publications.nice.org.uk/quality-standard-for-hypertension-q528>    
 [www.nice.org.uk/guidance/CG127](http://www.nice.org.uk/guidance/CG127)    
 <http://pathways.nice.org.uk/pathways/hypertension>

## 1.1 Measuring blood pressure

- 1.1.1 Healthcare professionals taking blood pressure measurements need adequate initial training and periodic review of their performance. [2004]
- 1.1.2 Because automated devices may not measure blood pressure accurately if there is pulse irregularity (for example, due to atrial fibrillation), palpate the radial or brachial pulse before measuring blood pressure. If pulse irregularity is present, measure blood pressure manually using direct auscultation over the brachial artery. [new 2011]
- 1.1.3 Healthcare providers must ensure that devices for measuring blood pressure are properly validated, maintained and regularly recalibrated according to manufacturers' instructions. [2004]

## What is a properly validated BP monitor?

Recommended by British Hypertension Society  
[www.bhsoc.org/bp-monitors/bp-monitors/](http://www.bhsoc.org/bp-monitors/bp-monitors/)



WatchBP Home A for electronically detecting atrial fibrillation during diagnosis and monitoring of hypertension

Model number: 1000

Manufacturer: Microlife

Recommended by NICE  
 Microlife WatchBP Home A



## Does it really matter which BP monitor we use?

- Mercury / Aneroid / Electronic Manual / Automated?
- Automated machines
  - reduce variability in manually collected readings <sup>1</sup>
  - reduce white coat effects <sup>2</sup>
  - significantly better quality and accuracy vrs manual <sup>2, 3</sup>

<sup>1</sup> White W, et al. (1990). Assessment of four ambulatory blood pressure monitors and measurements by clinicians versus intraarterial blood pressure at rest and during exercise. *Am J Cardiol* 65 (1):60-6  
<sup>2</sup> Myers MG, et al. (2011). Conventional versus automated measurement of blood pressure in primary care patients with systolic hypertension: randomised parallel design controlled trial. *British Medical Journal*. *BMJ* 2011;342:d286  
<sup>3</sup> Nelson MR, et al. (2009). Cluster-randomized controlled trial of oscillometric vs. manual sphygmomanometer for blood pressure management in primary care (CRAB). *American Journal of Hypertension*, 22(6):598-603

1.1.4 When measuring blood pressure in the clinic or in the home, standardise the environment and provide a relaxed, temperate setting, with the person quiet and seated, and their arm outstretched and supported. [new 2011]



## Variables Affecting BP Measurement

- Emotional State: Stress or anxiety can cause large acute ↑ BP
- Talking: ↑ SBP 10–15 mmHg <sup>1, 2, 3, 4</sup>
- Not Resting 3–5 minutes: Activities such as exercise or eating can affect SBP by 10–20 mmHg <sup>3, 4</sup>

**Blood Pressure Measurement**

With Electronic Blood Pressure Monitors

• The patient should be seated for at least 5 minutes, relaxed and not talking or reading.  
 • The patient should be light clothed (sleeves rolled up).  
 • Place the cuff on really with the centre of the bladder over the brachial artery. The bladder cut must encircle the arm. The bladder cut must be 100%.  
 • Some electronic (non manual) blood pressure monitors will not inflate properly if the patient is talking or reading. The patient should be asked to rest for 3-5 minutes before the next reading if required.  
 • Repeat the procedure and record measurement as above. Do not use the blood pressure cut area and use the next highest reading for subsequent measurement.

<sup>1</sup> Handler J. (2009). The Importance of Accurate Blood Pressure Measurement. *The Permanente Journal*, 13:3: 51-54  
<sup>2</sup> Long JM, et al. (2004). The effect of status on blood pressure during verbal communication. *Behavior Science* 5(2):165-72  
<sup>3</sup> O'Brien E, et al. (2003). European Society of Hypertension recommendations for conventional, ambulatory, and home blood pressure measurements. *Journal of Hypertension*, 21: 821-846  
<sup>4</sup> Pickering TG, et al. (2005). Recommendations for Blood Pressure Measurement in Humans. *Hypertension*, 45:142-161

- **Back / Arm / Feet Unsupported** <sup>1, 3, 4</sup>  
 Back not supported: ↑ DBP by 6 mmHg  
 Crossing legs: ↑ SBP by 2–8 mmHg  
 Upper arm above heart: ↓ SBP 2 mmHg, for every inch above  
 Upper arm below heart: ↑ SBP 2 mmHg, for every inch below

<sup>1</sup> Handler J. (2009). The Importance of Accurate Blood Pressure Measurement. The Permanente Journal, 13:3: 51-54  
<sup>2</sup> Long JM, et al. (2004). The effect of status on blood pressure during verbal communication. Behavior Science 5(2):165-72  
<sup>3</sup> O'Brien E, et al. (2003). European Society of Hypertension recommendations for conventional, ambulatory, and home blood pressure measurements. Journal of Hypertension, 21: 821-848  
<sup>4</sup> Pickering TG, et al. (2005). Recommendations for Blood Pressure Measurement in Humans. Hypertension, 45:142-161

- **Smoking:** nicotine temporarily increases BP, so patients should refrain from smoking at least 30 minutes before a BP measurement <sup>1, 5</sup>
- **Alcohol & Caffeine:** causes BP levels to spike so patients should not consume at least 30-60 minutes before having a BP measurement <sup>4, 5</sup>
- **Temperature:** BP tends to increase when an individual is cold, therefore weather conditions and room temperature may cause BP to rise <sup>4</sup>
- **Full bladder:** BP is lower when a bladder is empty. As a bladder gradually fills, BP increases. SBP can increase 10 – 15 mmHg with a full bladder <sup>1, 3, 4</sup>

<sup>1</sup> Handler J. (2009). The Importance of Accurate Blood Pressure Measurement. The Permanente Journal, 13:3: 51-54  
<sup>2</sup> O'Brien E, et al. (2003). European Society of Hypertension recommendations for conventional, ambulatory, and home blood pressure measurements. Journal of Hypertension, 21: 821-848  
<sup>3</sup> Pickering TG, et al. (2005). Recommendations for Blood Pressure Measurement in Humans. Hypertension, 45:142-161  
<sup>4</sup> Kaplan NM et al. (eds. 2012). Technique of blood pressure measurement in the diagnosis of hypertension. In UpToDate. www.uptodateonline.com/online/contents/topic.do?topicKey=hyperten/94638selectedTitle=1-150&source=search\_result

### Salt

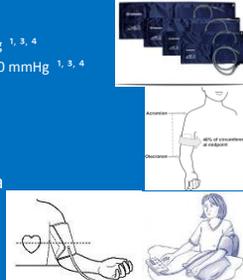
- Salt = 97-99% sodium chloride (NaCl)  
 NaCl = 40% Na, 60% Cl
- Dietary salt recommendations  
 UK = 6 g (2,300 mg/d) <sup>1</sup>  
 WHO = 5 g (2,000 mg/d) <sup>2</sup>
- In people taking ≥2 sodium containing drug formulations, median amount of sodium ingested is ~2,500 mg/d <sup>3</sup>



<sup>1</sup> SACN (2003). Salt and Health. Scientific Advisory Committee on Nutrition (The Stationary Office, London)  
<sup>2</sup> WHO (2012). Guidelines: sodium intake for adults and children (WHO, Geneva)  
<sup>3</sup> George J, et al. (2013). Association between cardiovascular events and sodium-containing effervescent, dispersible, and soluble drugs: nested case-control study. BMJ 2013;347:f6954

1.1.5 If using an automated blood pressure monitoring device, ensure that the device is validated<sup>3</sup> and an appropriate cuff size for the person's arm is used. **[new 2011]**

- Use appropriately sized cuff  
 BP Cuff is too Small: ↑ SBP 10 – 40 mmHg <sup>1, 3, 4</sup>  
 BP Cuff used Over Clothing: ↑ SBP 10 – 50 mmHg <sup>1, 3, 4</sup>
- Place cuff correctly
  - medial side of biceps brachii
  - 2-3 cm above antecubital fossa
- Arm must be at same vertical height as heart



<sup>1</sup> Handler J. (2009). The Importance of Accurate Blood Pressure Measurement. The Permanente Journal, 13:3: 51-54  
<sup>2</sup> O'Brien E, et al. (2003). European Society of Hypertension recommendations for conventional, ambulatory, and home blood pressure measurements. Journal of Hypertension, 21: 821-848  
<sup>3</sup> Pickering TG, et al. (2005). Recommendations for Blood Pressure Measurement in Humans. Hypertension, 45:142-161

### Which Arm?

**Association of a difference in systolic blood pressure between arms with vascular disease and mortality: a systematic review and meta-analysis**

**1.2 Diagnosing hypertension**  
 1.2.1 When considering a diagnosis of hypertension, measure blood pressure in both arms.

**NICE (2011). Clinical management of primary hypertension in adults. Clinical Guideline 127**

**2013 ESH/ESC Guidelines for the management of arterial hypertension**

**BMJ RESEARCH**

**Conclusions:** Differences in systolic blood pressure between arms can predict an increased risk of cardiovascular events and all cause mortality over 10 years in people with hypertension. This difference could be a valuable indicator of increased cardiovascular risk. Bilateral blood pressure measurements should become a routine part of cardiovascular assessment in primary care.



### How Many Readings?

1.2.2 If blood pressure measured in the clinic is 140/90 mmHg or higher:

- Take a second measurement during the consultation.
- If the second measurement is substantially different from the first, take a third measurement.

Record the lower of the last two measurements as the clinic blood pressure. **[new 2011]**

**If first reading is below 140/90, no additional readings required**

1.2.8 If hypertension is not diagnosed, measure the person's clinic blood pressure at least every 5 years subsequently, and consider measuring it more frequently if the person's clinic blood pressure is close to 140/90 mmHg. **[new 2011]**



## Management

### After BP measurement...

- Put patients at ease
- Lifestyle Advice & Signposting: physical activity, diet, relaxation, alcohol, caffeine, salt, smoking cessation
- Encourage HBPM
  - Lowers BP vrs usual care at 6 months ( $\downarrow$ SBP 3.9 mmHg,  $\downarrow$ DBP 2.4 mmHg) based on 26 prospective comparative studies <sup>1</sup>
  - But...need to ensure HBPM is performed correctly
- Encourage Concordance & Persistence <sup>2</sup>
  - 4x  $\uparrow$  risk of dying from a stroke by 2<sup>nd</sup> year after starting Tx

<sup>1</sup> Uhlig K, et al. (2013). Self-Measured Blood Pressure Monitoring in the Management of Hypertension: A Systematic Review and Meta-analysis, *Annals of Internal Med.*, 159(3):185-194.  
<sup>2</sup> Herttua K, et al. (2013). Adherence to antihypertensive therapy prior to the first presentation of stroke in hypertensive adults: population-based study, *European Heart Journal*, 34(38):2333-9

## Atrial Fibrillation and Pulse Palpation

### Atrial tachyarrhythmia (supraventricular)

- $\uparrow$  **atria contractions** (400-600 bpm)  
rapid, irregular, uncoordinated
- $\downarrow$  **atrial mechanical function**  
irregular impulses conducted to ventricles; impaired atrial transport function
- $\uparrow$  **ventricular rate** (110-140 bpm, rarely 150-170)  
irregular ventricular rate; loss of ventricular rate adaptation to increased demands
- $\downarrow$  **Cardiac output** 10-20%, regardless of ventricular rate



<sup>1</sup> NCCCO (2006). Atrial Fibrillation, Royal College of Physicians, p.7

- Most common sustained cardiac arrhythmia  
Prevalence among general practices in England, 1.76% <sup>1</sup>
- **Stroke** 4-5 x  $\uparrow$  (300-400%) <sup>2</sup>
- **Mortality** 1 x  $\uparrow$  (100%) <sup>2</sup>
- **Heart Attack** 1 x  $\uparrow$  (100%) <sup>3</sup>  
Independent association, especially in women & blacks.  
Prospective cohort study, USA, n=23 928, w/o CHD at baseline

<sup>1</sup> Cowan C, et al. (2013). The use of anticoagulants in the management of atrial fibrillation among general practices in England, *Heart* doi:10.1136/heartjnl-2012-303472

<sup>2</sup> Miyasaka Y, et al. (2007). Mortality trends in patients diagnosed with first atrial fibrillation: a 21-year community-based study, *J Am Coll Cardiol*, 2007;49(9):986-992

<sup>3</sup> Soliman EZ, et al. (2014). Atrial Fibrillation and the Risk of Myocardial Infarction, *JAMA Int. Med.*, 174(1):107-14

### Paroxysmal

Recurrent, sudden episodes, each <7 days duration - most resolve within 2 days

- 8 – 9% with new-onset paroxysmal AF developed sustained arrhythmia by end of first year; ~25% in permanent AF by 5 years.
- 66 – 75% patients had documented recurrence of AF within 5 years, despite continuous anti-arrhythmic drug therapy.

### Persistent

Episodes that last longer than 7 days and that can recur after treatment

### Permanent

Heart does not revert back to normal rhythm, even with treatment

Kerr CR, et al. (2005). Progression to chronic atrial fibrillation after the initial diagnosis of paroxysmal atrial fibrillation: results from the Canadian Registry of Atrial Fibrillation (CARAF), *American Heart J*, 149(3):489-96

## Stroke Risk and Anticoagulation

**ORIGINAL ARTICLE**  
**OPEN ACCESS**

### The use of anticoagulants in the management of atrial fibrillation among general practices in England

Camelot Casson,<sup>1</sup> Richard Hodgson,<sup>1</sup> Ian Roberts,<sup>1</sup> W Robert Long,<sup>1</sup> James Smeeth,<sup>1</sup> Matthew Tre,<sup>1</sup> Kath Tybirk,<sup>1</sup> Chris P Quinn<sup>2</sup>

**Abstract**  
Objective To investigate the use of anticoagulants for stroke prevention among patients with atrial fibrillation in general practices in England.  
Design Cross-sectional study.  
Setting 100 general practices in England representing 10% of the population.  
Main outcome measures The primary outcome was the use of oral anticoagulants (OAC) in patients with atrial fibrillation (AF) aged 80 years and over. Secondary outcomes included the use of OAC in patients with AF aged 65-79 years and in patients with AF aged 50-64 years.  
Results 833 patients with a history of AF were identified. Among 132 099 patients with a CHADS<sub>2</sub> score ≥2, 72 211 (54.7%) received an OAC, 14 987 (11.3%) were recorded as having a contraindication or having declined OAC therapy, leaving 44 901 (34.0%) not on OAC therapy and without a recorded contraindication or recorded refusal. Among patients not prescribed an OAC, 79.9% were prescribed an AP. The use of OAC declined

**ORIGINAL ARTICLE**

### Associations with anticoagulation: a cross-sectional registry-based analysis of stroke survivors with atrial fibrillation

Azmi H Adnan,<sup>1</sup> Ian Wong,<sup>2</sup> Christine McAlpine,<sup>3</sup> Camilla Yang,<sup>4</sup> Simon J Clark<sup>5</sup>

**Abstract**  
Objective To investigate the use of anticoagulants for stroke prevention among patients with atrial fibrillation in general practices in England.  
Design Cross-sectional study.  
Setting 100 general practices in England representing 10% of the population.  
Main outcome measures The primary outcome was the use of oral anticoagulants (OAC) in patients with atrial fibrillation (AF) aged 80 years and over. Secondary outcomes included the use of OAC in patients with AF aged 65-79 years and in patients with AF aged 50-64 years.  
Results 833 patients with a history of AF were identified. Among 132 099 patients with a CHADS<sub>2</sub> score ≥2, 72 211 (54.7%) received an OAC, 14 987 (11.3%) were recorded as having a contraindication or having declined OAC therapy, leaving 44 901 (34.0%) not on OAC therapy and without a recorded contraindication or recorded refusal. Among patients not prescribed an OAC, 79.9% were prescribed an AP. The use of OAC declined

**Conclusions** Over one-third of patients with AF and known risk factors who are eligible for OAC do not receive them. There is a high use of AP among patients not receiving OAC. Uptake of OAC is particularly poor among patients aged 80 years and over.

**Results** 231 833 patients with a history of AF were identified. Among 132 099 patients with a CHADS<sub>2</sub> score ≥2, 72 211 (54.7%) received an OAC, 14 987 (11.3%) were recorded as having a contraindication or having declined OAC therapy, leaving 44 901 (34.0%) not on OAC therapy and without a recorded contraindication or recorded refusal. Among patients not prescribed an OAC, 79.9% were prescribed an AP. The use of OAC declined

**Conclusions** Anticoagulation was underused in this high-risk population, and those at highest risk were less likely to be treated. Strategies need to be developed to improve prescription of anticoagulation treatment.

## Stroke Risk and Anticoagulation

**National survey of patients with AF in the acute medical unit: a day in the life survey**

John Tunstall, Rachel Robertson, David G Marshall, Chris Bell

**Abstract**  
Atrial fibrillation (AF) is the most common cardiac arrhythmia. The prevalence of AF is increasing with population ageing. The acute medical unit (AMU) is the most common site for the diagnosis of AF. The aim of this study was to describe the clinical characteristics and management of AF in the AMU. A day in the life survey was conducted in a tertiary care AMU. All patients with AF were included in the survey. Data were collected on demographics, symptoms, signs, ECG, and management. The survey was conducted over a 24-hour period. The survey included 100 patients with AF. The majority of patients were male (70%) and had a mean age of 75 years. The most common symptoms were palpitations (80%) and shortness of breath (60%). The most common signs were irregularly irregular pulse (90%) and tachycardia (70%). The most common ECG findings were irregularly irregular rhythm (90%) and tachycardia (70%). The most common management was rate control (80%) and anticoagulation (60%).

**Access to some NICE approved drugs varies hugely across England**

Angie Torjesen

Where a patient lived seemed to have a dramatic effect on their access to the latest drugs. In October to December 2012 there was a 28-fold variation across England in prescriptions in primary care of the latest anticoagulants for stroke prevention in atrial fibrillation. Dabigatran and rivaroxaban made up 8.4% of items prescribed for stroke prevention in atrial fibrillation (dabigatran, rivaroxaban, and warfarin) in Bristol, north Somerset, Somerset, and south Gloucestershire but made up just 0.3% of the group of drugs in south London, East Anglia, and Merseyside.

**retrospective analysis suggests 80% of patients with a significant risk for thromboembolic stroke (CHA<sub>2</sub>DS<sub>2</sub>-Vasc score >2) did not receive anticoagulation**

## Pulse Palpation

Pulse may be palpated in any place that allows an artery to be compressed against a bone.

1. Carotid artery  
2. Radial artery  
3. Brachial artery  
4. Femoral artery  
5. Popliteal artery  
6. Posterior tibial artery  
7. Dorsalis pedis artery  
8. Pedal artery  
9. Tibial artery

## Palpation Video & Practical

Video demonstrating pulse palpation techniques and a practical session.

## Normal Rate and Rhythm

Normal heart rate and rhythm characteristics.

## Atrial Fibrillation – “irregularly irregular”

Characteristics of atrial fibrillation, including irregularly irregular rhythm.

Sharing Best Practice in...

## Initiating and Sustaining Behaviour Change

IN2HEALTH

HELP  
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PRACTICE

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European Union  
Leonardo da Vinci

NHS

## What Doesn't Work?

Simple risk communication

Diagnosis

Argument

Most attempts to persuade

Emotional blackmail

Probably...no one approach. Human psychology is too complex!

## 5 Approaches to Consider



### 1) Communicating Risk

Why aren't they taking this seriously?

## What is Risk?

- Risk = probability that a hazard will give rise to harm <sup>1</sup>
- Risk communication = the open two way exchange of information and opinion about harms and benefits, with the aim of improving the understanding of risk and of promoting better decisions about clinical management <sup>2</sup>
- Risk communication should cover
  - probability of the risk occurring
  - importance of the adverse event being described
  - effect of the event on the patient

<sup>1</sup> Edwards A, Elwyn G. Understanding risk and lessons for clinical risk communication about treatment preferences. Qual Health Care 2001;10(suppl 1):9-13

<sup>2</sup> Ahl AS, et al. (1993). Standardization of nomenclature for animal health risk analysis. Rev Sci Tech, 12:1045-53

## Why is Communicating Risk important?

- People fail to recognise unhealthy living as a cause for concern, despite media and health campaigns.
- People who don't recognise their own unhealthy behaviours, are less likely to see calls to improve health as personally relevant <sup>1</sup>
- Individuals who view themselves as unhealthy are more likely to engage in healthy behaviour change <sup>2</sup>
- Behaviour change is largely motivated by perceived risk <sup>3</sup>

<sup>1</sup> Johnson F, et al. (2008). Changing perceptions of weight in Great Britain: comparison of two population surveys. British Medical Journal, 337:e494

<sup>2</sup> Strauss RS (1999). Self-reported weight status and dieting in a cross-sectional sample of young adolescents: National Health and Nutrition Examination Survey III. Archives of Paediatrics & Adolescent Medicine, 153:741-47

<sup>3</sup> Janz NK, Champion VL & Strecher VJ (2002). The Health Belief Model (Jossey-Bass, San Francisco)

**The Telegraph**  
HOME NEWS SPORT FINANCE COMMENT BLOGS CULTURE  
UK World Politics Obituaries Earth Science Defence Health  
Celebrations Weird News Road and Rail Law and Order Crime & Rof  
UK News

**Cancer cure 'may be available in two years'**

How the cancer treatment could work

1 Blood enters the body  
2 Granulocytes eat cancer cells  
3 Chemokines attract lymphocytes, NK cells, dendritic cells  
4 Cancer cells are eaten  
5 Cancer cells are destroyed

How the treatment might work

By Nic Fleming Science Correspondent  
5:01 PM BST 19 Sep 2007

Cancer sufferers could be cured with injections of immune cells from other people within two years, scientists say.

www.telegraph.co.uk/news/uknews/1563521/Cancer-cure-may-be-available-in-two-years.html

### Misleading Information

**DAILY EXPRESS**  
10 June 2011  
www.express.co.uk/news/uk/251839/Hidden-danger-in-fruit-juices

**SUNDAY EXPRESS**  
30th May 2010  
www.express.co.uk/posts/view/178045/Obesity-ills-are-a-myth

Football fans can now order half-time pies at Tyncastle with new smartphone app

THE cutting-edge technology will be available today to all 3000 fans in the Wheatfield Stand for the clash with Motherwell.

Merthyr Town's ground to be renamed the Cigg-e Stadium

Lucrative sponsorship package with electronic cigarette brand comes days E-tites unveiled as official partner of Derby County

Press Association  
Bregaden.com, Thursday 22 August 2013 00:10 BST

Merthyr Town's home ground, which will be known as the Cigg-e Stadium for the next three seasons. Photograph: Phil Rowson/Fox Features

**Readers Digest**  
January 2010

**DiETING the scientific way**

**PRIVATE DETECTIVE**

**Check your testosterone level**

**Get in the sun without sunblock**

**Be plump and proud**

**Almonds thicken**

### Patient Communication

THE PATIENTS KNOW MORE ABOUT THEIR DISEASES THAN ME, I MUST GET HIGHER SPEED INTERNET ACCESS THAN THEM

I'M SORRY DOCTOR, BUT AGAIN I HAVE TO DISAGREE.

### How Should We Communicate Risk?

- In general, clinicians should present information in the most **transparent and understandable way**, rather than trying to persuade, and accept that the patient's informed decision on their own care may not necessarily be the one that reduces their risk. <sup>1</sup>
- However, where there is good evidence of the benefits of an intervention, risk communication should **aim to go beyond simply sharing information and endeavour to change beliefs or promote behavioural change**. <sup>2</sup>

<sup>1</sup> Ahmed H., et al. (2012). Communicating Risk, BMJ, 344:e3996 doi:10.1136/bmj.e3996 (18 June 2012)  
<sup>2</sup> Brewer NT in Fischhoff B, et al. (eds.) (2011). Communicating risks and benefits: an evidence-based user's guide. US Department of Health and Human Services, FDA, 3-10

## 2) Readiness to Change

Are they ready to change?

## Readiness for Change Varies

Not ready ----- Ready

### Ambivalent

(in two minds; wanting and not wanting a change;  
wanting incompatible things at the same time)

$$\text{Importance} + \text{Confidence} = \text{Readiness}$$

(Self-efficacy)

## Assessing Readiness to Change

"Even though I don't like what's happening to me, I don't want to change X."

"I really want to change X, but I can't because..."

"I really want to change X."

"I prefer not to think of changing anything for now."

"I don't want to change X, but I know I have to because..."

"I'm planning to change X."

"How important is it for you to...?"

"How confident are you in your ability to...?"

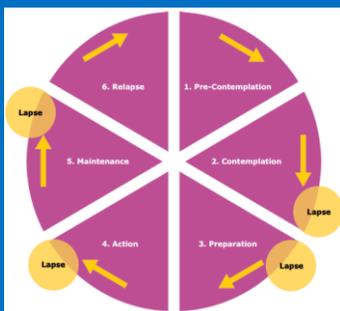


Less Ready to Change

More Ready to Change

"Why are you at that number and not zero?"

## Stages of Change Model



Prochaska and Diclemente, 1983, 1992 1997

Stage	Characteristics	Intervention
Pre-contemplation	- No intention to change.	- Information - Discussion
Contemplation	- Aware of need for change but not yet committed.	- Highlight pros/cons of change. - Misinformation needs identifying and correcting.
Preparation	- Making small steps towards change. - Intention to act in near future.	- Support small changes. - Avoid high-risk situations.
Action	- Behaviour changing.	- Support (and options) - Environment management - Review decision
Maintenance	- Potential risk of relapse. - Cyclical change, test of resilience.	- Continue support - Relapse prevention - Problem-solving skills

### 3) Motivational Interviewing

How can I encourage them to do something?  
How can I support their efforts?

### What is Motivational Interviewing?

'A collaborative conversation to strengthen a person's own motivation for and commitment to change.'

'People are generally **better persuaded by their own arguments** than by those of others - especially so-called experts. Our task is to help them decide to do things differently.'

Bill Miller & Steve Rollnick, 2010  
(Psychologists who originated and developed MI during the last 30 years)  
[www.motivationalinterview.org](http://www.motivationalinterview.org)

### Objective

To optimise our relationship with a patient to help them decide,  
(i) if change is for them; and, if yes  
(ii) to encourage them to start and sustain that change.



### How?



- Establish Rapport
  - Establish Agenda
    - Identify Behaviour – only one!
    - Motivation / Barriers?
    - Are they ready to change?
    - Stage of change?
    - ↑ Importance / ↑ Confidence
    - SMART Goal (specific, measurable, attainable, relevant, timed)
    - Agree Next Steps!
- OARS**  
**Open Questions**  
**Reflective Listening**  
**Affirmations**  
**Summary**

### Motivational Interviewing Style

Use reflective listening and empathy...

encourage reflection on the personal value of change...

highlight discrepancy & explore ambivalence...

and encourage change talk & support self-efficacy.

Small Changes = Large Effects  
*Behaviour change is a process and rarely happens as a single event!*



### Example – Directing Style

"OK, so your weight is putting your health at serious risk.  
You already have early diabetes."

*(Patient usually resists at this point)*

"Overweight is conceptually very simple, if you think about it. Too much in, not enough out. So all you need to do is eat less and exercise more. Unfortunately, there's no way you can get around that simple fact."

*(Patient replies with a "Yes, but . . ." argument)*

Rollnick S, et al. (2010). Motivational interviewing. *BMJ* 2010;340:c1900, doi: 10.1136/bmj.c1900

**Example – Guiding Style**

“OK, let’s have a look at this together and see what you think. From my side, losing some weight and getting more exercise will help your diabetes and your health, but what feels right for you?”

*(Patient often expresses ambivalence at this point)*

“So you can see the value of these things, but you struggle to see how you can succeed at this time. OK. Well, it’s up to you to decide when and how to make any changes. But I wonder, what sort of small changes might work for you?”

*(Patient says how change might be possible)*

**Motivational Interviewing Videos**

For a short video training course: <http://www.ncsct-training.co.uk/player/play/VBA>

**Summary**

**Figure 6.4** The full classic system map shows multiple links between environmental determinants on the outside of and systems of change (outside) inside of culture as an order to social needs and resources in human biology. The model is represented by boxes, positive causal relationships are represented by red arrows and negative relationships by black lines. The central regions is highlighted in orange at the center of the map.

**NO MAGIC BULLETS: A SYSTEMATIC REVIEW OF 102 TRIALS OF INTERVENTIONS TO IMPROVE PROFESSIONAL PRACTICE**

David A. Davis, MD, & Brian Hayes, MD, PhD

**Abstract:** To determine the effectiveness of different types of interventions in improving health professional performance and health outcomes...

**Conclusions:** There are no magic bullets for improving the quality of health care. The most effective interventions are those that are tailored to the specific needs of the practice and the individuals involved.

**The end.**

**Thank you!**

**Any questions?**