



INTERYem

Abstracts compilations of
Family Medicine Conference
From Saturday 27th to 28th March 2021

Collected by:

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'Principles of improving primary care services'

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Monash University Department of General Practice

What InterYem has asked

- Basics of primary care service improvement
- Embedding improvement cultures;
- Measuring improvement in services;
- The role of public health;



Education and research are essential for lasting peace in Yemen

Yemen, known to many as the land of Sheba, and Manhattan of the desert, is now referred to only as one of the poorest countries on Earth. The name Yemen has become synonymous with cholera, famine, death, instability, and war. The war continues to erase the lives, history, and the future of Yemenis, and



www.thelancet.com Vol 395 April 4, 2020



"...establish long-term, sustainable solutions to address the education crisis in Yemen aiming above all to prevent a more students from dropping of school and any more experienced professionals and academics from leaving the country."

www.thelancet.com Vol 395 April 4, 2020

Nations during and after conflict

- "the national health system is also a victim of conflict, with destruction of clinic and hospital infrastructure, the flight of health professionals, and the interruption of drugs and other medical supplies." (Kruk)



A reminder of the past



- 1980-81
- Paediatric elective Papua New Guinea
- Professor John Biddulph

A second reminder - Cuba



- Revolution in 1950s
- Enlisted Drs and nurses to work in rural areas
- Polyclinics in 1970s
- Every Dr must do 3 years in primary care
- Low GDP
- Improved PHC → 40% decline in infant mortality

Where is the roadmap?

- Alma – Ata
- Evidence
- Theory to practice (personal view)
- It is a long road started many years ago...



The Alma – Ata conference 1978

"Primary health care is the key to improving health and reducing inequalities."

The challenge of Alma - Ata

"Are you ready to introduce, if necessary, radical changes in the existing health delivery system so that it properly supports [primary health care] as the over-riding health priority?"

Are you ready to fight the political and technical battles required....



Halldan T. Mahler
WHO director general 1973-1988

The Alm-Ata declaration

Panel: Key principles of the Declaration of Alma-Ata (1978)

- 1 Health is a state of complete physical, mental, and social wellbeing, not simply the absence of disease, and is a human right.
- 2 Economic and social development is fundamental to health and health equity, and, thus, action across sectors—not just the health sector—is required.
- 3 Primary health care is key to realising the right to health—it is essential health care is made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford.
- 4 Primary health care should be sustained by integrated and functional systems, leading to progressive improvement of comprehensive health care for all, and prioritising those most in need.

This panel is adapted from the 1978 Declaration of Alma-Ata.¹

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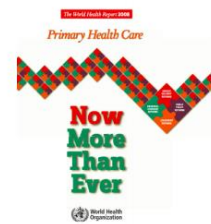
Selective or comprehensive primary care?

Approach	Selective Primary Health Care (SPHC)	Comprehensive PHC (CPHC)
Values	Effectiveness, efficiency, cost-effectiveness	Equity, community participation, intersectoral collaboration
Concepts	Health as absence of disease	Health as well-being
Orientation and Accountability	Vertical, health depends on vertical management and support	Success depends on links between health and other sectors, community support and capacity building
Time Scope	Short-term, donor and program manager dependent	Long-term, population and public health dependent

The momentum built



USA 2001



World Health Organisation 2008

Starfield's 4 pillars of quality primary

- Continuity
- Comprehensiveness
- Coordination / Integration
- Access to care



Starfield's 4 pillars of quality primary care

Component	Definition
Access to care	The ease with which patients can initiate contact with their primary care clinician/team for a new or existing health problem.
Comprehensive care	Care that is able to meet the broad range of a patient's needs.
Coordinated care	That clinicians coordinate care received from elsewhere. (ie specialists and others) to meet patient needs.
Continuous care	Patients can be cared for by a clinician / team across episodes of care.

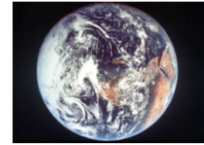
High quality primary care leads to ...

- 2003 (international)
 - Decreased neonatal and all cause mortality
– Shi and Starfield 2003
- 2013 (Europe)
 - Decreased admissions: (asthma diabetes)
 - Decreased yrs of life lost: (IHD, stroke)
 - Better self reported health
 - **Higher spending** BUT lower spending growth.
– Kingos et al 2013



What about specialists?

- In regions and nations key health outcomes are directly related to the quality of primary care...
- ...and inversely related to the % of specialists.



Starfield, B., L. Shi, et al. (2005). "The effects of specialist supply on populations' health: assessing the evidence." *Health Aff (Millwood)*.

..and the disadvantaged?

- Consistent link between primary care development and better health for the disadvantaged and reduced health care inequality



– Shi and Starfield 2003

And lower income countries?

- Primary health care on outcomes:
 - Major impact on infant mortality
 - strong primary care orientation have better and more equitable health outcomes than those systems that are oriented toward specialty care
 - 31/36 studies positive

Macinko J, Starfield B, Frinsho T. The impact of primary healthcare on population health in low- and middle-income countries. *J Ambul Care Manage.* 2009 Apr-Jun;32(2):150-71

Implementable solutions

- Invest in the health care system
- Orient system to primary care
 - People
 - Place
 - Linkages
- Prepare the system to meet the challenges
 - Education
 - Training
 - Research



Investing in the Reach of Primary Care in Developing Countries

- Universal coverage – flexible finance.
 - Decrease out of pocket costs
- Partner with public and private sector organizations
- Invest in leaders.
- Create strong relationships with patients
 - Promote the brand of primary care.
 - Focus on the patient experience



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Mossman K, et al Expanding the Reach of Primary Care in Developing Countries. *Harvard Business Review.* 2017 2017(June 6).

Orient the system by building on the pillars



Component	Strategy
Access to care	The patient and the service....
Comprehensive care	Broadly trained health providers that work well with colleagues in primary care clinics.
Coordinated care	Information from other parts of the health system.
Continuous care	A philosophy of linking a patient to a centre

Building on InterYem Principles



- **Education**
 - A department of primary care in every medical school.
- **Training**
 - Leadership is critical
 - High-quality community-based training of all nurses, midwives, allied health professionals and family doctors
- **Research**
 - The building of primary care research capacity with active involvement of primary care practices and practice teams

Research in primary care

- Focus research on system improvement
- Institute a system of measurement that reflects national standards core functions of primary care (coordination, comprehensiveness, integration, and technical and experiential quality).
- Indicators should measure quality at the patient, provider, and system level.
- Share the information with
 - Patients
 - Providers
 - Professions
 - Governments

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The story continues




- The Astana Conference 2018
- Integrated people-centred health services means putting the comprehensive needs of people and communities, not only diseases, at the centre of health systems, and empowering people to have a more active role in their own health.*

MONASH University Presentation title 28th February 2011 | 31

Conclusion

- Primary care is fundamental to improved health
- You're part of a world wide movement – you are not alone
- Requires
 - Funding
 - Attention to the 4 pillars
 - A well trained workforce
 - Infrastructure
 - Measurement of performance



MONASH University Presentation title 28th February 2011 | 32

The main messages to government

- Money needs to be re-allocated to primary care
- The primary care workforce needs to be supported and expanded – particularly in rural areas.
- Think about where care is delivered – and support this
- Primary health-care personnel need
 - skills in delivering clinical services,
 - AND
 - (i) awareness of the importance of public health interventions
 - (ii) competence in collaborating with communities.

* Chotchoungchatchai S, et al Primary health care and sustainable development goals. Bull World Health Organ. 2020 Nov 1;98(11):792-800.

Resources



<https://www.globalfamilydoctor.com>



<https://improvingphc.org/improvement-strategies>



<https://www.napcrq.org>



<https://www.ariadnelabs.org/tenets-of-primary-health-care-improvement/>

Another example - Oman

- 2.4% of GDP on Health
- 100% free health care
- Staged development
 - 1976 – 1990 rebuilt health infrastructure almost from scratch.
 - 1991 to 2005, built central, regional and local infrastructure.
 - 2005 - comprehensive health care coverage, and using high-level strategic planning to pinpoint and address the specific needs of the sector.

<https://www.sciencedirect.com/science/article/abs/pii/S0140673608614038>

- Chronic disease

<https://www.sciencedirect.com/science/article/abs/pii/S014067360861404X>

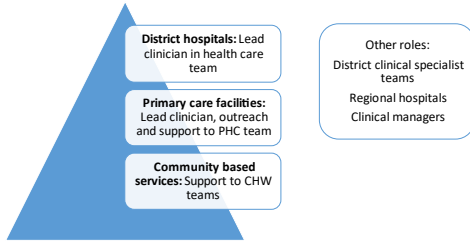
- Impact on health outcomes

– https://journals.lww.com/ambulatorycaremanagement/Abstract/2009/04000/The_Impact_of_Primary_Healthcare_on_Population.10.aspx



<h3>Burden of disease</h3> <p>Persons</p> <table border="1"> <thead> <tr> <th>Cause of death</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>HIV/AIDS</td><td>28.1%</td></tr> <tr><td>Cardiovascular diseases</td><td>7.5%</td></tr> <tr><td>Lower respiratory infections</td><td>4.9%</td></tr> <tr><td>Ischaemic heart disease</td><td>4.7%</td></tr> <tr><td>Tuberculosis</td><td>4.5%</td></tr> <tr><td>Diabetes mellitus</td><td>3.6%</td></tr> <tr><td>Hypertensive heart disease</td><td>3.5%</td></tr> <tr><td>Interpersonal violence</td><td>3.5%</td></tr> <tr><td>Road injuries</td><td>3.3%</td></tr> <tr><td>Diarthral diseases</td><td>3.1%</td></tr> </tbody> </table> <p>Figure 9: Top-10 single causes of death for persons 2012, N = 528,947</p>	Cause of death	Percentage	HIV/AIDS	28.1%	Cardiovascular diseases	7.5%	Lower respiratory infections	4.9%	Ischaemic heart disease	4.7%	Tuberculosis	4.5%	Diabetes mellitus	3.6%	Hypertensive heart disease	3.5%	Interpersonal violence	3.5%	Road injuries	3.3%	Diarthral diseases	3.1%	<h3>Health system</h3> <p>Utilisation of private and public sectors by population</p>
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<h3>District health services</h3>	<h3>Health reforms</h3>																						
<h3>Why did South Africa recognize family medicine?</h3> <ul style="list-style-type: none"> • Strong advocacy from the discipline • Clear skills gap at district hospitals • Poor quality in primary health care 	<h3>Roles of family physicians in the health system</h3>																						

Placement of the family physician in the health system



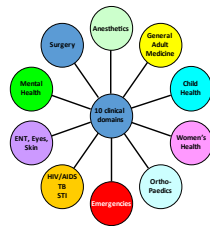
Training of family physicians

- Nine university based training programmes (MMed degree)
- Four year training programme
- Accredited training complexes in district health services
- National learning outcomes and set of skills
- National workplace based portfolio of learning
- Coordination of training by Academy of Family Physicians
- National Fellowship examination under College of Family Physician

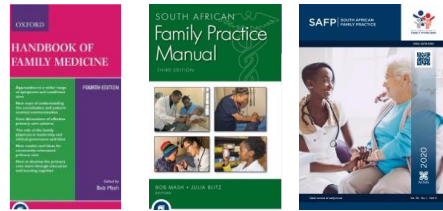
Training of family physicians

Five unit standards:

1. Leadership and clinical governance
2. Whole person medicine
3. Community orientated primary care
4. Teaching and training
5. Ethics and professionalism



Educational resources



<https://safpj.co.za>

SOUTH AFRICAN ACADEMY OF FAMILY PHYSICIANS

Other training in family medicine

PG Diploma in Family Medicine

- 2-years
- Upskilling and re-orientating primary care doctors

Undergraduate training in family medicine

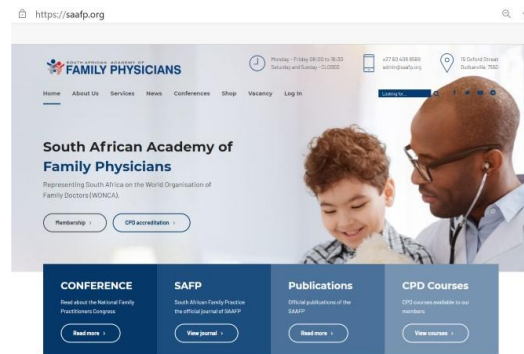
- Exposure over 6-years

Bachelor of Clinical Medical Practice

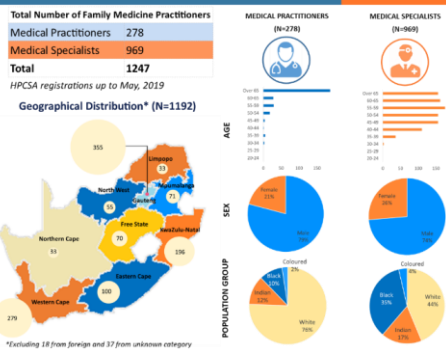
- 3-years
- Mid-level doctor aimed at district hospitals

Internship rotation in family medicine

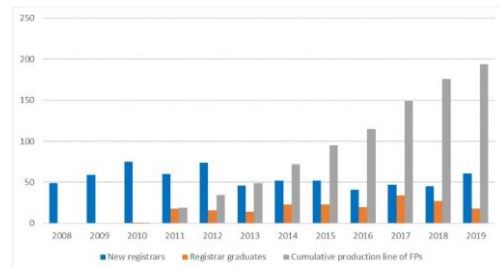
- 6-months

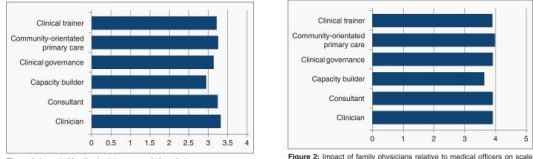


FAMILY MEDICINE PRACTITIONERS IN SOUTH AFRICA (N=1247) DEMOGRAPHIC PROFILE



Pipeline of new family physicians

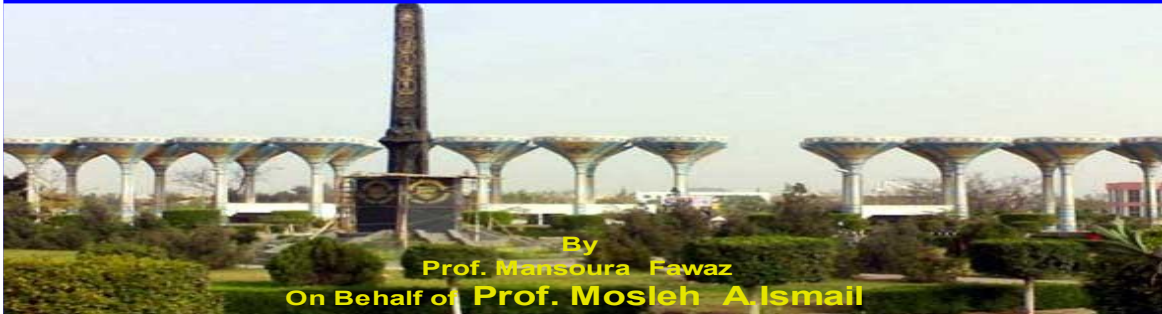


<h3>Density of family physicians</h3> 	<h3>Impact of family physicians on the health system</h3> 
<h3>Future of family physicians in the health system</h3> <ul style="list-style-type: none"> • One family physician for every district hospital • One family physician for every community health centre / sub-district • Supportive human resources for health policy - posts • Supportive financing policy – private sector and national health insurance • Increasing evidence base for contribution – PHCFM journal • Regional support and networking – Primafamed, WHO 	<h3>African Primary Health Care and Family Medicine Journal</h3> 
<h3>Primary Health Care Research Consortium</h3> 	<h3>Bibliography</h3> <ul style="list-style-type: none"> • Tiwari R, Mash R, Karangwa I, Chikte U. A human resources for health analysis of registered family medicine specialists in South Africa: 2002–19. <i>Family Practice</i>. 2020 Sep 11;17. • Mash R, Von Pressentin K. Strengthening the district health system through family physicians. <i>South African Health Review</i> 2018; 2018:33–39. • Von Pressentin K, Mash R, Baldwin-Ragaven L, Botha R, Govender I, Steinberg W, Esterhuizen T. The Influence of Family Physicians Within the South African District Health System: A Cross-sectional Study. <i>ANNALS OF FAMILY MEDICINE</i> 2018; 10(1):28–39. • Von Pressentin K, Mash R, Baldwin-Ragaven L, Botha R, Govender I, Steinberg W, Esterhuizen T. The perceived impact of family physicians on the district health system in South Africa: a cross-sectional survey. <i>BMC Family Practice</i> 2018; 19(24):1–10. • Von Pressentin K, Mash R, Baldwin-Ragaven L, Botha R, Govender I, Steinberg W. The bird's eye perspective: how do district health managers experience the impact of family physicians within the South African district health system? A qualitative study. <i>South African Family Practice</i> 2018; 63(1):13–20. • Aboojee Y, Mash R. Reaching national consensus on the core clinical skill outcomes for family medicine postgraduate training programmes in South Africa. <i>African Journal of Primary Health Care and Family Medicine</i> 2017; 9(1):1–8. • Von Pressentin K, Mash R, Baldwin-Ragaven L, Botha R, Govender I, Steinberg W. The bird's eye perspective: how do district managers experience the impact of family physicians within the South African district health system: a qualitative study. <i>South African Family Practice</i> 2017; 4(1):1–8.

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- Couper J, Mash B, Smith S, Schweitzer B. Outcomes for family medicine postgraduate training in South Africa. *South African Family Practice Journal* 2012; 54(6): 501-506
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- Mash B, Reid S. Statement of consensus on Family Medicine in Africa. *Afr J Prm Health Care Fam Med*. 2010; 2(1), Art. #151, 4 pages. DOI: 10.4102 / phcfm.v2i1.151

Family Medicine in Yemen :Thoughts for Future



By
Prof. Mansoura Fewaz
On Behalf of **Prof. Mosleh A Ismail**

Head of FM dept. Suez Canal University
Head of Scientific Council of Egyptian FM Fellowship
Vice Chair of Training Committee in Arab Board of FM

Outline of Presentation

- Sharing vision about PHC/FM/GP
- Setting the scene of Health Sector in Yemen
- Roles Played by PHCPs in Yemen (5-star-Doctor)
- Futuristic View for Happy Yemen

Sharing vision Primary Health Care !!

Before 1978	Alma Ata Conference (1978)	After Alma Ata Conference (1978)
<ul style="list-style-type: none"> □ Lack of health services in some areas □ Duplication / Inaccessibility in others. □ dissatisfaction with the existing health services. □ WHO Assembly agreed upon HFR 2000 	<ul style="list-style-type: none"> □ Accept the WHO slogan of HFA by 2000. □ Adopting PHC Approach to achieve HFA . □ PHC, Principles and Elements have been defined clearly 	<ul style="list-style-type: none"> □ Other principles/ elements were added to PHC □ Multiple revision to Recommendations of Alma Ata conference □ Move of HSR/ Reform of Medical Education to achieve HFA by 2000 Alma Ata □ MDGs up to 2015 □ SDGs □ UHC □ The Global Conference on Primary Health Care, Astana, Kazakhstan, 2018 emphasized on role of PHC approach to achieve UHC

Sharing vision

Definition of PHC !!

It is the essential health care made accessible to the individuals and community through their full involvement and participation at a cost, the country and individuals can afford with methods that is scientifically sound and socially acceptable.

Sharing vision

Primary Health Care !!

- It is the level of care or setting (not a specialty) through which a person has the first contact (point of entry) to the health care system.
- The care at this level can be provided by the GP/FP.
- It could be provided by Internist, and Pediatrician or even by sub-specialized physician in some health systems.

Sharing vision

Unique Situation in PHC

↓

Trained PHCPs/FPs/GPs work with !!

Public Sector
Folk Sector
Professional Sector

↓

Special nature of Health Problems
Undifferentiated Clinical un-certainty

↓

Radar Syndrome HS/ Scarce Resource

↓

Current Health Care System


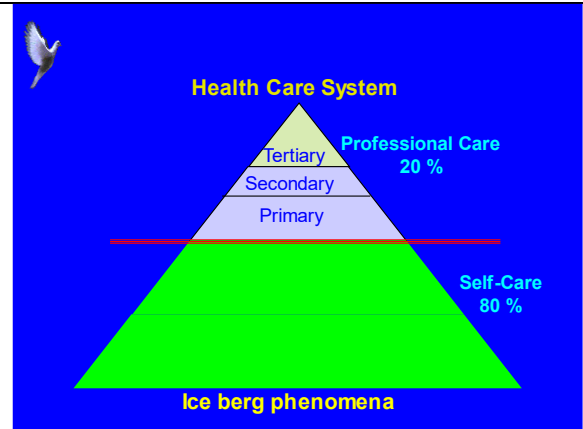
The Radar Syndrome

↓

Reactive - responding mainly when the person is a sick

↓

- Patient appears
- Patient is treated "find problem/ fix it"
- Patient is discharged
- Patient disappears from radar screen

WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTE

قرار
RESOLUTION

عن مجال 3
تعيين الأول أكتوبر 2019

المجلس الإقليمي
لشرق المتوسط
الدورة الثالثة والخمسون
البلد 4 (د) من جدول الأعمال

توسيع نطاق طب الأسرة: التقدم المتميز من أجل تحقيق التغطية الصحية الشاملة

إن التهمة الإيجابية، بعد ما بالذات، ثورة المناقشة التقنية حول توسيع نطاق طب الأسرة، التقدم المتميز من أجل تحقيق التغطية الصحية الشاملة،

وإذ تستذكر القرار ج. ص. 24-89 حول تعزيز الخدمات الصحية لتكامله التي ركزت على الناس، ومزار الصحة الإيجابية ج. م. ال. 100-2 بشأن التغطية الصحية الشاملة،

وإذ تستذكر أيضاً القرار رقم 15/ص. 2008 عن الرعاية الصحية الأولية، وبالغرض الخامس بالصفة في العام 2010 من جدول الأعمال الصحية،

وإذ تذكّر المجلس الأساسي لتفويض المجلس الوطني للصحة العالمية بشأن التغطية الصحية الشاملة والذي سبق فيه الرعاية الصحية الأولية ومساهمتها، بما في ذلك تشريعاتها، الصحية،

الدعوة الدورية الأعضاء إلى ما يلي:

1.1. توسيع نطاق طب الأسرة في خدمات الرعاية الصحية الأولية باعتباره استراتيجية حاسمة للتقدم نحو تحقيق التغطية الصحية الشاملة.

عن مجال 1 والمناقشة المتعلقة بـ:

Sharing vision

Family Medicine

Father of Family Medicine →



Ilan McWhinney

- Born 11th October 1926 -UK
- passed away 28th September 2012 - Canada



Sharing vision

Family Medicine



Ilan McWhinney

He described FM within the context of FM Principles

He addressed Principles that govern the actions of Family Physician

Sharing vision

9 Principle of Family Medicine

1. An open-ended commitment to patients
2. An understanding of the context of illness
3. The use of all visits for preventive purposes
4. The view of the practice as a population at risk
5. The use of a community-wide network of supports
6. The sharing with patients of the same habitat
7. The care of patients in office, home and hospital
8. Recognition of the subjective aspects of medicine
9. Awareness of the need to manage resources.

McWhinney,1981



Sharing vision

Principles of Family Medicine !!

- Principles related to Care
 - Access to cost-effective care
 - Compassionate care
 - Continuity of care
 - Comprehensive/ personalized care (Considering Bio- psychosocial/life-cycle perspective)
 - Team based care
 - Pt self-empowerment / self -management
 - Family Oriented care
 - Community oriented care
 - Coordinated Care
 - Evidence-based Care
 - Prevention focus Care
- Principles related to FP
 - Caring Attitude
 - Communication /Counseling Skills
 - Clinical Competence
 - Life long Learning /CPD

Nowadays
Principles of Good
PFC are embedded in
Principles of FM

McWhinney,1989



Principles related to Care

- Access to cost-effective care
- Compassionate care
- Continuity of care
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- Coordinated Care
- Evidence-based Care
- Prevention focus Care

Principles related to FP

- Caring Attitude
- Communication/Counseling Skills
- Clinical Competence
- Life long Learning/CPD

The Key is
Integration and
Amalgamation of
Principles

How Many Faces?

Sharing vision

Family Medicine !!

▪ Family Medicine/ General Practice is an academic and scientific discipline, with its own educational content, research, evidence base clinical activity and primary care oriented clinical specialty. (WONCA,2011)

▪ Family Medicine is the medical specialty which provides continuing, comprehensive health care for the individual and family. It is a specialty in breadth that integrates the biological, clinical and behavioral sciences. (AAFP,2016)



Sharing vision

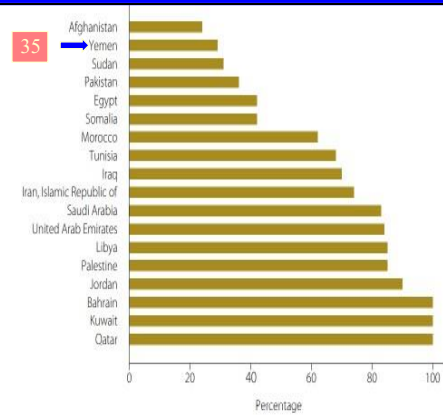
Family Medicine !!

Sloane ,2012

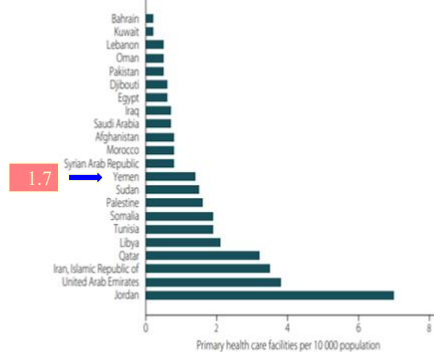
▪ Most specialties define themselves by exclusion, such as age, gender, body organ or system.

But!!!

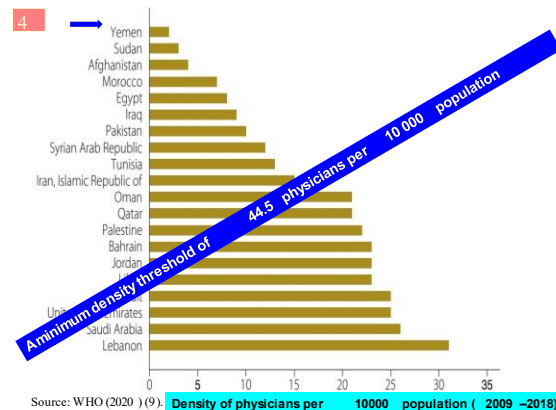
▪ Family Medicine (FM) does not limit it self. It is a specialty of inclusion. The focus in FM is on the patient and not on the disease.



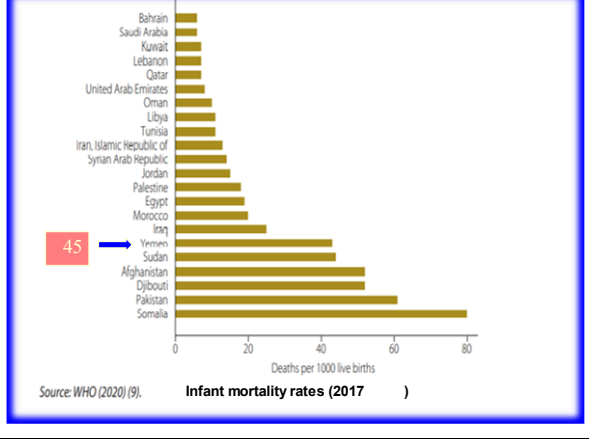
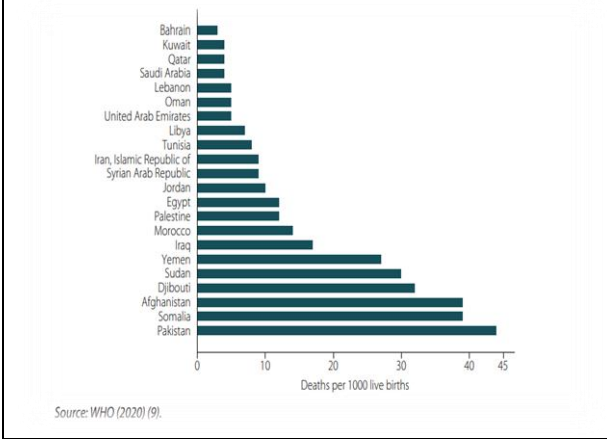
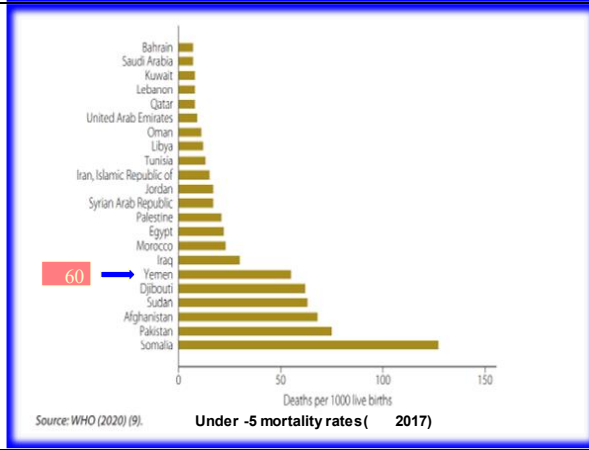
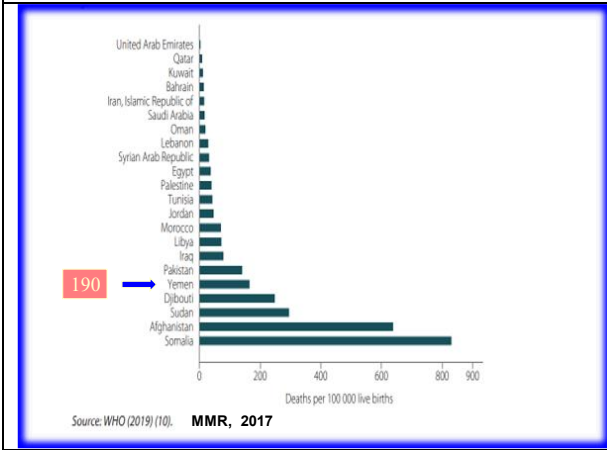
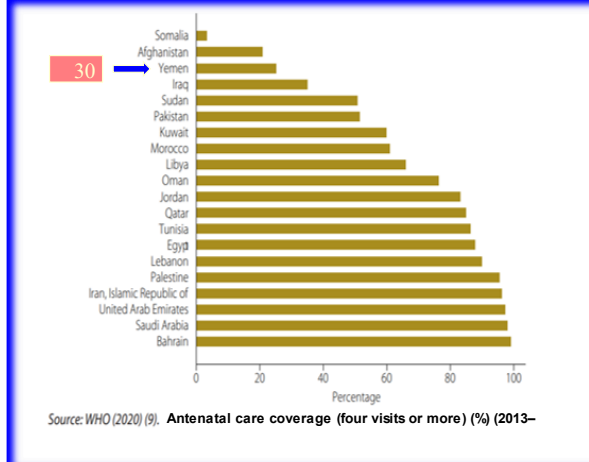
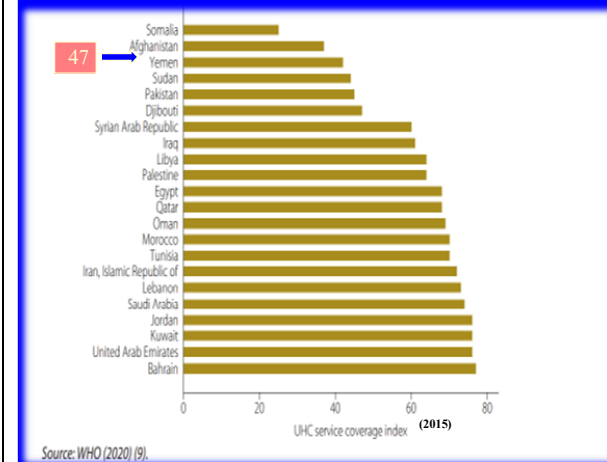
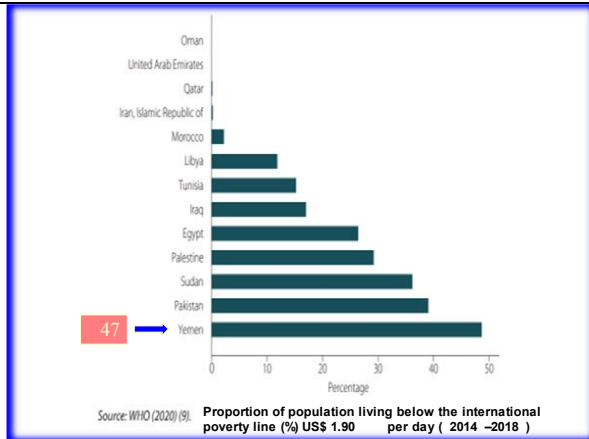
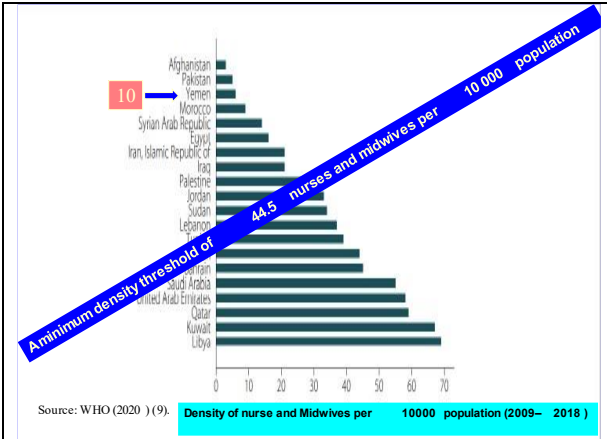
Source: WHO (2020) (9). Population living in urban areas (%) (2014 –2018)

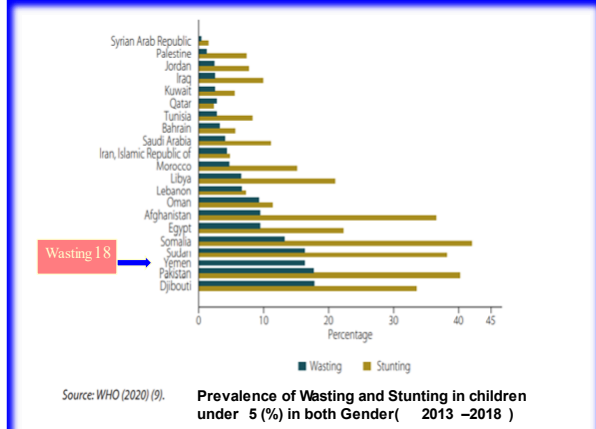
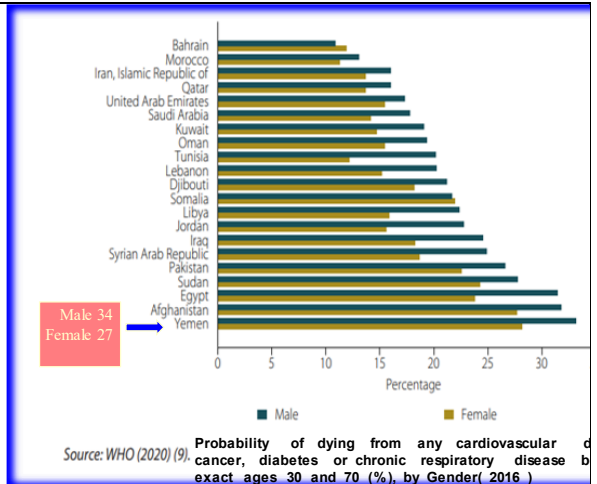
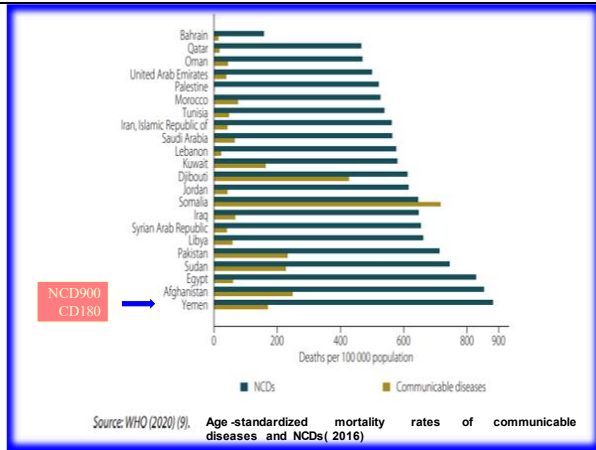


Source: WHO (2020) (9).



Source: WHO (2020) (9). Density of physicians per 10000 population (2009 –2018)





Setting the Scene in Yemen

Who will be the catalyst to improve the current situation?

(5-star - doctor)

★ ★ ★ ★ ★

Recommended Roles of FP in Yemen

(5-star - doctor) + Researcher

- Five star doctor was described by Charles Boelen as a model physician for today's society, then by WHO(2000).
- He would respond to the real needs of both the individual patient and the surrounding community.

Recommended Roles of FP in Yemen

- ★ Care Provider
- ★ Communicator
- ★ Educator
 - For his practice population
 - For his team member
- ★ Decision -Maker
 - Appropriate use of clinical reasoning style
 - Evidence Based decision-making
- ★ Community Leader

Setting the Scene in Yemen

(The current situation of the 5-star - doctor -FP)

- The only medical school offering Residency Program in Family Medicine is Faculty of Medicine, Hadramout University.
- The total number certified family physicians (47 FPs) graduated from Faculty of Medicine, Hadramout University.
- There is no existing active program of National Fellowship of Family Medicine in Yemen at a moment .
- There is no existing active Program of Arab Board in Family Medicine.

Futuristic View for Happy Yemen

Short Term Strategy ↓ Long Term Strategy

○ Training of young PHCPs (Crash course).

○ Training of young PHCPs (1-year-Professional diploma).

○ Training and certification of old PHCPs (Grand fathering clause).

○ Initiating FM department and curriculum in the under-grade phase in Medical Schools.

Training of young PHCPs (National Fellowship/Arab Board of Family Medicine

○ Initiating FM Programs in the post-grade phase in Medical Schools.(Diploma/ MSC/ MD/ Fellowship).

Futuristic View for Happy Yemen


Short Term Strategy

○ Training of young PHCPs (Crash course in Family Medicine)

Ministry of Health and Population
Academy of Princess Fatima

Crash Course for Primary Health Care Physicians in Family Medicine

Under auspices of His Excellency
Prof. Ehab
Dean of Academy of Princess Fatima



Prepared by
Prof. Mosteh, A. Ismail
Head of Family Medicine Dept., Suez Canal University
Head of Scientific Council of Egyptian Fellowship of Family Medicine
(2021)

Futuristic View for Happy Yemen

Short Term Strategy

○ Training of young PHCPs (Crash course in Family Medicine)

Contents of Crash Course in Family Medicine

- Introduction to the crash course.....
- Aim of the crash course.....
- Required knowledge and understanding in the crash course.....
- Required intellectual skills in the crash course.....
- Required professional and practical skills in the crash course.....
- General transferable skills in the crash course.....
- Target candidates and participants/ duration of the crash course.....
- Modules of the crash course.....
- Structure, contents and assessment of the crash Course.....
- Schedule of the crash course.....
- Recommended reading resources.....

Futuristic View for Happy Yemen

Short Term Strategy

○ Training of young PHCPs (Crash course in Family Medicine)

○ The adopted strategy for conducting crash course is Blended Learning


- The cognitive component of the course could be delivered through designed educational platform (pre-recorded video of the educational session) along with interactive session to answer trainee questions).
- Hands on training at Family practice center/unit by potential trainer to acquire the required clinical skills in FM.
- Portfolio is a prerequisite.
- Pre-post along with formative assessment will be conducted .
- Trainee who will be pass will provided a passing certificate.

Futuristic View for Happy Yemen

Short Term Strategy

○ Training of young PHCPs (1-year- Professional diploma)

Professional Diploma in Family Medicine



Family Medicine Dept., Faculty of Medicine, Suez Canal University
(2020)

Futuristic View for Happy Yemen

Short Term Strategy

○ Training of old (senior) PHCPs (Grandfathering clause)

○ A grandfather clause or grandfather effect is a provision whereby an old rule continues to apply to some existing situation while a new rule applies to all future cases.

○ Those exempt from the new rule are said to have grandfather rights or acquired rights.

○ Grandfather clauses have been used across a range of different policy areas, including healthcare.

○ This initiative was implemented in some countries as Korea

○ Exposing of senior PHCPs to a crash course and depending on reframing of their previous experiences to be consistent with the Evidence based practices.

○ Exemption from some requirements to be certified (e.g Exam. at the end of the course) .

Futuristic View for Happy Yemen

Short Term Strategy

○ Training of old (senior) PHCPs (Grandfathering clause)

○ The adopted strategy for conducting crash course is Blended Learning

- The cognitive component of the course could be delivered through designed educational platform (pre-recorded video of the educational session) along with interactive session to reply on trainee questions).
- Hands on training at Family practice center/unit by potential trainer to acquire the required clinical skills in FM.
- Portfolio is a prerequisite.
- Pre-post test along with formative assessment will be conducted .
- Trainee who will pass the Exam will be certified a passing certificate.

Futuristic View for Happy Yemen

Long Term Strategy

- Initiating FM curriculum in the under-grade phase in Medical Schools.
- Training of young PHCPs (National Fellowship/Arab Board of Family Medicine).
- Initiating FM Programs in the post-grade phase in Medical Schools.(Diploma/ MSc/ MD/ Fellowship)

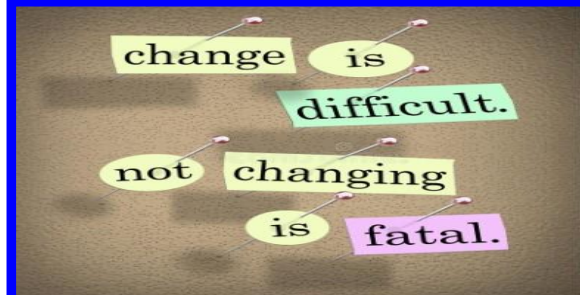
Take Home Message

- ✓ PHC setting is the scene where PHCPs/FPs/GPs are practicing.
- ✓ PHC approach is the way to achieve UHC and HFA.
- ✓ FM has important Principles that Trained PHCPs/FPs/GPs have to implement at the level of their practice.
- ✓ A lot of success has been achieved in health sector in Yemen but more efforts are required to improve health towards achieving UHC and HFA.
- ✓ Five-star-doctor is the catalyst to improve health in Yemen.
- ✓ Trained PHCPs/ FPs/GPs are corner stone in the process of achieving UHC and HFA.

Take Home Message

- ✓ The short term strategy to improve health situation in Yemen could include (Training of young PHCPs through crash course/enrolling in professional diploma program along with Grandfathering clause for old PHCPs).
- ✓ The long term strategy to improve health in Yemen could include (Initiating and activation of FM National Fellowship and Arab Board/starting of FM curriculum in under grade phase along with Diploma/ MSC/MD/Fellowship programs in post-grade phase)

Home Message



RESEARCH ARTICLE

Open Access



Assessment of patient safety culture in primary care setting, Al-Mukala, Yemen

Hana H. Webair^{1*}, Salwa S. Al-assani², Reema H. Al-haddad³, Wafa H. Al-Shaeeb¹, Manal A. Bin Selm² and Abdulla S. Alyamani¹

Abstract

Background: Patient safety culture in primary care is the first step to achieve high quality health care. This study aims to provide a baseline assessment of patient safety culture in primary care settings in Al-Mukala, Yemen as a first published study from a least developed country.

Methods: A survey was conducted in primary healthcare centres and units in Al-Mukala District, Yemen. A comprehensive sample from the available 16 centres was included. An Arabic version of the Medical Office Survey on Patient Safety Culture was distributed to all health workers (110). Participants were physicians, nurses and administrative staff.

Results: The response rate from the participating centres was 71 %. ($N = 78$). The percent positive responses of the items is equal to the percentage of participants who answered positively. Composite scores were calculated by averaging the percent positive response on the items within a dimension. Positive safety culture was defined as 60 % or more positive responses on items or dimensions. Patient safety culture was perceived to be generally positive with the exception of the dimensions of 'Communication openness', 'Work pressure and pace' and 'Patient care tracking/follow-up', as the percent positive response of these dimensions were 58, 57, and 52 % respectively. Overall, positive rating on quality and patient safety were low (49 and 46 % respectively).

Conclusions: Although patient safety culture in Al-Mukala primary care setting is generally positive, patient safety and quality rating were fairly low. Implementation of a safety and quality management system in Al-Mukala primary care setting are paramount. Further research is needed to confirm the applicability of the Medical Office Survey on Patient Safety Culture (MOSPSC) for Al-Mukala primary care.

Keywords: Patient safety culture, Primary care, Yemen

Background

Quality and safety are the vital goals for all health care organizations. Patient safety means the extent to which patients are protected from avoidable harm, poor patient safety indicates that patients are not in fact adequately protected [1].

Most researchers and activities are directed to hospitals although it is well known that the majority of patients are treated and cared for in primary care facilities, especially by family doctors [2]. This is especially true in developing countries, often with significant limitations

on infrastructure, as well as in procedures and standards for safe practices [2]. Eastern Mediterranean and African Study found that unsafe care affects around 10 % of patients, most those incidents were preventable [3].

It goes without saying that patient safety is a challenge against primary care success [4]. Actually, the amount of medical errors in primary care has been found to be difficult to estimate, as it depends on the accuracy of recording and incidents standardization so very little is known about these errors [5]. It has been identified that a significant proportion of safety incidents caught in hospitals had originated in the earlier levels of care [2].

As a result, the World Health Organization (WHO) Patient Safety Program has initiated the “Safer Primary Care” project. It focuses on risk exposures, harms which

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are preventable, and how to protect patients at primary care level [6].

In order to enhance primary care safety, the National Patient Safety Agency developed a best practice guide that describes how to “build a safety culture” as the first of the seven key steps for primary care organizations to protect the patients they care for [7]. However, undertaking a baseline assessment of patient safety culture of the organization is the first step to start with in building safety culture [2].

A true safety culture is one in which every person in the organization recognizes their responsibilities in regard to patient safety and works to improve the care they deliver. In addition to a recognition that mistakes and incidents can happen, and that health care is not without its risks [7].

Consensus has emerged among patient safety experts that cultural attributes such as leadership support, teamwork, communication, and fair and just culture principles remain central to ensuring patient safety in health care organizations [8].

Measuring the patient safety culture helps organizations to detect areas for improvement and monitor changes over time [9]. A number of tools have been used in various healthcare settings—most of them have been designed in developed countries [9, 10].

However, culture and other human factors have influences on patient safety so these factors should be considered whenever safety culture measurement tools are applied in different social settings [10, 11].

outpatient clinic. Some of these centers contains more clinics such as general practice, gynecology and nutrition clinics. All clinics in the center share the same administrative staff and most non-clinical support staff. Most of the managers are care providers. The majority of these centers are small buildings with scarce resources. Most of them lack quality and safety systems. An information exchange system is not available so communication with other settings occurs informally. There is no information system or medical records in most centers. The total number of staff in each center varies from 3 to16.

Design and sampling

A survey was conducted in the period between June to December 2013. The sample was comprehensive which included all providers and non-care providers in the 16 PHCCs. The sample included physicians, nurses including medical assistants and midwives, and non-clinical staff (non-care providers). The questionnaires were distributed to 110 providers and non-care providers who were available at the time of study. Those who spent less than a month in the center were excluded.

Data collection tool

The current study used the Medical Office Survey on Patient Safety Culture (MOSPSC) which is a validated tool sponsored by the Agency of Healthcare Research and Quality (AHRQ) for medical offices [21]. It has sound psychometric properties and was released first in 2009 [22]. Al-Mukala's PHCCs met the criteria of AHRQ

There are few published studies on patient safety culture in primary care and most of them are in developed countries [12–20]. There is only one published study assessing primary care patient safety culture in an Arabic population (Kuwait) [19], and two studies in the Eastern Mediterranean Region (EMRO) [15, 19]. Ghobashi et al. assessed patient safety culture in Kuwait primary care centers and found that the mean score for positive perception of patient safety culture dimensions was 56 % [19]. It was slightly higher in Iranian health centers (57 %) [15]. Unfortunately, primary care patient safety culture has not been assessed in least developed countries.

The current study aims to provide a baseline assessment of patient safety culture in primary care settings in AL-Mukala, Yemen. It can provide insight into areas for improvement to guide future changes.

Methods

Study setting

This study has been conducted in Al-Mukala District's primary health care centers and units (PHCCs). Al-Mukala is the capital of Hadhramout, Yemen. There were 16 health centers and units in Al-Mukala District at the time of study. All of them contain at least one

were deleted because of the high non response rate and non-applicability. So the current study used the following survey measures; first: two overall patient safety outcomes (6 items). i.e. overall ratings on quality and overall rating on patient safety, second: ten dimensions of culture related to patient safety (38 items): teamwork, patient care tracking/follow up, organizational learning, overall perceptions of patient safety and quality, staff training, owner managing partner/leadership support for patient safety, communication about error, communication openness, office process and standardization, and work pressure and pace [21]. The 10 dimensions' reliability expressed as Cronbach's alpha for the AHRQ data from more than 200 medical offices ranged from 0.75 to 0.83 [21]. whereas for the data in this research, the Cronbach's alpha ranged from 0.20 to 0.70 (Table 1), much lower than the AHRQ data, which inferred that the consistency of the responses on each survey item for the data in this study is very low if compared with the AHRQ data.

If the following six items are deleted, the reliability will become better (range from 0.23 to 0.81) with only one dimension reliability below 0.40. These items are C3, C9, C10, D3, D8, and F6. To justify the validity of using the MSOPSC on assessing patient safety culture in Al-Mukala primary care setting, we planned to use the confirmatory factor analysis (CFA) but it did not meet the test assumptions because of the inadequacy of the sample size.

for medical offices so were eligible for using this survey tool. The criteria are that the medical office should be an outpatient facility in one geographic place. Providers in the medical office should share some or all administrative staff, and clinical support staff. Administration of MOSPSC is restricted to offices with at least three providers. Providers are physicians, and other providers licensed to diagnose health problems, treat patients, and prescribe drugs [21].

The medical office survey tool composed of two overall safety outcomes and twelve dimensions. It has been adapted and validated for use in primary healthcare settings in Spain, it has been found to be useful and recommended for international comparison [16]. It has been translated into Arabic by a translator who has experience in patient safety research, then back-translated to test translation accuracy. The translation was then reviewed by six professional experts from the primary care and patient safety fields. Lastly, the questionnaire was piloted with five health workers to make sure the questions were understood and not unpleasant.

Modification was done in light of a pilot study and the last two dimensions of MOSPSC (information exchange with other settings, and patient safety and quality issues)

positive responses i.e. 'strongly agree', 'agree', or 'excellent'/'very good'. For example, for the item "We have enough staff to handle our patient load," if 30 % of respondents within a medical office responded "Strongly agree" and 40 % responded "Agree", the item-level percent positive response would be $30\% + 40\% = 70\%$. Likewise, for each negatively worded item, the percentage of negative responses was calculated. For example, for the item "Mistakes happen more than they should in this office," if 60 % of respondents within a medical office responded "strongly disagree" and 20 % responded "disagree", the item-level percent positive response would be 80 % (i.e., 80 % of respondents do not believe mistakes happen more than they should in this office). Composite scores were calculated by averaging the percent positive response on the items within a dimension. For example, for a four-item composite, if the item-level percent positive responses were 40, 50, 60 and 50 %, the medical office's composite-level percent positive response would be the average of these four percentages, or 50 % positive. Patient safety strengths are items/dimensions with 75 or more percent positive response [21]. The cutoff percentage for areas needing improvement is less than 60 % positive response. *Univariate analysis*: descriptive statistics for the participants' characteristics as well as patient safety outcomes were calculated. *Bivariate analysis*: The PHCCs items and composite score were compared against the results from 935 United States (U.S.) medical offices of different specialties (benchmark score), with most catego-

Data collection method

The data were collected by paper-based self-administered questionnaires. Questionnaires were distributed to the 16 health centers and units by the researchers and health workers. There were two surveys one week apart to maximize the response rate as recommended by the questionnaire developers [21]. The second survey excluded participants who had filled out the questionnaire during the first survey. Each health center's or unit's questionnaires were uniquely identified. After receiving the completed questionnaires, surveys were examined for completeness. Surveys where the respondent gave the exact same answer to all the questions were omitted as well as blank ones [21]. After removing incomplete questionnaires, a total of 78 respondents from 16 PHCCs provided completed surveys (17 physicians, 46 nurses, and 15 non-care providers). Therefore, the final response rate for the survey was 71 %.

Data analysis

The data were entered and analyzed by the researchers using the Premier customized data tool [21] and IBM SPSS Statistics 20. *Calculation of percent positive responses:* Item percent positive responses for each positively worded question is equal to the percentage of

rized as Family Practice (391 offices) as seen in Table 1 & Fig. 1. The 2014 database consists of data from 27,103 respondents, a range of 5 to 725 completed surveys were submitted per medical office, and the average response rate was 64 % [23]. Comparison with results from regional surveys was impossible because none of them used the same tool. The overall rating of patient safety was compared against results from Kuwait, Iran and U.S. medical offices (Fig. 2).

Ethical considerations

The study protocol has been approved by the department of Family Medicine, Hadhramout University College of Medicine. Permission letters were sent to the managers of the health centers and verbal informed consents were obtained from all the respondents for agreement about participation.

Results

Demographic data

A total of 78 healthcare staff provided survey feedback (a response rate of 71 %). Fifty-six (72 %) of the participants were females. The majority, 63 (81 %) of them, were providers. Seventeen of respondents (22 %) were physicians and 46(59 %) were nurses. Most of them had

Table 1 Item-level result for Al-Mukala primary care centers (Yemen, $N = 78$) and U.S. medical offices ($N = 27,103$)

Survey Items By Patient Safety Culture Dimensions	% positive response	
	PHCCs ^a	Benchmark ^b
1. Teamwork (Cronbach's alpha = 0.468)		
1. When someone in this office gets really busy, others help out. C1	97	87
2. In this office, there is a good working relationship between staff and providers. C2	97	89
3. In this office, we treat each other with respect. C5	96	84
4. This office emphasizes teamwork in taking care of patients C13	94	86
2. Patient Care Tracking/Follow-up (Cronbach's alpha = 0.289)		
1. This office reminds patients when they need to schedule an appointment for preventive or routine care. D3	60	87
2. This office documents how well our chronic-care patients follow their treatment plans. D5	55	80
3. Our office follows up when we do not receive a report we are expecting from an outside provider. D6	26	88
4. This office follows up with patients who need monitoring. D9	68	91
3. Organizational Learning (Cronbach's alpha = 0.402)		
1. When there is a problem in our office, we see if we need to change the way we do things. F1	86	85
2. This office is good at changing office processes to make sure the same problems don't happen again. F5	64	80
3. After this office makes changes to improve the patient care process, we check to see if the changes worked. F7	100	76
4. Overall Perceptions of Patient Safety and Quality (Cronbach's alpha = 0.259)		
1. Our office processes are good at preventing mistakes that could affect patients. F2	87	86
2. Mistakes happen more than they should in this office. F3 ^c	98	80
3. It is just by chance that we don't make more mistakes that affect our patients. F4 ^c	85	81
4. In this office, getting more work done is more important than quality of care. F6 ^c	37	74
5. Staff Training (Cronbach's alpha = 0.399)		
1. This office trains staff when new processes are put into place. C4	57	78
2. This office makes sure staff get the on-the-job training they need. C7	74	77
3. Staff in this office are asked to do tasks they haven't been trained to do. C10 ^c	74	70
6. Owner/Managing Partner/Leadership Support for Patient Safety (Cronbach's alpha = 0.697)		
1. They aren't investing enough resources to improve the quality of care in this office. E1 ^c	50	52
2. They overlook patient care mistakes that happen over and over. E2 ^c	69	53
3. They place a high priority on improving patient care processes. E3	78	82
4. They make decisions too often based on what is best for the office rather than what is best for patients. E4 ^c	59	62
7. Communication About Error (Cronbach's alpha = 0.197)		
1. Staff feel like their mistakes are held against them. D7 ^c	67	61
2. Providers and staff talk openly about office problems. D8	79	61
3. In this office, we discuss ways to prevent errors from happening again. D11	74	82
4. Staff are willing to report mistakes they observe in this office. D12	48	76
8. Communication Openness (Cronbach's alpha = 0.632)		
1. Providers in this office are open to staff ideas about how to improve office processes. D1	53	70
2. Staff are encouraged to express alternative viewpoints in this office. D2	48	71
3. Staff are afraid to ask questions when something does not seem right. D4 ^c	72	73
4. It is difficult to voice disagreement in this office. D10 ^c	61	57
9. Office Processes and Standardization (Cronbach's alpha = 0.365)		
1. This office is more disorganized than it should be. C8 ^c	46	66
2. We have good procedures for checking that work in this office was done correctly. C9	73	73
3. We have problems with workflow in this office. C12 ^c	59	54
4. Staff in this office follow standardized processes to get tasks done. C15	81	82

Table 1 Item-level result for Al-Mukala primary care centers (Yemen, $N = 78$) and U.S. medical offices ($N = 27,103$) (Continued)

10. Work Pressure and Pace (Cronbach's alpha = 0.404)		
1. In this office, we often feel rushed when taking care of patients. C3 ^c	67	37
2. We have too many patients for the number of providers in this office. C6 ^c	58	49
3. We have enough staff to handle our patient load. C11	49	51
4. This office has too many patients to be able to handle everything effectively. C14 ^c	55	62

^aPHCCs: Primary Health Care Centers

^bBenchmark: is data obtained from 935 U.S. medical offices of different specialties, most categorized as Family Practice (391 offices) [23]

^cNegatively worded items

a diploma (67 of them (86 %)). Around half of respondents had patient safety education 40(51 %). More than half of the healthcare staff had work experience of 3 years or more in the current health center (44 of them (56 %)). Most had work duties of less than 33 hours per week (83 %) (Table 2).

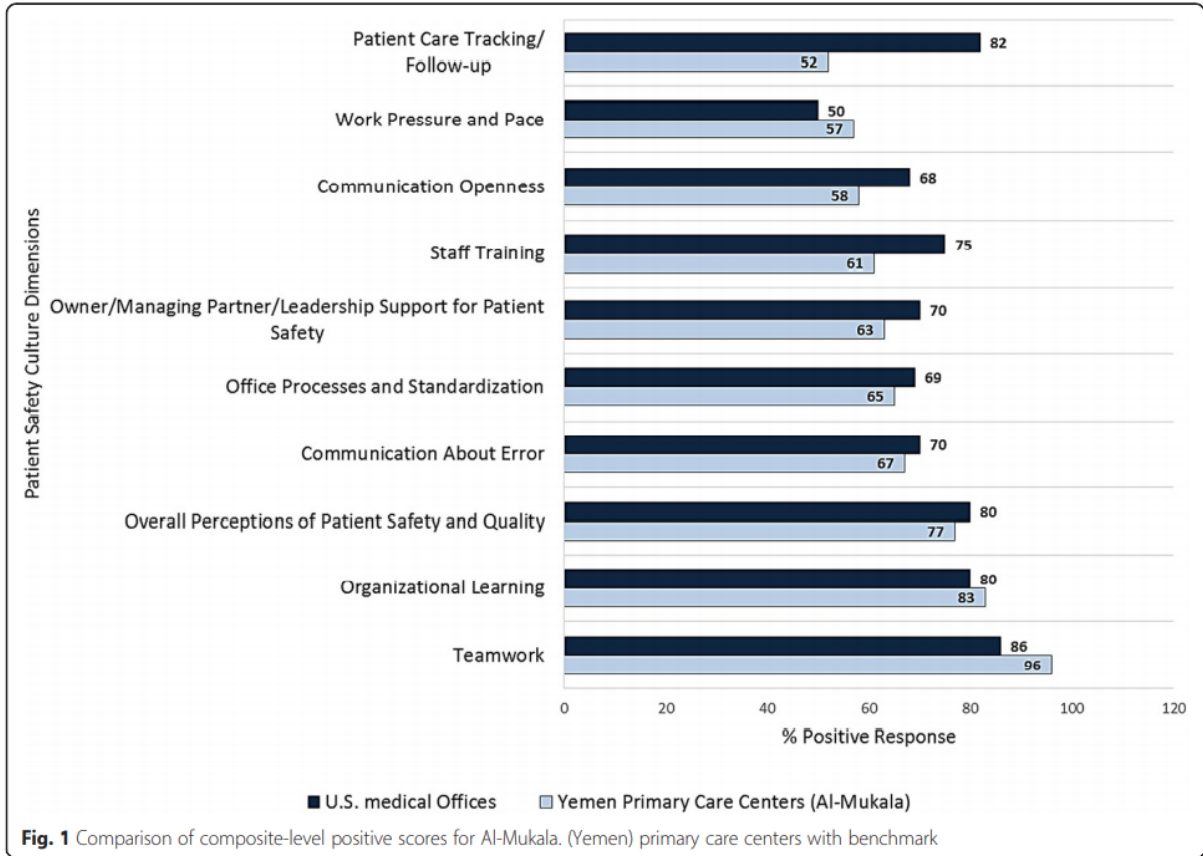
Patient safety culture dimensions

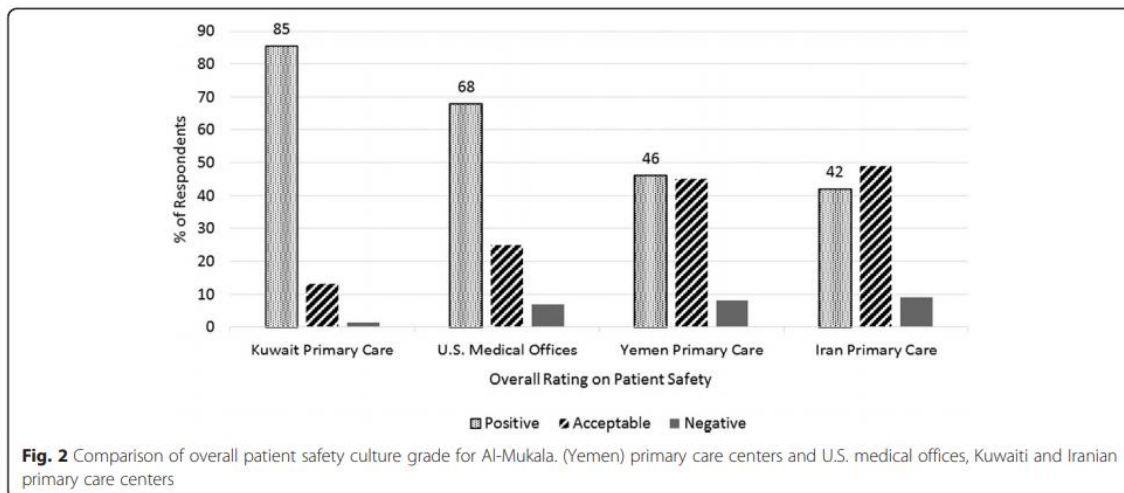
The average positive responses for all dimensions was 67 %. Fig. 1 demonstrates the percentage of positive responses in the ten dimensions in the PHCCs. It was highest for 'teamwork' (96 %), and 'Organizational learning' (83 %) while lowest for 'Work pressure and pace'

(57 %) and 'Patient care tracking/follow-up' (52 %). In comparison with the benchmark average score obtained from 935 medical offices in U.S., the score for 'teamwork' was lower in medical offices (86 %), than in PHCCs. On the other hand, the positive score for 'Patient Care Tracking/Follow-up' was very low for PHCCs (52 %) if compared with medical offices (82 %).

Healthcare quality and patient safety grade

The average positive rating on quality was very low (49 %) in PHCCs in contrast with medical offices (68 %) (Table 2). Patient centeredness in PHCCs had the lowest rating among all of the quality dimensions. It was assessed as





very good to excellent by only 33 % of participants. Whereas equitability had the highest positive rating (81 %) in both PHCCs and U.S. medical offices (82 %) (Table 3). Concerning patient safety, positive overall rating (excellent and very good) on patient safety in Al-Mukala PHCCs (46 %) was less than in Kuwaiti PHCCs and U.S. medical offices as shown in Fig. 2.

Discussion

To our knowledge, this study is the first published that assessed PHCCs patient safety culture in Yemen and least developed countries. However, research is a priority to promote patient safety in primary care [24]. On the other hand, there are many studies conducted in developing and developed countries on patient safety culture

in primary care with diversity both in the tools used and outcomes reporting. But only one published study used MOSPSC in primary care [16].

There were many areas of strengths and others with potential for improvement. Areas requiring improvement are patient care tracking/follow up, communication openness, and work pressure and pace. These areas should be focused on because positive safety culture is so important to improve patient safety in primary care [25].

The average of positive responses for all dimensions in the PHCCs was 67 % which was lower than in U.S. medical offices' average but higher than in Turkish (47 %) [12], Iranian [15], and Kuwaiti PHCCs [19]. Our PHCCs differ from other countries by the very small size and less diversity of team members. Sample size of the above-mentioned studies ranged from 100–276, and their participants included dentists, dieticians, pharmacists, technicians, and community health workers in addition to physicians, nurses and administrative staff. Our high positive response here could be explained by the findings

from the U.S medical office comparative database. It shows that the greater the number of providers, the lower average percent positive on all ten patient safety culture dimensions [23]. Members of small teams may have a more positive perception of team climate in general and work more closely together despite their different professions [26, 27].

The highest percentage of positive responses in the current study were in “teamwork” and “organizational learning” dimensions. Most Al-Mukala PHCCs are small buildings with few staff and an unsophisticated environment which are factors that encourage teamwork [24].

However, these dimensions were areas of strength in many studies regionally and internationally as in Kuwaiti PHCCs, U.S. medical offices and hospitals, as well as in Taiwanese, Lebanese, and Saudi hospitals [11, 19, 23, 28, 29].

On the other hand, the least positive response was in patient care tracking/follow up. This means that in Al-Mukala PHCCs patients are not reminded about appointments, their compliance with the treatment plan is not documented, follow up with patients who need monitoring or when reports from an outside provider are not received are lacking. In contrast, the U.S. medical offices found that patient care tracking was the second highest positive dimension [21]. Unlike the U.S. health system, AL-Mukala PHCCs are characterized by less modernization and lack of an electronic system which makes patient follow up more difficult. Information technology is very important for patient safety as it facilitates rapid tracking and follow-up of medical errors [30].

The second area for improvement in this study is inadequacy of staff and providers to handle the patient load, and the deficiency of work pace. Similarly, benchmark

Table 2 Demographic characteristics of respondents in Al-Mukala (Yemen) primary care centers

Variable		No (%)
Gender	Male	22(28.21)
	Female	56(71.79)
Qualification	Diploma	67(85.90)
	Bachelor or master	11(14.10)
Job position	Care providers	63(80.77)
	Non-care providers	15(19.23)
Patient safety education	Yes	40(51.28)
	No	38(48.72)
Duration of work in the health center (Year)	<1	17(21.79)
	1 - < 3	17(21.79)
	3 < 6	16(20.51)
	6- <11	12(15.38)
	11 or more	16(20.51)
Work hours per week	<16	18(23.08)
	16 - < 25	30(38.46)
	25-33	17(21.79)
	33 or more	13(16.67)
Total		78(100)

medical offices and many other studies conducted in primary care settings and hospitals reported inadequacy of staff and work load as areas of weakness [12, 15, 19, 23, 31]. It has been clarified methodologically that the number of PHCCs in Al- Mukala district and staff in each center are generally few which explains the reason of work pressure. Most published studies in PHCCs used a modified version of the AHRQ hospital survey that does not assess patient care tracking. In those studies, the frequency of events reported, the non-punitive response, in addition to staffing had the lowest positive responses [12, 15, 19, 31]. A very low positive response for event

reporting is expected because primary care is known to lack standardized incidents registration or reporting systems [5]. Zwart et al. reported that incident reporting is actually uncommon in Dutch general practice [32]. So it is realistic to overlook this dimension in MOSPSC.

The third area of concern was that superiors in the PHCCs are not open to staff ideas, and staff are not encouraged to say alternative viewpoints or express disagreement. Communication openness was an area of concern in studies in Kuwait and Turkey [12, 19], but Iranian and Dutch PHCCs, and U.S. medical offices reported higher positivity [15, 23, 31]. The discrepancy between results regarding communication openness from different countries might be related to cultural differences especially communication styles. For example, Americans tend to be direct in communication. They value logic and linear thinking and expect people to speak frankly and in a straightforward manner [33]. However, openness in general is found to be a problem in developing countries and the Middle East [34]. Yemenis like many Eastern populations tend to be conservative in conversation and feedback, so frank criticism is usually not acceptable [35]. Disagreement and criticism against supervisors or team members are frequently interpreted as blame or as a fight against them and may lead to loss of personal relationship or career so most employees tend to avoid it.

Overall, positive rating of healthcare safety and quality in this study was low in all areas (less than 50 %) except equitability, where they were rated positive by 81 % (Table 3). This result is not surprising due to a lack of formal safety and quality management systems in our primary care centers. Our health centers' responsiveness to individual patient preferences, needs, and values was an area of concern. Patient-centeredness in health care has been proved to have a positive impact on patient safety [36]. However, in Yemen, decisions are generally made by the superiors and work their way down, especially in public sectors [35]. So in the domain of healthcare, patients are infrequently involved in the process and their opinions and preferences are not priorities. In

Table 3 Overall rating on quality; comparative results for Al-Mukala primary healthcare centers (Yemen, N = 78) and U.S. medical offices (N = 27,103)

Rating	Excellent % PHCCs(MO) ^b	Very good % PHCCs (MO)	Good % PHCCs (MO)	Fair % PHCCs (MO)	Poor % PHCCs (MO)
i. Patient centeredness	8(36)	25(36)	32(23)	19(5)	16(1)
ii. Effective	17(34)	23(37)	41(25)	17(4)	1(1)
iii. Timely	12(23)	31(33)	32(28)	21(12)	4(4)
iv. Efficient	22(26)	24(35)	43(28)	7(8)	4(2)
v. Equitable	44(55)	37(27)	13(14)	4(3)	1(1)

^aQuality dimension items are: i. is responsive to individual centered patient preferences, needs, and values, ii. is based on scientific knowledge, iii. minimizes waits and potentially harmful delays, iv. ensures cost-effective care (avoids waste, overuse and misuse of services), v. provides the same quality of care to all individuals regardless gender, race, ethnicity, socioeconomic status, language ...etc

^bPHCCs: AL-Mukala primary healthcare centers (Yemen), MO: U.S. medical offices

the same vein, Yemen has in general a slow-paced culture, delays to business and appointments are not uncommon and is not interpreted as a matter of disrespect or impoliteness. This is starting to change slowly as the pace of life is starting to become faster and faster [35]. This feature is probably reflected in healthcare quality making it untimely.

Less than half of respondents in this study gave positive overall rating of patient safety, a similar result was reported in Turkish and Iranian PHCCs [12, 15]. While in Kuwaiti PHCCs, U.S. medical offices, and hospitals as well as Lebanese and Palestinian ones, the most frequent rating was excellent to very good [19, 21, 28, 37]. Overall rating of patient safety assesses systems and clinical processes undertaken by the organization to prevent, detect, and correct problems that could endanger patients [21]. Primary care in developing countries is characterized by suboptimal infrastructure, procedures and standards for safe practices [6]. Al-Mukala PHCCs lack safety and quality systems. Some efforts are done informally to prevent harm but they are inadequate.

Conclusions

Though patient safety culture in Al-Mukala primary care setting is positive overall, patient safety and quality rating were fairly low. The systems and clinical processes to prevent, catch, and correct problems that have the potential to affect patients are inadequate in Al-Mukala health centres. Adding to that, low quality of health care concerning patient-centeredness, effectiveness, timeliness, and efficiency. The highest percent positive responses were for 'teamwork' and 'organizational learning'. Areas of potential for improvement are communication openness, patient care tracking/follow up, and work pressure and pace. Implementation of safety and quality management systems in Al-Mukala primary care setting is paramount. We recommend increasing the number of health workers per centre and finding an appropriate method for effective patient care tracking. Communication between health care providers and the staff within health centres needs to be more clear and direct in order to encourage constructive criticism and to discover mistakes and errors and how to avoid them in future. Further research is needed to ensure the applicability of the MOSPSC for Al-Mukala primary care. There were several limitations to this project. The number of health workers in Al-Mukala health centres was small which led to a small sample size. Since the majority of respondents were physicians and nurses, the results did not adequately reflect the perception of other respondent groups, so the comparison by staff position was not conducted. Another limitation relates to the low Cronbach's alpha values for the composite scores measuring patient safety culture in Al-Mukala PHCCs. Such low scores may have resulted from the fact that some terminology may be unknown to Al-Mukala PHCCs' staff

because the concept of patient safety culture is new and because there is a lack of safety and quality management systems. Testing the validity of MOSPSC was impossible due to an inadequate sample.

Abbreviations

AHRQ: Agency of Healthcare Research and Quality; EMRO: Eastern Mediterranean Region; IOM: International Institute of Medicine; MOSPSC: Medical Office Survey on Patient Safety Culture; PHCCs: Primary health care centers; SPSS: Statistical product and service solutions; U.S.: United States; WHO: World Health Organization.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

SSA and MAB participated in pilot study, data collection, and discussion. RHA and WHA participated in pilot study, data collection, and methodology. HHW participated in pilot study, performed statistical analysis, and formulated results. ASA performed statistical analysis, and formulated results. All authors participated in developing study hypothesis, objective and study design. All authors participated in the sequence alignment and drafted the manuscript. All authors read and approved the final manuscript.

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The Need for Pre-service Education in Integrated Management of Childhood Illness (IMCI) in Yemen

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Director, Aden Cancer Registry and Research Center
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Faculty of Medicine and Health Sciences, University of Aden , Yemen

Abstract:

More than two-thirds of deaths among children are attributed to five conditions which are responsible for 80-90% of outpatient consultations. In the last decades of the 20th century, global meetings have alerted countries and the international health community to the severity of the situation of child morbidity and mortality. The response to this situation was to package a set of simple, affordable and effective interventions for the combined management of the major childhood illnesses and malnutrition at the 1st level health facilities, under the label of “Integrated Management of Childhood Illness” (IMCI) developed by the World Health Organization and the United Nations Children’s Fund. However, the classical Pediatric teaching, in most medical schools, is usually “**hospital oriented**” thus stressing on the accurate diagnosis and management of diseases in well-equipped health facilities but not preparing the physician to fully react with the reality at the first level health facilities. Unfortunately, in most first level health facilities (outpatient clinics, rural and urban health centers, maternal and child health centers, etc.), accurate diagnosis might not always be possible due to the lack of diagnostic tools, overlap of symptoms and huge number of patients. The present paper aimed at describing the rationale that universities need to adopt an integrated approach to the management of sick children (IMCI) at the first level health facilities to **complement** the classical Pediatric teaching.

The paper discusses the context through which IMCI could be incorporated in the curriculum not only the theoretical concepts (e.g. guidelines) in the teaching programs, but also the adoption of more active teaching methods and supervised practice of clinical and communication skills for students to achieve the objective of IMCI pre-service training of

providing students with knowledge and developing their skills and attitudes in managing the most common health problems in the community. The other potential benefits of IMCI pre-services training are also addressed like: (1) by exposing students to this approach since their medical or health-related studies, pre-service training offers the major advantage of preparing them for the “world outside” and the tasks ahead since then, reducing the gap between the educational and outside settings; (2) easing the burden of long, time-consuming and resource-intensive in-service training after they qualify and start providing health services; (3) incorporating pre-service training in the teaching curriculum of the already existing education system to produce human resources, have the potential to be more sustainable than relying only on continuous in-service training; and (4) the impact of the high turnover of trained staff—a chronic problem in many developing countries health systems—is reduced. Finally, the paper concluded with the necessary recommendations to enable the future health graduates to perform efficiently and successfully also in settings where very limited diagnostic tools and therapeutic options are available, once they start their practice whether in the public or private domains.

Caring of children: define the role of family physicians

Prof: Algariri Najla

Abstract:

Family Medicine is the speciality of first contact with the patient, with an emphasis on providing comprehensive physical, psychological and social care for the patient and his family. The focus is on the patient, with the background knowledge of his family and not just on the disease entity, organ or system. Apart from curative care, a Family Physician is in the best position to provide preventive care, promotion of health and rehabilitative care within the community and familiar surroundings.

The proportion of children's health care being provided by family physicians has declined significantly since the early 1990s (as reported by AAFP), this might related to increasing number of paediatricians and decrease awareness of the community about the importance of family physicians in paediatric health also decrease the confidence of




family physicians to treat child with special need like Autism spectrum disorders and developmental and mental disorders.

Family physicians face Challenges to providing quality children and neonatal care services in, given the nature and scale of humanitarian needs, lack of access due to insecurity, weak health system capacity, costs of care seeking, and an ongoing some infection epidemic. Greater attention to availability, quality and coordination of primary health care, For that Yemen needs collaboration systems between paediatricians and family physicians to provide the best quality health services to children and their families

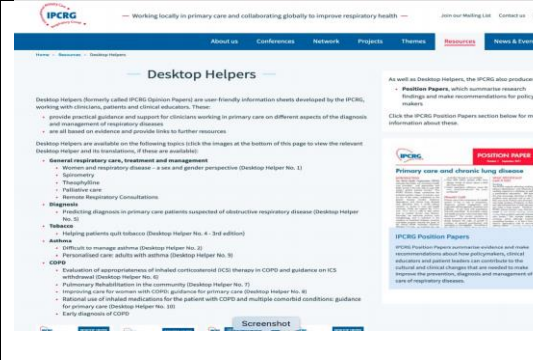
In this topic I will highlight the role of family physicians in children health care, show some data did in other countries related to the family physicians and their experiences in paediatric age group , and at the end I will discuss some solutions to improve the paediatric training part of family physicians.

Principles of managing chronic respiratory conditions in family medicine

Steve Holmes (General Practitioner, United Kingdom)

<p style="text-align: center;"><u>Declaration of Interests (1)</u></p> <ul style="list-style-type: none"> • General practitioner, Park Medical Practice, Shepton Mallet • Primary Care Respiratory Society (Executive and previous chair; Primary Care Respiratory Academy lead, Education Committee) • NHS England South West – Co-Clinical Respiratory Lead • RCGP (College Council, Severn Faculty Board, Essential Knowledge Update and clinical expert, Lung Health Taskforce) • International Primary Care Respiratory Group (IPCRG) Education Committee • Somerset CCG Respiratory Lead and Chair, Somerset Respiratory Programme Board • Health Education England (Associate Postgraduate Dean, GP Trainer in Somerset) • NHS England (National CVD and Respiratory Programme Board) • NHS England (Appraiser) • Guideline involvement (Air Travel, Asthma, COPD, Mesothelioma, Pulse oximetry, Spirometry, Tobacco Dependency) 	<p style="text-align: center;"><u>Declarations of Interest (2)</u></p> <p>Conference attendance / speaker engagements / educational projects / advisory board work (in the last five years -all 2021 unless specified)</p> <p><u>Academic work (2021 – unless specified)</u> University College, London; Universities of Birmingham, Bristol (2019) Cambridge, Edinburgh, Sheffield, Southampton, University of South Wales (2016)</p> <p><u>Other CCGs</u> Devon (2021), Heywood, Middleton, Rochdale CCG (2018) , Rushcliffe CCG (2017)</p> <p><u>Other providers</u> Best Practice, Dorset Practice Nurse Group, Education for Health, EQUIP, Guidelines in Practice Medicof, MIMS, Nursing in Practice, Omniamed, Pulse, RCGP Conferences</p> <p><u>Pharmaceutical / device companies</u> Astra Zeneca, Boehringer Ingelheim, Chiesi, Glaxo Smith Kline, Johnson and Johnson, Mylan, Novartis, Nutricia, Orion, Pfizer, Roche, Teva, Trudell Medical International</p> <p style="text-align: center; background-color: yellow;">250+ PUBLICATIONS</p>
<p style="text-align: center;">Core principals of management in family practice</p> <div style="display: flex; align-items: center;">  <ul style="list-style-type: none"> • Get the diagnosis right • Provide appropriate support and medication • Involve specialist care if unable to manage or doesn't fit in with your experience </div>	<p style="text-align: center;">Covering the two common chronic lung disease conditions</p> <ul style="list-style-type: none"> • Asthma • COPD <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="font-size: small;">1- Image of Paula Radcliffe on Respiratory Health (for many years the fastest female marathon runner with asthma) 2 – Image from British Lung Foundation</p>

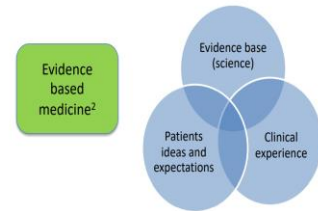
International Primary Care Respiratory Group (IPCRG)



Which asthma guideline to use?

	BTS / SIGN	NICE	GINA
Guideline or strategy	Guideline	Guideline	Report and Strategy
Representative Group (patients and carers, primary, secondary care, variety of health care professionals involved)	Yes	Yes	No
Literature review (methodological)	Yes	Yes	No (expert group review)
Update	2019	2017	2020
Coverage	Comprehensive	Partial	Comprehensive
Drive	Clinical	Cost effective analysis & clinical	Global
Next update due	2022	Not determined	2021
Use	Pragmatic	Aspirational	Global aspirational

"Guidelines not tramlines!"



1- David Haslam quoted in McCartney M, Margaret McCartney: Have we given guidelines too much po BMJ : British Medical Journal. 2014;349 2- Sackett DL, Rosenberg WMC, Gray JAM, Haynes RB, Richardson Evidence based medicine: what it is and what it isn't. BMJ. 1996;312(7023):71-2.

Lets get peak flow right!!

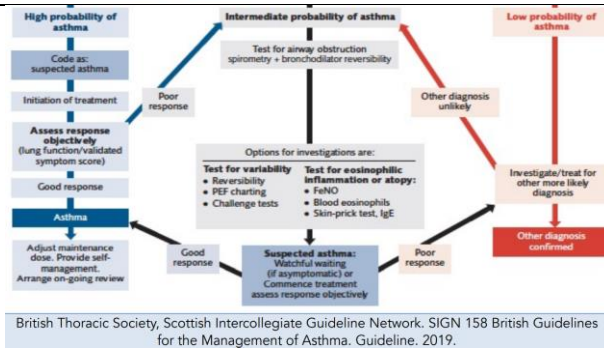


- Set reading to zero (fingers out the way)
- Maximal inspiration
- Fastest expiration possible
- Repeat x3
- Record best (nearest should be within 5%)

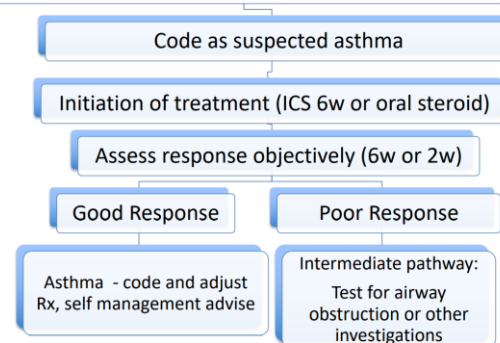
Individual Tests for asthma (adults)


Tests	Sensitivity	Specificity
Bronchodilator reversibility (>12% and 200mls) (2ry care studies only)	17-69%	55-81%
Peak flow rate >20%	46%	80%
Peak flow >15%	3-5%	98-99%
FeNO (adults)	43-88%	60-92%
Blood eosinophils raised (adults)	15-36%	39-100%

British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline. 2019.



High probability of asthma



<p style="text-align: center;">Intermediate probability of asthma</p> <p style="text-align: center;">Test for airway obstruction (spirometry and bronchodilator reversibility)</p> <p style="text-align: center;">Options for investigations are: variability tests (reversibility, PEF chart, challenge tests) or eosinophilic inflammation / atopy test (FeNO, blood eosinophils, skin prick test)</p> <p style="text-align: center;">Suspected asthma: watchful waiting (if asymptomatic) or commence treatment and assess response objectively</p>	<p style="text-align: center;">Low probability of asthma</p> <p style="text-align: center;">Investigate / treat for other more likely diagnosis</p> <p style="text-align: center;">Establish other diagnosis or consider further investigation / referral</p>																							
<p style="text-align: center;">What else might it be? ¹</p> <ul style="list-style-type: none"> Chronic cough symptoms Pertussis Anxiety Dysfunctional breathing Inducible laryngeal obstruction Gastro-oesophageal reflux Cardiac disease / cardiac failure Pulmonary fibrosis (ILD) COPD <ul style="list-style-type: none"> Sheesha pipes – 100 – 200 cigarettes² Heroin / drugs³ Cardiac problems  <p><small>1 - British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline. 2019. 2 - Yadav S, Rawal G. Waterpipe Tobacco Smoking: A Mini-review. J Transl Int Med. 2018;6(4):373-5. 3 - Burhan H, Young R, Byrne T, Peet R, Furlong J, Renwick S, et al. Screening Heroin Smokers Attending Community Drug Services for COPD. Chest. 2019;155(2):279-87.</small></p>	<p style="text-align: center;">Could it be linked to their occupation (or hobbies?)</p> <p>In patients with adult onset, or reappearance of childhood asthma, healthcare professionals should consider that there may be an occupational cause.</p> <p>Adults with suspected asthma or unexplained airflow obstruction should be asked:</p> <ul style="list-style-type: none"> Are you the same, better, or worse on days away from work? Are you the same, better, or worse on holiday? <p>Those with positive answers should be investigated for occupational asthma.</p> <p><small>British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline. 2019.</small></p>																							
<p style="text-align: center;">Estimates suggest that occupational asthma may account for about 9–15% of adult onset asthma – workers at increased risk are:</p> <ul style="list-style-type: none"> bakers food processors forestry workers chemical workers plastics and rubber workers metal workers, welders textile workers electrical and electronic production workers farm workers waiters cleaners painters dental workers, nurses and laboratory technicians <p><small>British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline. 2019.</small></p>	<p style="text-align: center;">Wheezing under 5 years</p> <ul style="list-style-type: none"> My child is always wheezing – someone has said this is likely to be asthma and I've needed to go to the hospital too. What is it? What should I do? 																							
<p style="text-align: center;">Why do specialists not diagnose under 5 years of age?</p> <ul style="list-style-type: none"> The Tucson Children's Respiratory Study found that the majority of children who wheezed at a young age were no longer wheezy by the age of 6 years¹ From 6 years onwards, only 1 in 5 children outgrow their symptoms by the age of 19 years² <p><small>1- Martinez FD, Wright AL, Taussig LM, Holberg CJ, Halonen M, Morgan WJ. Asthma and wheezing in the first six years of life. The Group Health Medical Associates. N Engl J Med. 1995;332(3):133-8. 2- Rakes GP, Arruda E, Ingram JM, Hoover GE, Zambrano JC, Hayden FG, et al. Rhinovirus and respiratory syncytial virus in wheezing children requiring emergency care: IgE and eosinophil analyses. American journal of respiratory and critical care medicine. 1999;159(3):785-90.</small></p>	<p style="text-align: center;">High Variability using Episodic Viral Wheeze (EW) Multiple Trigger Wheeze (MTW) as "Phenotype" n=132 (2-6yr) followed for 1 yr</p> <p>Table 2 Retrospective phenotype determined at start of study compared with phenotype determined prospectively</p> <table border="1"> <thead> <tr> <th rowspan="2">Phenotype determined</th> <th colspan="3">Retrospective phenotype determined at start of study</th> </tr> <tr> <th>EW</th> <th>MTW</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>EW</td> <td>13 (34.2%)</td> <td>11 (15.5%)</td> <td>24 (22.0%)</td> </tr> <tr> <td>MTW</td> <td>12 (31.6%)</td> <td>22 (31.0%)</td> <td>34 (31.2%)</td> </tr> <tr> <td>Total</td> <td>13 (34.2%)</td> <td>38 (55.5%)</td> <td>51 (46.8%)</td> </tr> <tr> <td></td> <td>38 (100%)</td> <td>71 (100%)</td> <td>109 (100%)</td> </tr> </tbody> </table> <p><small>EW = Episodic viral wheeze; MTW = Multiple trigger wheeze. Numbers in brackets indicate percentage of phenotype at the start of the study.</small></p> <p style="text-align: center;">In only one year of follow-up the "phenotype classification" switched in 54%</p> <p><small>Schultz A, Devadason SG, Savenije OE, Sly PD, Le Souef PN, Brand PL. The transient value of classifying preschool wheeze into episodic viral wheeze and multiple trigger wheeze. Acta Paediatr. 2010;99(10):1243-5.</small></p>	Phenotype determined	Retrospective phenotype determined at start of study			EW	MTW	Total	EW	13 (34.2%)	11 (15.5%)	24 (22.0%)	MTW	12 (31.6%)	22 (31.0%)	34 (31.2%)	Total	13 (34.2%)	38 (55.5%)	51 (46.8%)		38 (100%)	71 (100%)	109 (100%)
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<p style="text-align: center;">Under 5 wheezing – two patterns (but grey inbetween)</p> <table border="0"> <tr> <td style="vertical-align: top;"> <p>Episodic Viral Wheeze</p> <ul style="list-style-type: none"> Isolated wheezing episodes Often with evidence of viral cold Well between episodes No history of atopy in child or family </td> <td style="vertical-align: top;"> <p>Multiple Trigger Wheeze</p> <ul style="list-style-type: none"> Episodes of wheezing More triggers than just colds Symptoms of cough / wheeze between episodes Personal or family history of asthma/eczema/hay fever / allergy </td> </tr> </table> <p><small>Brand P. New guidelines on recurrent wheeze in preschool children: implications for primary care. Primary Care Respiratory Journal. 2008;17(4):243-5.</small></p> <p><small>Brand PLP, Caudri D, Eber E, Gaillard EA, Garcia-Marcos L, Hedlin G, et al. Classification and pharmacological treatment of preschool wheezing: changes since 2008. European Respiratory Journal. 2014;43(4):1172-7.</small></p>	<p>Episodic Viral Wheeze</p> <ul style="list-style-type: none"> Isolated wheezing episodes Often with evidence of viral cold Well between episodes No history of atopy in child or family 	<p>Multiple Trigger Wheeze</p> <ul style="list-style-type: none"> Episodes of wheezing More triggers than just colds Symptoms of cough / wheeze between episodes Personal or family history of asthma/eczema/hay fever / allergy 	<p style="text-align: center;">Treatment of under 5 wheezing - acute</p> <ul style="list-style-type: none"> No treatment if mild¹ Salbutamol by spacer better than placebo and nebuliser (but weak evidence)¹ Montelukast ¹ (evidence weak) but review suggests not effective ² Systemic corticosteroids <ul style="list-style-type: none"> Only useful in children with acute severe wheeze in hospital; number needed to treat (NNT) to avoid 1 hospitalisation is 3 (meta analysis)¹ One trial in primary care with benefit³ No evidence of benefit in children < 1 year of age <p><small>1 - Brand P. New guidelines on recurrent wheeze in preschool children: implications for primary care. Primary Care Respiratory Journal. 2008;17(4):243-5.</small></p> <p><small>2 - Brodie M, Gupta A, Rodriguez-Martinez CE, Castro-Rodriguez JA, Ducharme FM, McKean MC. Leukotriene receptor antagonists as maintenance or intermittent treatment in pre-school children with episodic viral wheeze. Paediatric respiratory reviews. 2016;17:57-9</small></p> <p><small>3 - Foster SJ, Cooper MN, Oosterhof S, Borland ML. Oral prednisolone in preschool children with virus-associated wheeze: prospective, randomised, double-blind, placebo-controlled trial. The Lancet Respiratory Medicine. 2018;6(2):97-106</small></p>																					
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Treatment of under 5 - chronic symptoms

- Use the BTS / SIGN guideline advice¹
- Inhaled corticosteroid good evidence (less if under one year in age) and montelukast has some evidence² though review suggests not effective³

1 - British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline, 2019; 2 - Brand P. New guidelines on recurrent wheeze in preschool children: implications for primary care. Primary Care Respiratory Journal. 2008;17(4):243-5; 3 - Brodie M, Gupta A, Rodriguez-Martinez CE, Castro-Rodriguez JA, Ducharme FM, McKean MC. Leukotriene receptor antagonists as maintenance or intermittent treatment in pre-school children with episodic viral wheeze. Paediatric respiratory reviews. 2016;17:57-9

Six steps for a good review

1. Establish that diagnosis is correct? Does the patient have asthma and are the symptoms linked to asthma or is this another condition?
2. Are there other conditions contributing? Does the patient have another condition as well that is potentially making the breathing symptoms worse? (COPD, heart failure, deconditioning, anaemia, anxiety)
3. Structured review
4. Ideas, concerns and expectations – What are the ideas, concerns and expectations of our patient (and carers) linked to their asthma and its treatment
5. Shared decision (include management plan)
6. Documentation

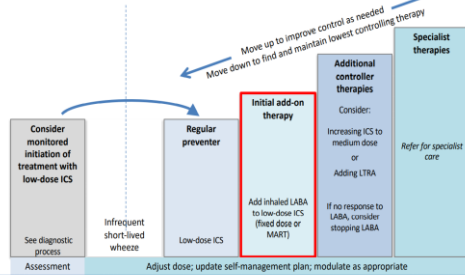
Adapted from independent Nurse 19 May 2014, Holmes S, Scullion JE (2014) <http://www.independentnurse.co.uk/clinical-article/managing-co-morbid-allergic-rhinitis-and-asthma/64>

SIMPLES – adapted SAILS

- Symptoms / control
- Admissions or exacerbations
- Inhaler technique and concordance
- Lifestyle (exercise, smoking, work) / Lung function (PFR)
- Self management plan (for emergency)

Ryan D, Murphy A, Stallberg B, Baxter N, Heaney LG. 'SIMPLES': a structured primary care approach to adults with difficult asthma. Primary Care Respiratory Journal. 2013;22(3):365-73

British guidelines for the management of asthma



British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline.

Who should be referred for specialist review?

- Diagnosis is unclear
- Asthma remains poorly controlled despite optimal treatment with, and adherence to medications readily available in primary care
- Occupational asthma is suspected
- ≥2 courses of OCS for exacerbations in the past year
- more than 12 reliever inhalers in a year (and the amount does not look like reducing)
- severe/life-threatening asthma attack, attended the Emergency Department or been hospitalised with asthma in the last year



Holmes S, Kane B, Pugh A, Whittaker A, McArthur R, Carroll W. Poorly controlled and severe asthma: triggers for referral for adult or paediatric specialist care – a PCRS pragmatic guide. Primary Care Respiratory Update. 2019;Autumn 2019(18):22-7.

Exacerbation management in asthma

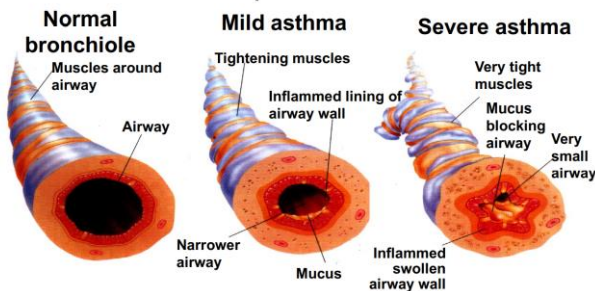
- I need some more steroids for my asthma flare ups - the out of hours said I should keep some in.
- What do you say to your patient?

Got asthma?
You need to call an ambulance when...

- You're struggling to breathe and your reliever isn't helping and
- your symptoms are getting worse (cough, breathlessness, wheeze or tight chest) or
- it's difficult to speak, eat or sleep

Any questions or concerns? Speak to our expert Helpline nurses, Monday to Friday from 9am to 5pm on **0300 222 5800**
www.asthma.org.uk

Remember the problem with asthma!



How common are exacerbations?

222,817 and 211,807 patients with asthma included from the US and UK databases

	US	UK	Length per exacerbation (yrs)
≥1 exacerbation during the follow-up period	12.5%	8.4%	8-11.9
ED presentation / hospitalization	2.3%	1.4%	43.5 – 71.4
If admitted – readmission within 30 days	9.2%	4.7%	Not applicable

Suruki RY, Daugherty JB, Boudiaf N, Albers FC. The frequency of asthma exacerbations and healthcare utilization in patients with asthma from the UK and USA. BMC Pulmonary Medicine. 2017;17(1):74.

Benefits of a personal asthma action plan

The action plan is divided into three sections: **This is what I need to do to stay on top of my asthma.** (Personal best peak flow, preventer inhaler use), **My asthma is getting worse if I notice any of these:** (Symptoms like coughing, wheezing, chest tightness, and peak flow drops), and **I'm having an asthma attack if any of these happen:** (Inability to walk up stairs, difficulty breathing, and peak flow below a certain level). It includes instructions on when to use a reliever inhaler and when to seek medical help.

Development of an acute exacerbation (days not minutes) but if minutes – allergy?

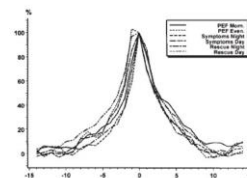


Figure 2. Comparison of change in morning and evening PEF, daytime and nighttime symptoms, and rescue β-agonist use during an exacerbation. Data have been standardized (Day –14 = 0%, maximum change = 100%) to allow comparison of changes with time between different end points.


Tattersfield AE, Postma DS, Barnes PJ, Svensson K, Bauer CA, O'Byrne PM, et al. Exacerbations of asthma: descriptive study of 425 severe exacerbations. The FACET International Study Group. Am J Respir Crit Care Med. 1999;160(2):594-9.

Moderate Your asthma action plan

Fill this in with your GP or nurse

Moderate acute asthma

- increasing symptoms
- PEF >50-75% best or predicted
- no features of acute severe asthma



If you use a written asthma action plan you are four times less likely to be admitted to hospital for your asthma.*

British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline, 2019.


Acute severe – admit if Your asthma action plan

Fill this in with your GP or nurse

Acute severe asthma

Any one of:

- PEF 33-50% best or predicted
- respiratory rate \geq 25/min
- heart rate \geq 110/min
- inability to complete sentences in one breath



If you use a written asthma action plan you are four times less likely to be admitted to hospital for your asthma.*

British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline, 2019.

Life threatening Your asthma action plan

Fill this in with your GP or nurse

Life-threatening asthma

In a patient with severe asthma any one of:

- PEF <33% best or predicted
- SpO₂ <92%
- PaO₂ <8 kPa
- 'normal' PaCO₂ (4.6–6.0 kPa)
- altered consciousness level
- exhaustion
- arrhythmia
- hypotension
- cyanosis
- silent chest
- poor respiratory effort



If you use a written asthma action plan you are four times less likely to be admitted to hospital for your asthma.*

British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline, 2019.

Assessing severity of acute asthma

Severity	Clinical Assessment	Mx
Moderate	Increased symptoms PEFR >50-75% of best or predicted No features of acute severe asthma	Consider steroids – check inhaler / bronchodilators / mx in community
Acute severe asthma	Any one of: PEFR 33-50% of best or predicted, Respiratory rate >25/m, Heart rate >110/m Inability to complete sentence in one breath	ADMIT if any features after initial treatment or concerns Bronchodilators via nebuliser, ?Oxygen, Steroids
Life threatening asthma	Any of the following: Altered consciousness, exhaustion, arrhythmia, hypotension, cyanosis, silent chest, poor respiratory effort, PEF <33% of best or predicted, SpO ₂ <92%	ADMIT all stat – Bronchodilators via nebuliser, ?Oxygen, Steroids

Adapted from British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline, 2019.

Oxygen

C Give controlled supplementary oxygen to all hypoxaemic patients with acute severe asthma titrated to maintain an SpO₂ level of 94–98%. Do not delay oxygen administration in the absence of pulse oximetry but commence monitoring of SpO₂ as soon as it becomes available.

A In hospital, ambulance and primary care, nebulisers for giving β_2 agonist bronchodilators should preferably be driven by oxygen.

B Routine prescription of antibiotics is not indicated for patients with acute asthma.

Steroid therapy

A Give steroids in adequate doses to all patients with an acute asthma attack.

Continue prednisolone (40–50 mg daily) until recovery (minimum 5 days).

Early steroids please for severe asthma

β_2 -agonist bronchodilators

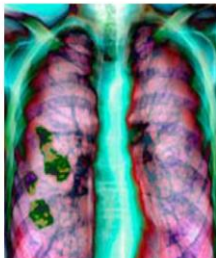
A Use high-dose inhaled β_2 agonists as first-line agents in patients with acute asthma and administer as early as possible. Reserve intravenous β_2 agonists for those patients in whom inhaled therapy cannot be used reliably.

B In patients with acute asthma with acute severe or life-threatening features the nebulised route (oxygen-driven) is recommended.

A In patients with severe asthma that is poorly responsive to an initial bolus dose of β_2 agonist, consider continuous nebulisation with an appropriate nebuliser.

British Thoracic Society, Scottish Intercollegiate Guideline Network. SIGN 158 British Guidelines for the Management of Asthma. Guideline, 2019.

Key Topics in COPD



Average fluctuation in monthly admissions over financial years 2010 to 2017

% fluctuation from that annual average

Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb

— Respiratory conditions — Other 19 most common first recorded diagnoses

Guidelines for COPD

Guideline	NICE (2019) ¹	GOLD (2021) ²
Representative group on guideline	Yes (doctors, nurses, patients, other HCP, academics, researchers, across primary / secondary / tertiary boundaries)	No (all tertiary academic doctors / clinicians) I think.... no GP / nurse / patients
Academic Literature review	Yes systematic where area covered	Review of literature known to specialists not systematic or sent in by invitation
Last full update	2004	Unknown
Last partial update	2010, 2018, 2019	2020
Next guideline planned	uncertain	2021
Coverage	Comprehensive	Comprehensive
Drive	Clinical with aspirational / financial	Clinical, global, no pharma involvement in strategy declared now as an organisation

1 - National Institute for Health and Care Excellence. Chronic obstructive pulmonary disease in over 16s: diagnosis and management NICE guideline NG115. 2019.

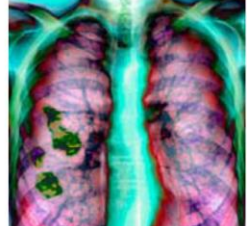
2- Global Initiative for Chronic Obstructive Lung Disease (GOLD). (2020) Global Strategy for the Diagnosis, Management and Prevention of COPD (2021). Available from: <https://goldcopd.org/>

What is the point in treating COPD – times have changed - the positives?

Intervention	Cochrane Review Supportive (QOL/M/H / Exac)	National Guidance Supportive ¹
Steroids for exacerbation	Yes ² (QOL)	Yes
Antibiotic for exacerbation	Yes ³ (M in ICU)	Yes
Influenza immunisation	Yes ⁴ (Exac)	Yes
Pneumococcal vaccination	Yes ⁵ (Exac)	Yes
Smoking cessation	Yes ⁶ (QOL/M)	Yes
LAMA	Yes ⁷ (QOL/H / Exac)	Yes
LABA/ICS	Yes ⁸ (QOL/M/H/Exac)	Yes
LAMA /LABA	Yes ⁹ (QOL/H /Exac)	Yes
Pulmonary rehabilitation	Yes ¹⁰ (QOL)	Yes

ICS inhaled corticosteroids; LABA long-acting β_2 -agonist; LAMA long-acting muscarinic antagonist; QoL quality of life. References: 1. National Institute for Clinical Excellence. Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE, 2019. 2. Walters JA, et al. Cochrane Database Syst Rev. 2014;(9):CD010311. 3. Volkmann DJ, et al. Antibiotics for exacerbations of chronic obstructive pulmonary disease. Cochrane Database of Systematic Reviews. 2018(10). 4. Koppell influenza vaccine for chronic obstructive pulmonary disease (COPD). Cochrane Database of Systematic Reviews. 2018(6). 5. Walters JAE, et al. Pneumococcal vaccine preventing pneumonia in chronic obstructive pulmonary disease. Cochrane Database of Systematic Reviews. 2017(11). 6. Godtfredsen NS, et al. COPD-related mortality after smoking cessation: status of the evidence. European Respiratory Journal. 2008;32(4):844-53. 7. Oba V, Keeney E, et al. Dual combination therapy

Key Topics in COPD



- A good diagnosis can be easy – but some traps for the unwary
- Asthma and COPD – do the experts think it overlaps?
- What are the non-drug pharmacological options for COPD?
- Pharmacological interventions made easy
- A good review with limited time (Co-morbidities matter)
- Exacerbation management in COPD

Case finding for COPD

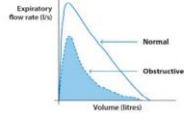
Consider a diagnosis of COPD for people who are:

- over 35, **and**
- smokers or ex-smokers, **and**
- have any of these symptoms:
 - exertional breathlessness
 - chronic cough
 - regular sputum production
 - frequent winter 'bronchitis'
 - wheeze

1 - National Institute for Health and Care Excellence. Chronic obstructive pulmonary disease in over 16s: diagnosis and management guideline NG115. 2019.

COPD diagnosis

- Good history and examination^{1,2}**
 - 90% smokers
 - No AF / Aortic stenosis / effusions / asthma
- Chest xray, full blood count and BMI¹**
 - No obvious cancer, anaemia
- Confirmed by diagnostic quality spirometry^{1,2}**
- Consider A1AT estimation²
- Consider HRCT^{1,2}
- Consider cardiovascular evaluation^{1,2}



1 - National Institute for Health and Care Excellence. Chronic obstructive pulmonary disease in over 16s: diagnosis and management NICE guideline NG115. 2019.
2- Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global Strategy for the Diagnosis, Management and Prevention of COPD. Available from: <https://goldcopd.org/>

Drugs?

- Heroin smokers¹**
 - N=753 people (73% of those approached)¹
 - 35% COPD using fixed ratio / 39% using LLN¹
 - 15% had asthma-COPD overlap (ACO) with features of COPD and asthma¹
- Cannabis^{2,3}**
 - Around 75% of NZ have tried cannabis by age 25 and 13.7% of NZ have used cannabis in recent years²
 - In adults who predominantly smoked resin cannabis mixed with tobacco, additional adverse effects were observed on respiratory health relating to cannabis use.³
- Sheesha / water pipes (water pipe tobacco)⁴**
 - 100 - 200 cigarettes per pipe⁴




1- Burhan H, Young R, Byrne T, Peat R, Furlong J, Renwick S, et al. Screening Heroin Smokers Attending Community Drug Services for COPD. 2019;155(2):279-87. 2- Ribeiro LG, Ind PW. Effect of cannabis smoking on lung function and respiratory symptoms: a structural literature review. *npj Primary Care Respiratory Medicine*. 2016;26(1):16071. 3- Macleod J, Robertson R, Copeland L, McKenzie J, Elton P. Cannabis, tobacco smoking, and lung function: a cross-sectional observational study in a general practice population. *British Journal of General Practice*. 2015;65(631):e89-e95. 4- El-Zaatar ZM, Chami HA, Zaatar GS. Health effects associated with waterpipe smoking. *Transl Int Med*. 2018;6(4):173.

The Radiology Report

I've been told that I've got COPD from my tests?

can they really make a diagnosis with an xray or CT scan?



1 - National Institute for Health and Care Excellence. Chronic obstructive pulmonary disease in over 16s: diagnosis and management NICE guideline NG115. 2019.
2- Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global Strategy for the Diagnosis, Management and Prevention of COPD. Available from: <https://goldcopd.org/>


CXR suggests hyperventilation: Results of Spirometry compared to pre test indication(PMP 8/2013 – 8/2018)

	No FEV1 (clinical)	Cxr suggests COPD (no FEV1)	Hospital or GP diag	Normal FEV1	Low FEV1
n =	158	42	24	62	263
Normal	117 (74%)	30 (71%)	14 (58%)	59 (95%)	29 (11%)
Restriction	9 (6%)	1 (2%)	2 (8%)	0	30 (11%)
Obstruction					
Mild	7 (4%)	6 (14%)	0	0	6 (2%)
Moderate	12 (8%)	4 (10%)	4 (16%)	0	113 (43%)
Severe	3 (2%)	1 (2%)	1 (4%)	0	28 (11%)
Very severe	0	0	0	0	6 (2%)
Reversibility	9 (4%)	0	1 (4%)	3 (5%)	25 (10%)

Park Medical Practice – all spirometry 8/2013 – 8/2018

Danger Diagnosis – not chest xray alone!


- Good history and examination^{1,2}**
 - 90% smokers
 - No AF / Aortic stenosis / effusions / asthma
- Chest xray, full blood count and BMI¹**
 - No obvious cancer, anaemia
- Confirmed by diagnostic quality spirometry^{1,2}**



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The older person who has not smoked

- Good history and examination^{1,2}**
 - 90% smokers
 - No AF / Aortic stenosis / effusions / asthma
- Chest xray, full blood count and BMI¹**
 - No obvious cancer, anaemia
- Confirmed by diagnostic quality spirometry^{1,2}**



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2- Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global Strategy for the Diagnosis, Management and Prevention of COPD. Available from: <https://goldcopd.org/>

The older person who has not smoked

- The commonest cause of COPD in people without a smoking history is undertreated asthma^{1,2}
- Fixed ratio of FEV1/ FVC (70%) overdiagnoses COPD in the older population (compared to Lower Limit of Normal)^{3,4}

1- Sexton P, Black P, Wu I, Sommerville F, Hamed M, Milne D, et al. Chronic Obstructive Pulmonary Disease in Non-smokers: A Case-Comparison Study. *Copd*. 2013; 2- Lamprecht B, McBurnie MA, Vollmer WM, Gudmundsson G, Welte T, Nizankowska-Mogilnicka E, et al. COPD in never smokers: results from the population-based burden of obstructive lung disease study. *Chest*. 2011;139(4):752-63. 3- Vestbo J, Rodriguez-Roisin R. GOLD and the fixed ratio. *European Respiratory Journal*. 2011;38(2):481-2. 4- Swanney MP, Ruppel G, Enright PL, Pedersen OF, Crapo RO, Miller MR, et al. Using the lower limit of normal for the FEV1/FVC ratio reduces the misclassification of airway obstruction. *Thorax*. 2008.

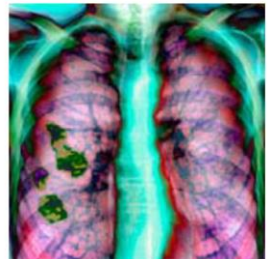
FEV1/FVC - Fixed ratio or LLN?

Missed Diagnosis vs Misdiagnosis

Eschenbach W in COPD Clinical Perspectives, Panos (Ed), 2014
Open Access at <https://www.intechopen.com/books/copd-clinical-perspectives>.

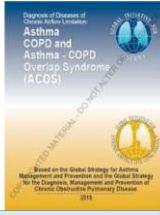
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- Asthma and COPD – do the experts think it overlaps?
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- A good review with limited time (Co-morbidities matter)
- Exacerbation management in COPD



Asthma COPD Overlap Syndrome


- A significant proportion of adult patients over age 40 who present with symptoms of a chronic airway disease have features of both asthma and COPD. Several diagnostic terms, most including the word 'overlap', have been applied to such patients, and the topic has been extensively reviewed. However, there is no generally agreed term of defining features for this category of chronic airway limitation, although a definition based upon consensus has been published for overlap in patients with existing COPD.



GINA, GOLD. Diagnosis of Diseases of Chronic Airway Limitation: Asthma, COPD and Asthma - COPD Overlap Syndrome (ACOS). 2014.

Asthma & COPD Overlap Syndrome

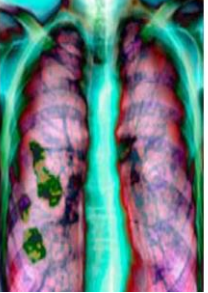
- "We no longer refer to asthma & COPD overlap (ACO) instead we emphasize that asthma and COPD are different disorders, although they may share some common traits and clinical features (e.g. eosinophilia, some degree of reversibility). Asthma and COPD may co-exist in an individual patient. If a concurrent diagnosis of asthma is suspected pharmacotherapy should primarily follow asthma guidelines but pharmacological and non-pharmacological interventions may be needed for their COPD."



Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease
2020 REPORT

Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global Strategy for the Diagnosis, Management and Prevention of COPD (2020). 2019.

Key Topics in COPD



- A good diagnosis can be easy
- Asthma and COPD – do the experts think it overlaps?
- What are the non-drug pharmacological options for COPD?
- Pharmacological interventions made easy
- A good review with limited time (Co-morbidities matter)
- Exacerbation management in COPD

What are the non-drug pharmacological options for COPD?



- Offer treatment and support to stop smoking
- Offer pneumococcal and influenza vaccinations
- Offer pulmonary rehabilitation if indicated
- Co-develop a personalized self management plan
- Optimise treatment for comorbidities

National Institute for Health and Care Excellence. Chronic obstructive pulmonary disease in over 16s: diagnosis and management NICE guideline NG115. 2019.

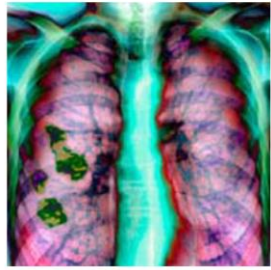
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Pharmacological interventions made easy

- Lets review GOLD (2020)
- Then look at NICE – in a bit more detail



NICE
National Institute for Health and Care Excellence

Lets work through GOLD (initial)

INITIAL PHARMACOLOGICAL TREATMENT

≥ 2 moderate exacerbations or ≥ 1 leading to hospitalization	Group C LAMA	Group D LAMA or LAMA + LABA* or ICS + LABA** <small>*Consider if highly symptomatic (e.g. CAT > 20) **Consider if eos ≥ 300</small>
0 or 1 moderate exacerbations (not leading to hospital admission)	Group A A Bronchodilator	Group B A Long Acting Bronchodilator (LABA or LAMA)
mMRC 0-1 CAT < 10	mMRC ≥ 2 CAT ≥ 10	

Bronchodilators

- SABA (salbutamol – short acting if needed)
- LAMA (improves symptoms / reduces exacerbations)
- LABA (improves symptoms)

≥ 2 moderate exacerbations or ≥ 1 leading to hospitalization	Group C LAMA	Group D LAMA or LAMA + LABA* or ICS + LABA** <small>*Consider if highly symptomatic (e.g. CAT > 20) **Consider if eos ≥ 300</small>
0 or 1 moderate exacerbations (not leading to hospital admission)	Group A A Bronchodilator	Group B A Long Acting Bronchodilator (LABA or LAMA)
mMRC 0-1 CAT < 10	mMRC ≥ 2 CAT ≥ 10	

So what does this mean?

INITIAL PHARMACOLOGICAL TREATMENT

≥ 2 moderate exacerbations or ≥ 1 leading to hospitalization	Group C LAMA	Group D LAMA or LAMA + LABA* or ICS + LABA** <small>*Consider if highly symptomatic (e.g. CAT > 20) **Consider if eos ≥ 300</small>
0 or 1 moderate exacerbations (not leading to hospital admission)	Group A A Bronchodilator	Group B A Long Acting Bronchodilator (LABA or LAMA)
mMRC 0-1 CAT < 10	mMRC ≥ 2 CAT ≥ 10	

So what does this GOLD mean after diagnosis?

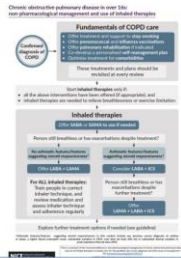
INITIAL PHARMACOLOGICAL TREATMENT

LAMA

≥ 2 moderate exacerbations or ≥ 1 leading to hospitalization	Group C LAMA	Group D LAMA or LAMA + LABA* or ICS + LABA** <small>*Consider if highly symptomatic (e.g. CAT > 20) **Consider if eos ≥ 300</small>
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mMRC 0-1 CAT < 10	mMRC ≥ 2 CAT ≥ 10	

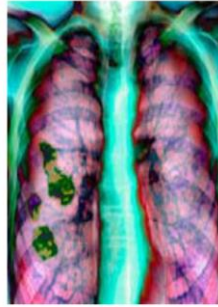
NICE – asthmatic features or features suggesting steroid responsiveness

- any previous secure diagnosis of asthma or atopy
- higher blood eosinophil count
- substantial variation in FEV1 (400mls)
- substantial variation in PEFR (20%)



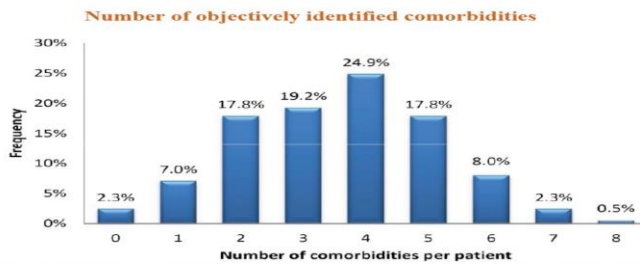
National Institute for Health and Care Excellence. Chronic obstructive pulmonary disease in over 16s: diagnosis and management NICE guideline NG115. 2019.

Key Topics in COPD



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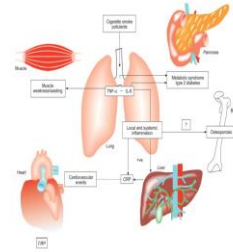
How many people just have COPD without other problems?



Vanfleteren LE, Spruit MA, Groenen M, Gaffron S, van Empel VP, Bruijnzeel PL, et al. Clusters of comorbidities based on validated objective measurements and systemic inflammation in patients with chronic obstructive pulmonary disease. *American journal of respiratory and critical care medicine*. 2013;187(7):778-85.

COPD - other common co-morbidities

- CHD (19-25%)¹
- Heart failure (6%)²
- Diabetes (13.5%)²
- Erectile dysfunction (57%)³
- Osteoporosis (36-60%)¹
- Incontinence >33%⁴
- Myalgia
- Senile purpura
- Anxiety (10-19%)¹
- Depression (10-42%)¹
- Glaucoma / cataracts



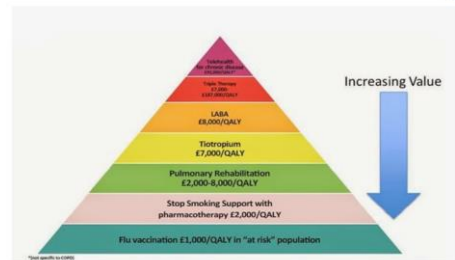
1 - Van der Molen T. 2010;PCRJ 19(4):326-34.
2 - Barnett K, Mercer SW et al Epidemiology of multi-morbidity and implications for health care, research, and medical education: a cross-sectional study. *The Lancet*. 2012; 3 - ATS Poster 2012 4 ERS Poster 2011

Six steps for a good review

1. Establish that diagnosis is correct? Does the patient have COPD and are the symptoms linked to COPD or is this another condition?
2. Are there other conditions contributing? Does the patient have another condition as well that is potentially making the breathing symptoms worse? (asthma, heart failure, deconditioning, anaemia, dysfunctional breathing, anxiety)
3. Structured review
4. Ideas, concerns and expectations – What are the ideas, concerns and expectations of our patient (and carers) linked to their COPD and its treatment
5. Shared decision (include management plan)
6. Documentation

Adapted from independent Nurse 19 May 2014, Holmes S, Scullion JE (2014) <http://www.independentnurse.co.uk/clinical-articles/management-co-morbid-allergic-rhinitis-and-asthma/64402>

Inverse pyramid



Williams S, Baxter N, Holmes S, Restrck L, Scullion J, Ward M. IMPRESS Guide to the relative value of COPD interventions. 2012.

DOSE and COPD

DOSE Index Variable	Points on DOSE Index			
	0	1	2	3
MRC dyspnoea score	0 – 1	2	3	4
FEV ₁ % predicted (Obstruction)	> 50	30 – 49	< 30	
Current smoking status	Non smoker	Smoker		
Exacerbations per year	0-1	2-3	> 3	

Over 5 years, 116 patients (20.6%) died. Mortality was higher in patients with DOSE index >4 (42.4%) than for lower scores (11.0%) (p<0.0001).

DOSE index of 0–3, hazard ratio for mortality set at 1
DOSE index of 4–5, hazard ratio for mortality = 3.48 (95% CI 2.32 to 5.22)
DOSE index of 6–7, hazard ratio for mortality = 8.00 (95% CI 4.67 to 13.7)

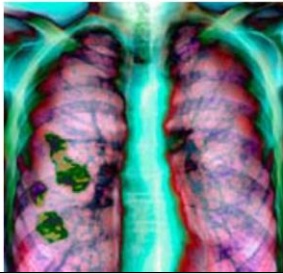
Jones RC, Donaldson GC, Chavannes NH, Kida K, Dickson-Spilmann M, Harding S, et al. Derivation and Validation of a Composite Index of Severity in Chronic Obstructive Pulmonary Disease: The DOSE Index. *Am J Respir Crit Care Med*. 2009;180(12):1189-95

The Structured Review Part (DOSE IT)

- Dyspnoea - Assess symptoms
- Obstruction – FEV1
- Smoking status
- Exacerbations
- Inhaler technique (including concordance / compliance)
- Treatments (consider other interventions and treatments)



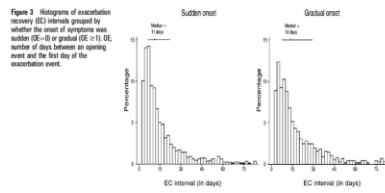
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How soon after worsening of symptoms starts before a patient should commence steroids / antibiotics?

- Start SABA early on
- Start OCS or antibiotics 24-72 hours or longer



Aaron SD, Donaldson GC, Whitmore GA, Hurst JR, Ramsay T, Wedzicha JA. Time course and pattern of COPD exacerbation onset. *Thorax*. 2012;67(3):238-43.

I just need another course of antibiotics and steroids – I'm not quite better yet.

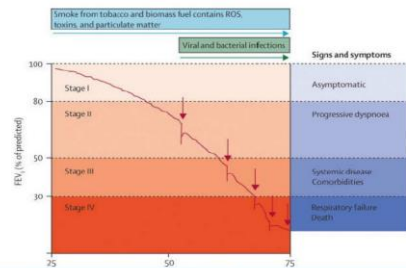
- Clinical review important¹
- Pneumonia
 - Pulmonary embolus
 - Carcinoma of lung
 - Bronchiectasis
 - Pleural effusion
 - Heart failure
 - Atrial fibrillation

- Remember normal recovery²
- No benefit from longer course of antibiotics (for infection)³
- No benefit from longer course of steroids (for exacerbations) in hospital inpatients (no studies in primary care)^{4,5}



Cotton MM, Bucknall CE, Dagg KD, Johnson MK, MacGregor G, Stewart C, et al. Early discharge for patients with exacerbations of chronic obstructive pulmonary disease: a randomised controlled trial. *Thorax*. 2000;55(11):902-6. 2 - Aaron SD, Donaldson GC, Whitmore GA, Hurst JR, Ramsay T, Wedzicha JA. Time course and pattern of COPD exacerbation onset. *Thorax*. 2012;67(3):238-43. 3 - National Institute for Clinical Excellence. COPD: Pneumonia in adults: diagnosis and management 2014. 4 - Sivapalan P, Ingebrigtsen TS, Rasmussen DB, Sørensen R, Rasmussen CM, Jensen CB, et al. COPD exacerbations: the impact of long versus short courses of oral corticosteroids on mortality and pneumonia: nationwide data on 67 000 patients with COPD followed for 12 months. *BMJ Open Respiratory Research*. 2019;6(1):000407. 5 - Walters JA, Tan DJ, White CJ, Wood-Baker R. Different durations of corticosteroid therapy for exacerbations of chronic obstructive pulmonary disease. *Cochrane Database Syst Rev*. 2018;3:CD006897.

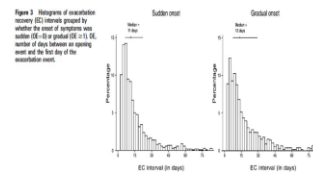
Exacerbations increase decline in FEV1



Hansel TT, Barnes PJ. New drugs for exacerbations of chronic obstructive pulmonary disease. *The Lancet*. 2009;374(9691):744-55

How long does an exacerbation last

Usually last 11 – 13 days (median) and quicker onset settle faster – though many last considerably longer before full symptom resolution



Aaron SD, Donaldson GC, Whitmore GA, Hurst JR, Ramsay T, Wedzicha JA. Time course and pattern of COPD exacerbation onset. *Thorax*. 2012;67(3):238-43.

What dose of steroid and antibiotic and for how long?

- Prednisolone 30mg daily for 5 days. 1,2,3
- Antibiotic for 5 days^{3,4}
 - Amoxicillin,
 - Doxycycline,



1 - National Institute for Clinical Excellence. NG 115 Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE; 2019. 2 - Walters JA, Tan DJ, White CJ, Wood-Baker R. Different durations of corticosteroid therapy for exacerbations of chronic obstructive pulmonary disease. *Cochrane Database Syst Rev*. 2018;3:CD006897. 3 - Global Initiative for Chronic Obstructive Lung Disease (GINA). Global Strategy for the Diagnosis, Management and Prevention of COPD (2020). 2019. 4 - National Institute for Clinical Excellence. Chronic obstructive pulmonary disease (acute exacerbation): antimicrobial prescribing. London: NICE; 2018 Dec 2018.

The International Nature of Family Medicine

Learning from colleagues in other
countries

Dr Helen Crawley

FRCGP MA(Cantab) BMBCh DCH DRCOG DFFP
Diploma in Education, Health and Social Care

RCGP International
Medical Director for Membership and Networks

I am a generalist – a GP (Family Medicine Doctor)

I am also a generalist in my non-clinical interests

- Inter-professional educator: undergraduate to postgraduate
- Non medical prescribing
- Clinical governance
- Quality improvement
- International projects mostly Asia, Africa

Familiar Stories of Family Medicine Development

In my experience four main themes run through the development of family medicine as a speciality everywhere I have worked

1. Core group of Family Medicine practitioners
2. Quality of service
3. Appropriate professional skills
4. Integration of family medicine into national health systems

Just like INTERYem: Training Education Research relying on
peer support locally and internationally, passionate voluntary early adopters, data

1. Core group of Family Medicine practitioners The UK Story shows how slow this can be

- 1948 NHS created
 - Within 1 month 90% of population registered with a GP
- 1950 Lancet article on British General Practice by Dr Collings
 - Shocked by poor standards
- 1951 Professional College of General Practice proposed
 - John Hunt and Fraser Rose 3 Dec 1951

A long slow journey: 70 years of College history

- 1952 Steering committee
 - 7 GPs
 - 5 sympathetic hospital specialists
- 1952 College established within 9 months
 - Local "faculties" to encourage local peer support
- 1953 Foundation membership of 1,655 GPs

A long slow journey: professionalism

- 1963 World's first GP Professor Scotland (England's first was 1972)
- 1965 MRCGP - voluntary membership examination developed
- 1978 Vocational training compulsory to enter family medicine
- 1997 Summative assessment of vocational training compulsory
- 2007 MRCGP – passing membership examination compulsory
- 2014 GP – inspections of all GP surgeries compulsory

If you are setting up a Family Medicine organisation or “College” what might you consider?

- Who can join the “College”?
- What role will the “College” take in defining professional standards?
- What role in advocacy will the “College” take?

The “College”: Who can join?

- Is the “College” inclusive or exclusive?
 - How will family medicine doctors be defined e.g.
 - Professional qualifications obtained
 - The job they are doing with or without specific qualifications
 - Can allied health professionals join?
 - Will there be different levels of qualification and types of membership?
- Will “College” membership embrace all settings e.g.
 - Public and private sectors
 - First contact community doctors and hospital consultants in family medicine
- Will the “College” embrace all models of care e.g. doctors focusing on:
 - Individuals
 - Families
 - Individuals or families within the wider community

The “College”: Professional standards

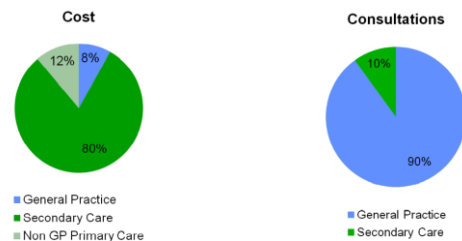
- To what extent is the “College” a guardian of family medicine?
 - Defining or enforcing standards?
 - Advising on, creating and/or delivering standards?
- To what extent is the “College” involved in education and training?
 - What are roles of universities, government, “College” in:
 - Undergraduate family medicine
 - Postgraduate family medicine specialist training
 - Continuing professional development
 - Allied health professional training in family medicine
 - Appraisal, revalidation, accreditation of family medicine practitioners

The “College”: Advocacy

Patients, society, government, regulatory bodies, other professions, international

- Recognition of family medicine as a rewarding specialty
 - What is it, what is its unique role?
 - Gate keeper, holistic, cradle to grave
 - Recognition of family medicine’s central contribution to universal health care
 - Shaping the health care agenda nationally and internationally
 - Integration of health and social care
 - UK NHS is cost effective but we do have workforce, funding and resource issues
 - Pay and conditions – or is this the role of a separate negotiating organisation?
 - Defining and monitoring workload
- collecting DATA is key to effective advocacy**

UK General Practice Cost Effective 90% of consultations, 10% of budget



Pitfalls for the “College”

- ONE voice is more effective - although consider separating:
 - Professional standards
 - Pay and conditions negotiations
- “Grandfather’s rights” – how can existing family medicine doctors join
- Difficult to negotiate realistic standards acceptable to all stakeholders
 - A “College” led by pioneering doctors
 - Overworked practitioners working in difficult conditions
 - Patients
 - Society and Government

2. Quality Family Medicine

Challenges include:

- Misunderstanding family medicine
- Suspicion of private practice

Address the challenges by:

- Honestly recognising the current situation
- Addressing quality issues

DATA is key to recognising situation and demonstrating improvement

Quality Improvement and Assurance

Measuring for improvement or assurance DATA


- Donbedian model 1988 used in NHS for quality improvement
- **Structure:** Staff, equipment, guidelines (capacity to act)
 - **Process:** Interactions, diagnosis and treatment, auditing care (actions taken)
 - **Outcome:** Morbidity, mortality, patient satisfaction, results of audits (observable changes)

UK Care Quality Commission (CQC)

- Safe
- Effective
- Caring
- Responsive
- Well led

UK system: CQC for the whole practice

- Safe
 - Buildings, infection control, medicines in date, vaccine cold chain, safeguarding, learning from mistakes
- Effective
 - Evidence based care with good outcomes
 - Relies on **medical records**, guidelines and audit
- Caring
 - Compassion, kindness, dignity respect
 - For patients and staff

<h2>UK system: CQC 2</h2> <ul style="list-style-type: none"> • Responsive <ul style="list-style-type: none"> • Providing for patient needs <ul style="list-style-type: none"> • Opening hours • Services provided • Accessibility including disability, deafness, marginalised communities • Well-led <ul style="list-style-type: none"> • Leadership, management, governance • Innovation, learning, openness and fairness <p>Data on e.g. care outcomes, patient satisfaction, significant events, staff training</p>	<h2>Quality standards: “good enough”</h2> <ul style="list-style-type: none"> • Aspire to excellence but must be adequate for your context <ul style="list-style-type: none"> • Grading of standards or pass/fail? <ul style="list-style-type: none"> • UK grading: inadequate, requires improvement, good, excellent • Standards acceptable to all stakeholders • Standards will change over time e.g. as overall quality improves • Results available to whom? Public as well as inspectors???
<h2>Myanmar RCGP/MGPS with MoHS</h2> <p>2017 Concerns over quality from senior doctors (specialists)</p> <ul style="list-style-type: none"> • Collected “quality indicators” NOT “standards” from GP surgeries • Aim was to understand the current state of private Family Medicine <p>2018 Visits from UK</p> <ul style="list-style-type: none"> • Formative peer to peer practice visits with RCGP and local GPs • Quality improvement tools taught e.g.: <ul style="list-style-type: none"> • Identifying learning needs <ul style="list-style-type: none"> • Significant event analysis • Audit outcomes • Learning logs, personal and practice development plans • Peer support quality circles set up • Quality indicators, patient satisfaction, audit outcomes measured 	<h2>What happened?</h2> <p>2020 Remote project pivoted to Covid</p> <ul style="list-style-type: none"> • Graduates from 2018 supported new groups in-country as co-trainers • Links with secondary care, public sector clinics, NGOs developed <p>Quality circles grew, group practices formed, less professional isolation, happier GPs Fed into government reaccrreditation and CPD discussions</p> <ul style="list-style-type: none"> • Agreed CPD included active learning and quality improvement NOT just lectures <p>Fed into masters development</p> <ul style="list-style-type: none"> • Quality improvement project instead of traditional research thesis <p>WONCA Asia Pacific Conference planned for 2021 in Myanmar...</p> <p>2021 Myanmar coup: central role of GPs founded on collaborations developed</p>
<h2>Leaders of the future</h2> <p>“In 2015 you taught us about consultation skills. We heard the words “ideas, concerns, expectations”. Then you told us about quality improvement. I thought this would be expensive. But now I can identify my learning needs. I have a learning log and a practice development plan and I meet other young GPs in a group. We recently discussed hepatitis B. One of my colleagues brought a difficult case, and then we researched it and taught each other. This cost nothing.”</p>  <p>Poster photos show enlarging quality circle</p>	<h2>3. Appropriate professional skills Family Medicine as a speciality</h2> <h3>Undergraduate training – the evolving influence of family medicine</h3> <ul style="list-style-type: none"> • Placements in community medicine and family practice • Teaching of other subjects by family medicine doctors e.g. consultation skills • Teaching of family medicine by other specialities/enthusiasts • Separate department of family medicine developed <ul style="list-style-type: none"> • Teaching of family medicine by family medicine specialists • Teaching of much of the undergraduate syllabus in and by family medicine specialists (Some UK courses now mostly taught in primary care)
<h2>Postgraduate specialist training Qualifications</h2> <ul style="list-style-type: none"> • When in career? Immediately after MBBS or after experience?? • Level and content of training? <ul style="list-style-type: none"> • Clinical knowledge and skills appropriate for role and context • Professional behaviours e.g. leadership, quality improvement, research • Apprenticeship, academic, hospital or community based training? • Online, face to face, blended? • Are qualification(s) needed for competence/confidence, to practice family medicine, to teach, to advance career <ul style="list-style-type: none"> • Grandfather’s rights for established family doctors?? 	<h2>Maintaining standards of individual</h2> <ul style="list-style-type: none"> • Licencing • Re-licencing and revalidation might include: <ul style="list-style-type: none"> • Appraisal • CPD • Active learning e.g. quality improvement, significant events, feedback • Tests of clinical competence • Who sets standards for continuing practice? • Who regulates? <ul style="list-style-type: none"> • The profession, the public, the press through “stories of malpractice”, the state
<h2>Respect grows: patients colleagues</h2> <p>Nephrologist: “I would like you to take these new tablets”</p> <p>Patient: “I will check with my family medicine doctor first”</p> <p>Nephrologist: Sighs but recognises that the family doctor knows the whole picture</p>	<h2>4. Integration of family medicine into national health systems</h2> <p>Across levels</p> <ul style="list-style-type: none"> • Community health workers, allied health professionals, doctors • Primary care and hospitals <p>Across providers</p> <ul style="list-style-type: none"> • Public, private, charities, non-governmental organisations (NGOs) <p>Family medicine integrates care across all ages and across social, psychological, physical problems</p> <ul style="list-style-type: none"> • It is NOT condition specific e.g. HIV • It is NOT age/sex specific e.g. child and maternal health

Integration needs collaborative discussions, mutual trust, agreed strategies, pragmatic workable systems e.g.

- Payments into private practice
- Essential Packages of Health Services (EPHS)
- Social franchises
- Specific problems e.g. TB, vaccinations integrated with community health

Referral protocols

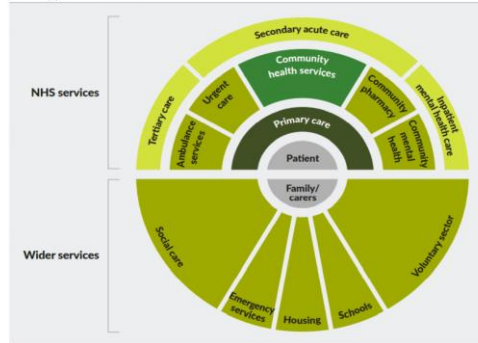
- Informal or formal agreements: e.g. paediatrics, emergencies, chronic disease
- Shared records: minimum of letters between doctors – hope for electronic
- Practicalities e.g. bed and transport availability
- Cost barriers to the patient mitigated

UK GPs central to national health system!!

- Expert medical generalists
- Enhanced specialist roles
- Leadership and co-ordination of primary care team
 - Huge multi-professional team
- Educationalists
- Researchers
- Public health roles
- Governance of individual practitioners and of GP practices
- Role models in community
- Commissioners of secondary care and of other services in primary care
 - Integration of services

Primary care teams led by GPs

Figure 1 Where do NHS community health services fit within systems that support health and care?



Cardiac Investigations and Top Tips in when to refer into Cardiology

Professor Ahmet Fuat, PhD FRCGP FRCP (London) FRCP (Edinburgh) PGDiP (Cardiology)
GP, GP Appraiser and GPSI Cardiology, Darlington

- Honorary Consultant in Cardiology, Co. Durham and Darlington Foundation Trust
- Honorary Professor of Primary Care Cardiology, Durham University
- President Primary Care Cardiovascular Society
- CVD Clinical Advisor RCGP London
- North East and North Cumbria Clinical Research Network GP Engagement and Industry Lead
- Cardiology and Research Leads Darlington PCN and PHD
- Executive committee Durham Darlington and Tees Valley Research Alliance
- Executive committee P3 Primary Care Research Collaborative Newcastle Hospitals Trust

Honoraria and/or expenses received from the following pharmaceutical companies for attending conferences and advisory boards and delivering educational lectures: Alere, Amgen, AstraZeneca, Bayer, Bristol-Myers Squibb, Boehringer Ingelheim, Daiichi Sankyo, Eli Lilly, GlaxoSmithKline, Merck Sharp & Dohme, Novartis, Pfizer, Roche, Roche Diagnostics, Sanofi and Servier.

NICE HF and ESC MI guidelines committee member and author, NICE HTA adviser, NICE HF QOF indicators GPSI adviser, RCP, RCGP, BSC, BSH and BHF advice, PHE/CV Leadership Forum member.

Research grants: Research for Patient Benefit: British Heart Foundation, Heart Research UK, National Institute for Health Research Servier, Roche

What is in this session?

- Is it Hypertension?
- Is it Angina?
- Is it Heart Failure?
- I have palpitations doc?
- Is it Atrial Fibrillation?
- Lipids and FH

- What cardiac and other tests should I consider?
- Is it right to refer?

Public Health England Health Matters

Current detection and management of **High blood pressure**

Now 2019

57% → 80% **Detection**

56% → 80% **Management**

A B C HIGH BLOOD PRESSURE

Referral support: Get it RIGHT!

- Ensure Right people
- See Right specialist
- At Right time
- With Right information including investigations
- So they get the Right diagnosis and treatment first time

Is it Hypertension?

Audrey, aged 68 has been for a preop assessment for knee surgery. Has OA, COPD, hypothyroidism, exsmoker, drinks very little, BMI 29. On Co-codamol, Fenbid forte gel, Levothyroxine, Fostair and Ventolin

BP found to be 166/92, 160/88 and 158/90 by nurse.

See GP to assess and surgery put on hold.

What tests would you arrange?

Hypertension

- Bloods, ECG, CXR, HBPM or ABMP
- Major risk factor:
 - CVA, MI, HF, CKD, AF, cognitive decline, early death
 - 2mmHg ↑sysBP →
 - 10% ↑ in CVA mort,
 - 7% ↑ in CHD mort
 - 50% of population >60yrs (increasing)
- Importance recognised in QOF:
 - Many points...much work?

Hypertension – Dx 1

- If clinic BP $\geq 140/90$
 - Offer ABPM to confirm hypertension
 - Offer HBPM if ABPM declined / not tolerated
- ABPM
 - At least 2 measurements/hour during usual waking hours
 - At least 14 measurements

Home Measurement

Two readings . 1 min apart
Twice daily for seven days
Discard the first day
Average of the 24 remaining reading

Date of test	Specialist BP (top number)	Diastolic BP (bottom number)	Pulse
12-0-02	150	95	70
Home readings			
Day 1 before 00 am	164	97	60
Day 1 between 00 am and 4 pm	140	65	54
Day 1 between 4 pm and 0 pm	122	76	60
Day 2 after 0 pm	161	92	50
Day 2 before 00 am	127	68	60
Day 2 between 00 am and 4 pm	122	60	57
Day 2 between 4 pm and 0 pm	100	70	70
Day 2 after 0 pm	126	77	50
TOTAL of all home readings	1120	602	
DNICE by 0	142	77	
MEV	60	50	
Computed home blood pressure	130	80	

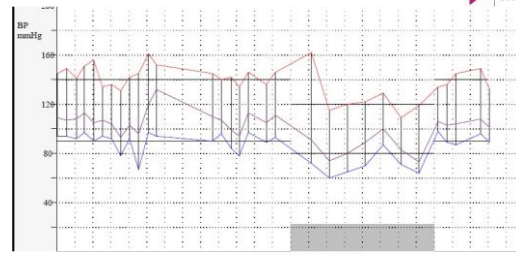
Ambulatory Blood Pressure monitoring

- Emphasis on **mean daytime pressure**, of at least 14 good measurements
- Batteries – how many times can they be used?
- Cuff Washing
- Sufficient nurse time 30 mins
- Not everyone
 - Mastectomy, mental illness
 - HGV, PSV, Firemen

Hypertension - definition

- Stage 1 Hypertension:
 - Clinic BP is $\geq 140/90$ mmHg and
 - ABPM or HBPM average $\geq 135/85$ mmHg
- Stage 2 Hypertension:
 - Clinic BP is $\geq 160/100$ mmHg and
 - ABPM or HBPM average $\geq 150/95$ mmHg
- Severe Hypertension:
 - Clinic SBP is ≥ 180 mmHg or
 - Clinic DBP is ≥ 110 mmHg

Stage 1 Hypertension

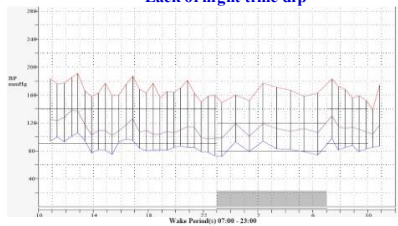


	MIN	Avg	MAX	STD	
Systolic:	131 (13:33 Wed)	142	161 (15:06 Wed)	7.84	mmHg
Diastolic:	67 (14:33 Wed)	91	98 (07:13 Thu)	7.32	mmHg
MAP:	93	107	132	8.18	mmHg
Pulse Pressure:	36	52	78	8.94	mmHg
Heart Rate:	49	75	92	11.06	bpm

Percent of Systolic readings > 140 mmHg: 62.5%
 Percent of Diastolic readings > 90 mmHg: 58.3%

Reading(s): 24
 Time: 67.0%
 Number of Wake Period(s) readings: 24

Lack of night time dip



	MIN	MAX	STD	
Systolic:	139 (10:22 Thu)	199	171 (02:52 Wed)	11.89
Diastolic:	73 (23:52 Wed)	87	106 (12:52 Wed)	8.17
MAP:	67	106	138	10.28
Pulse Pressure:	54	82	96	9.68
Heart Rate:	67	82	92	6.88

Percent of Systolic readings > 140 mmHg: 97.3%
 Percent of Diastolic readings > 90 mmHg: 81.2%

Number of Wake Period(s) readings: 11

	MIN	MAX	STD	
Systolic:	149 (23:22 Thu)	162	177 (02:22 Thu)	9.63
Diastolic:	72 (23:22 Thu)	82	94 (02:22 Thu)	8.05
MAP:	66	109	119	7.87
Pulse Pressure:	67	89	89	7.83
Heart Rate:	70	74	78	2.43

Percent of Systolic readings > 120 mmHg: 100.0%
 Percent of Diastolic readings > 90 mmHg: 57.1%

Number of Sleep Period(s) readings: 8

Routine ECG on hypertensive patient



LVH with strain – ST depression and inverted T waves inferolateral leads



LVH – voltage criteria

- R wave in V5 or V6 > 25 mm
- S wave in V1 or V2 > 25 mm
- Total of R wave in V5 or V6 plus the S wave in V1 or V2 > 35 mm
- Not for young thin individuals
- LVH can only be confirmed by **echocardiography**
- True LVH often occurs with strain pattern (particularly repolarisation changes laterally)
- ECG LVH - strong correlation with HF - 14 fold \uparrow risk of HF in pts > 65 yrs

Hypertension - Rx

- Rx Stage 1 if:
 - < 80 years
 - At least one of:
 - Target organ damage
 - Established CVD
 - Renal disease
 - Diabetes
 - 10 year CV risk $\geq 20\%$ ($> 10\%$ proposed NICE)
- Rx Stage 2:
 - At any age
- Lifestyle advice:
 - For all

Younger Patients?

- Stage 1 < 40 yrs:
 - And without target organ damage, CVD, renal disease or diabetes
 - Consider:
 - Specialist evaluation of secondary causes of \uparrow BP
 - Further assessment of potential target organ damage

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Secondary Hypertension

- Primary and secondary hyperaldosteronism
 - Resistance to treatment plus low K+
 - Response to spironolactone?
 - Renin/ Aldosterone ratio CT scan?
- Renal Artery Stenosis
 - Small kidneys, atherosclerosis, response to ACEI
- Phaeochromocytoma
 - VMA – very rare – 50% picked up by chance
- Cushings Syndrome and Aortic Coarctation
- Obesity and Obstructive Sleep Apnoea
- Refer? Who to?

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Hypertension – monitoring/targets

Based on clinic recordings so add 5/5 to HBPM

Use STANDING BP readings if postural drop of >20mmHg or symptoms of postural hypotension

- Clinic BP to monitor response with target BP:
 - <140/90 in people <80 yrs
 - <150/90 in people ≥80 yrs (but use clinical judgement in those with frailty or multi morbidity)

• Severe hypertension (stage 3 hypertension = clinic BP ≥ 180/120):

- Refer for same day specialist assessment if BP ≥ 180/120 AND
 - Signs of retinal haemorrhage/papilloedema or suspected pheochromocytoma or life-threatening symptoms (e.g. new-onset confusion, chest pain, heart failure or new renal failure)
- If BP ≥ 180/120 and no signs above:
 - Investigate for target organ damage ASAP
 - If target organ damage present start drug treatment without waiting for ABPM/HBPM readings
 - If no target organ damage, repeat BP readings within 7 days

NICE National Institute for Health and Care Excellence

Hypertension in adults: diagnosis and treatment

Offer lifestyle advice and continue to offer it periodically

This is a summary of the recommendations on diagnosis and treatment from NICE guidelines on hypertension in adults. See the original guidance at www.nice.org.uk/guidance/ng133

Choice of antihypertensive drug¹, monitoring treatment and BP targets

Hypertension with type 2 diabetes

Age <55 and not of Black African or African-Caribbean family origin

Age ≥55 or over

Black African or African-Caribbean family origin (same age)

Step 1: ACEI or ARB² / CCB

Step 2: ACEI or ARB² / CCB or thiazide-like diuretic / ACEI or ARB² or thiazide-like diuretic

Step 3: ACEI or ARB² + CCB + thiazide-like diuretic

Step 4: Confirm resistant hypertension; confirm elevated BP with ABPM or HBPM; check for postural hypertension; discuss adherence; consider seeking expert advice or adding: low-dose spironolactone³ if blood potassium level is >4.5 mmol/L; alpha-blocker or beta-blocker if blood potassium level is >5.5 mmol/L; seek expert advice if BP is uncontrolled on optimal tolerated doses of 4 drugs.

Monitoring treatment

Use clinic BP to monitor treatment. Measure standing and sitting BP in people with:

- type 2 diabetes or
- symptoms of postural hypotension or
- aged 80 and over.

Advise people who want to self-monitor to use HBPM. Provide training and advice. Consider ABPM or HBPM, in addition to clinic BP, for people with white-coat effect or masked hypertension.

BP targets:

Reduce and maintain BP to the following targets:

- Age <80 years:
 - Clinic BP <140/90 mmHg
 - ABPM/HBPM <135/85 mmHg
- Age ≥80 years:
 - Clinic BP <150/90 mmHg
 - ABPM/HBPM <145/95 mmHg

Postural hypotension:

- Base target on standing BP
- Frailty or multimorbidity:
- Use clinical judgement.

BIHS
Blood and Blood Pressure Institute

This material remains public and is available for use in treatment guidelines (© 2019 British Hypertension Society).
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Published August 2019

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Summary

- Use AMBP or HBPM
- Check BP reading is correct
- Check compliance and manage lifestyle, lipids etc
- Maximise medication but be mindful in elderly
- Refer suspected secondary hypertension and patients <40,
- Consider referring Uncontrolled BP despite 3 or more antihypertensives, those with multiple drug intolerances and suspected non-adherence to medication
- Review local QOF to drive up standards

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Do you need any tests ?

- Doug is 65
- He is breathless and has a tight chest walking up hills
- Goes off with rest
- He feels generally tired
- Ex smoker 20 years
- Treated BP 10 years
- Dad had MI age 71

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Clinical History and Physical Examination?

Typical STABLE angina is

- Constricting discomfort in the front of the chest/neck, shoulders, jaws or arms
- Precipitated by physical exertion(or stress)
- Relieved by rest or GTN in about 5 minutes
- All 3 features is typical angina
- This applies to men and women
- Pain which lasts > 15 mins and occurs at rest or increasing severity in people with known angina may be ACS or unstable angina
- This would be associated with dizziness, sweating, pallor, breathlessness etc

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Factors which make Angina unlikely are when:-

- Chest pain is continuous or very prolonged
- Chest pain is un related to exercise
- Worse on inspiration
- Associated with dysphagia

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What are the important risk factors for CAD?

- A= Age
- B= Blood Pressure
- C= Cigarettes
- C= Cholesterol
- D= Diabetes
- E= Ethnicity South Asian
- F= FH
- G= eGFR and CKD

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Which blood tests would be helpful?

- Tests to help improve risk estimation
- Lipids
- HbA1C
- U and E
- Tests to identify conditions which may increase myocardial oxygen demand and exacerbate angina especially Anaemia and hyperthyroidism
- Troponins are not indicated in primary care, if you think it is ACS admit please

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Would you arrange an ECG?

- NICE recommends that if stable angina cannot be excluded on clinical grounds a 12 lead ECG should be taken as quickly as possible
- A normal ECG does not rule out significant coronary disease
- Some abnormalities are more common with IHD
- How long does it take for you to get a 12 lead ECG in the practice?
- How good are you at looking at ECG?

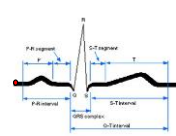

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Remember have a system

- Rate
- Rhythm
- PR interval
- Axis
- QRS width
- QRS progression chest leads
- QT interval
- T wave

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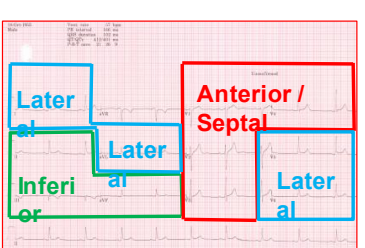
Sinus Rhythm

P wave: atrial depolarisation
PR interval: start of atrial depolarisation to start of ventricular depolarisation
QRS complex: ventricular depolarisation
ST segment: pause in electrical activity before repolarisation
T wave: ventricular repolarisation

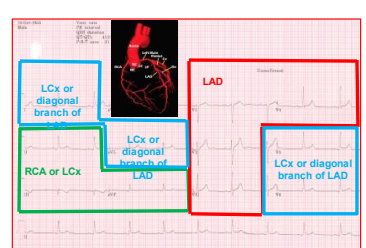
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ECG Territories (relating mainly to LV)

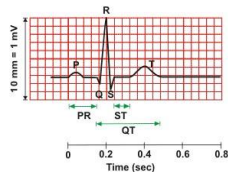


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ECG Territories (relating mainly to LV)



ECG – normal intervals



P wave (0.08 - 0.10 s) QRS (0.06 - 0.10 s)
 P-R interval (0.12 - 0.20 s) Q-T_c interval (≤ 0.44 s)*
 *QT_c = QT / \sqrt{RR}

PR interval: 0.12–0.2 secs
(3-5 small squares)

QRS duration: < 0.12 secs
(3 small squares)

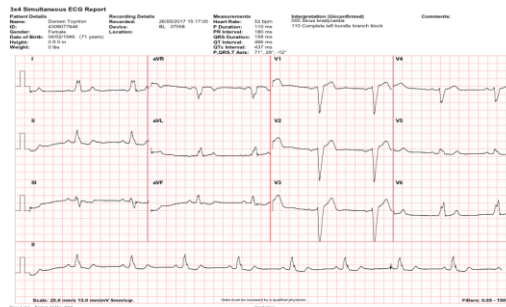
ST segment: isoelectric

T wave: usually positive,
except AVR (possibly V1)



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Doug age 65 does this help?



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Bundle Branch Block

Widened QRS > 0.12 secs (> 3 small squares)

Best seen in chest leads V1 and V6

RBBB – 'rSR' in V1



LBBB – 'M' shaped QRS in V6



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Causes of LBBB

- Aortic stenosis
- Ischaemic heart disease
- Hypertension
- Dilated cardiomyopathy
- Anterior MI
- Primary degenerative disease (fibrosis) of the conducting system (Lenegre disease)
- Hyperkalaemia
- Digoxin toxicity

NB. It is unusual for left bundle branch block to exist in the absence of organic disease.

New LBBB in the context of chest pain is traditionally considered part of the criteria for thrombolysis. However, more recent data suggests that chest pain patients with new LBBB have little increased risk of acute myocardial infarction at the time of presentation.



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CG 95

Chest pain (without known CAD)

Clinical assessment

typical angina, atypical angina, noncardiac

routine blood tests, BP, 12 lead ECG

Duke clinical risk score



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Table 1 Percentage of people estimated to have coronary artery disease according to typicality of symptoms, age, sex and risk factors*

Age (years)	Non-anginal chest pain				Atypical angina				Typical angina			
	Men Lo	Men Hi	Women Lo	Women Hi	Men Lo	Men Hi	Women Lo	Women Hi	Men Lo	Men Hi	Women Lo	Women Hi
35	3	35	1	19	8	59	2	39	20	88	10	78
45	9	47	2	22	21	70	5	43	51	92	20	79
55	23	59	4	25	45	79	10	47	80	95	38	82
65	49	69	9	29	71	86	20	51	93	97	56	84

For men older than 70 with atypical or typical symptoms, assume an estimate > 90%.
 For women older than 70, assume an estimate of 61–90% EXCEPT women at high risk AND with typical symptoms where a risk of > 90% should be assumed.

Values are per cent of people at each mid-decade age with significant coronary artery disease (CAD).
 Hi = High risk = diabetes, smoking and hyperlipidaemia (total cholesterol > 6.47 mmol/litre).
 Lo = Low risk = none of these three.

The shaded area represents people with symptoms of non-anginal chest pain, who would not be investigated for stable angina routinely.
Note: These results are likely to overestimate CAD in primary care populations.
 If there are resting ECG ST-T changes or Q waves, the likelihood of CAD is higher in each cell of the table.

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Duke Probability of having CHD, using Clinical Variables

This score is not applicable if patient is already known to have CHD

Age	40 years	
Sex	<input type="radio"/> Male	<input checked="" type="radio"/> Female
Characteristics of presenting Chest Pain 1-3		
1. Precipitated by exercise or emotional stress	<input type="radio"/> Yes	<input checked="" type="radio"/> No
2. Brief duration (≤ 15min)	<input type="radio"/> Yes	<input checked="" type="radio"/> No
3. Relieved promptly by rest or GTN	<input type="radio"/> Yes	<input checked="" type="radio"/> No
4. Retrosternal	<input type="radio"/> Yes	<input checked="" type="radio"/> No
5. Radiating to jaw, neck or L arm	<input type="radio"/> Yes	<input checked="" type="radio"/> No
6. Absence of other cause of chest pain	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Categorisation of Chest Pain		
		Chest Pain 7 Cause
Clinical Risk variables 4,5		
Current Smoker	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Diabetes	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Previous MI	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Cholesterol > 6.5 mmol/l (>250 mg/dl)	<input type="radio"/> Yes	<input checked="" type="radio"/> No
ECG: Q waves of old MI	<input type="radio"/> Yes	<input checked="" type="radio"/> No
ECG: ST changes at rest	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Probability of patient having significant* CHD (Duke) 6	22%	Reset

*≥75% stenosis of at least 1 major coronary artery


Low risk of CHD.

Further non-invasive investigations are usually not helpful.

Diagnostic testing

Estimated likelihood of CAD 10-29%	Estimated likelihood of CAD 30-60%	Estimated likelihood of CAD 61-90%
Offer CT calcium scoring	Offer non-invasive functional imaging	Offer invasive coronary angiography if appropriate
If CT calcium score is: • zero, investigate other causes of chest pain • 1-400, offer 64-slice (or above) CT coronary angiography • >400, follow pathway for 61-90% CAD	If reversible myocardial ischaemia uncertain, offer invasive coronary angiography	Offer non-invasive functional imaging if invasive coronary angiography not appropriate
If significant CAD uncertain, offer non-invasive functional imaging		If significant CAD uncertain, offer non-invasive functional imaging

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1. Calcium is a marker of atherosclerosis
2. Calcium does not occur in normal arteries.
3. Degree of Calcium correlates with overall plaque burden

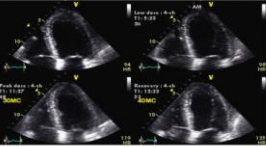
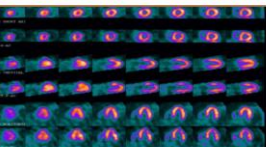
Functional imaging options

Box 5
When offering non-invasive functional imaging for myocardial ischaemia use:

- myocardial perfusion scintigraphy with single photon emission computed tomography (MPS with SPECT) or
- stress echocardiography or
- first-pass contrast-enhanced magnetic resonance (MR) perfusion or
- MR imaging for stress-induced wall motion abnormalities.

Take account of locally available technology and expertise, the person and their preferences, and any contraindications, when deciding on the imaging method.

Non invasive investigation

- **Stress echo** may show abnormal wall motion suggesting ischaemia
- **Myocardial perfusion scan** - radioactive tracers are administered iv and taken up by viable cardiac myocytes. Comparison is made at rest and at stress.
- Fixed defect indicates infarction and reversible(only on stress) is ischaemic

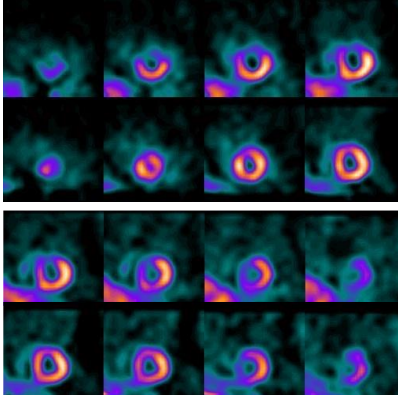
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Stress

Rest

Stress

Rest



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Anti-anginal drug treatment

```

    graph TD
      A[Offer either a beta blocker or calcium channel blocker as first-line treatment for stable angina] --> B[Beta blocker or calcium channel blocker not tolerated]
      B --> C[Symptoms not satisfactorily controlled]
      C --> D[Symptoms not satisfactorily controlled on two anti-anginal drugs and the person is waiting for revascularisation or revascularisation is not considered appropriate]
      B --> B1[Consider switching to the other option]
      C --> C1[Consider either switching to the other option or using a combination of the two]
      D --> D1[Consider adding a third anti-anginal drug]
  
```

Do not:

- offer a third anti-anginal drug when stable angina is controlled with two
- routinely offer anti-anginal drugs other than beta blockers or calcium channel blockers as first-line treatment for stable angina.

Learning summary: chest pain

- The majority of people with chest pain in primary care do not have angina
- The character of pain is key to diagnosis
- Blood tests help risk stratify and identify other causes
- The ECG can identify people at high risk with cardiac pathology who need urgent referral
- Only people with suspected angina or other cardiac condition benefit from seeing a cardiologist

Breathlessness, is it heart failure?

George, aged 76 is getting SOB/OE on the flat (NYHA II), ankle swelling, sleeping with 3 pillows as gets SOB lying flat. MI 10 years ago, HTN, pre-diabetes. On Atenolol 50mgs, Ramipril 2.5mgs bd, GTN spray, Amlodipine 5mgs, Simvastatin 40mgs.

Pitting oedema both feet and lower legs, BP 138/78, pulse regular 76/min, bibasal creps, JVP up 4cms, HS normal with pansystolic murmur 2/6 LSE, spo2 96%

Think about heart failure in a patient presenting with exertional breathlessness and

- A history of MI
- AF
- Chest infection that hasn't gone away
- Diabetes or Hypertension

Diagnostic features of heart failure

<p>Symptoms</p> <ul style="list-style-type: none"> Dyspnoea on exertion Orthopnoea Paroxysmal nocturnal Dyspnoea Decreased exercise tolerance Peripheral oedema 	<p>Signs</p> <ul style="list-style-type: none"> Raised JVP Peripheral oedema Pulmonary oedema Third heart sound Displaced apex Ascites Hepatic engorgement
---	--

Elderly patients also consider:

- Unexplained confusion
- Altered mental state
- Fatigue

Heart Failure

- Priority to identify left ventricular systolic dysfunction most commonly caused by scarring from heart attack
- Big evidence base for medications to improve prognosis
- Access to echo also identifies many other cardiac causes such as valvular heart disease and cardiomyopathy
- Medications can exacerbate mild heart failure symptoms such as calcium channel blockers and NSAID
- Don't forget previous chemotherapy
- Diagnostic accuracy of physical examination especially JVP, lung signs and third heart sound poor
- Which tests should you arrange next?**

Blood tests should be mandatory

- Hb and FBC
- U and E before treatment escalation
- TFT
- Lipids and HbA1C recommended
- NT-ProBNP

LEFT VENTRICULAR WALL STRESS INDUCES NEW BNP SYNTHESIS

BNP: Quantitative Marker of HF

Suppression of renin-angiotensin and endothelin

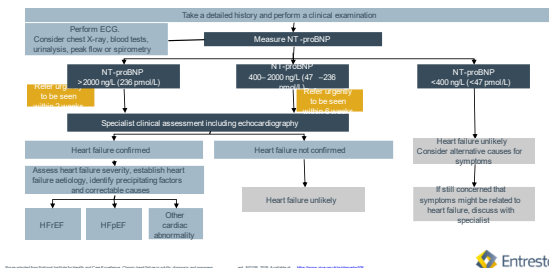
Increased natriuretics

Decreased peripheral vascular resistance (decreased blood pressure)

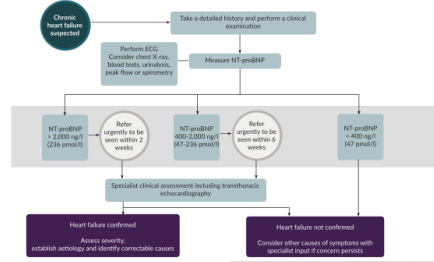
Causes of raised NT proBNP

- AKI and CKD
- Hypertension and LVH
- MI
- AF (pick up new AF in heart failure pathway)
- Pulmonary diseases COPD, PE
- Older age
- Female sex
- Hyperthyroidism
- Sepsis
- Chemotherapy
- BNP can be lowered by obesity, pericardial disease, LV inflow obstruction such as mitral stenosis and HOCM and treatment

NICE diagnosis algorithm¹



Chronic heart failure: diagnosis



ECG, electrocardiogram; NT-proBNP, N-terminal (NT)-pro hormone B-type natriuretic peptide
NICE (2019) Chronic heart failure: diagnosis visual summary. Available at <https://www.nice.org.uk/guidance/ng106/resources>

NT proBNP Age Dependent Thresholds

based on Hildebrandt P, Collinson P, Fuat A et al at EHJ 2010;31:1888-89

	Age < 60 years	Age 60-74 years	Age > 75 years
Raised levels	>50pg/ml	>100pg/ml	>250pg/ml
High levels	>450pg/ml	>900pg/ml	>1800pg/ml

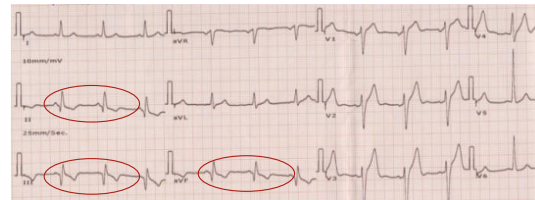
Other Tests: CXR



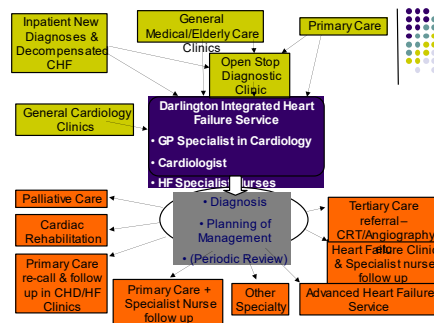
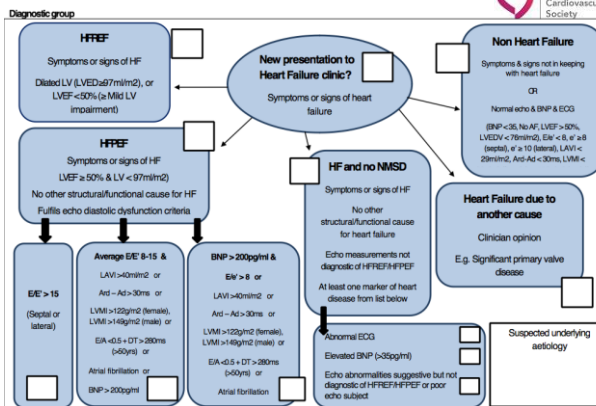
Heart Failure

- U&Es, eGFR 50
- LFTs, TSH, FBC normal
- TC 4.8, HDL 1.0, LDL 2.8
- NT proBNP 986pg/ml
- ECG
- CXR

and ECG



Up to 25% MIs are silent – particularly in diabetics



Public Health England
Protecting and improving the nation's health

CVD: Primary Care Intelligence Packs

NHS Darlington CCG

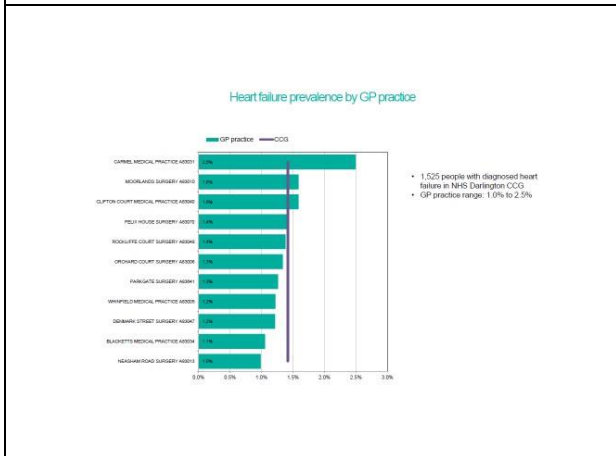
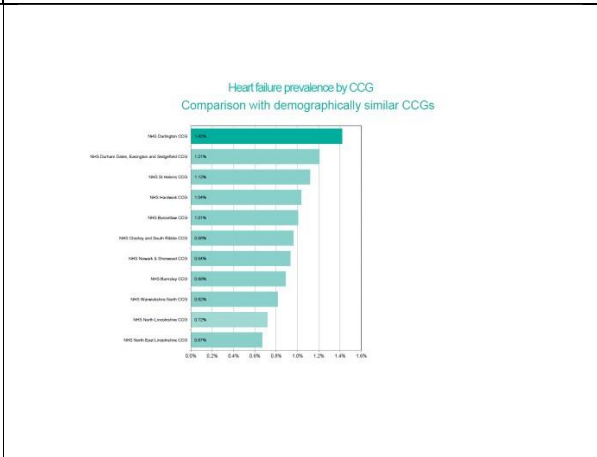
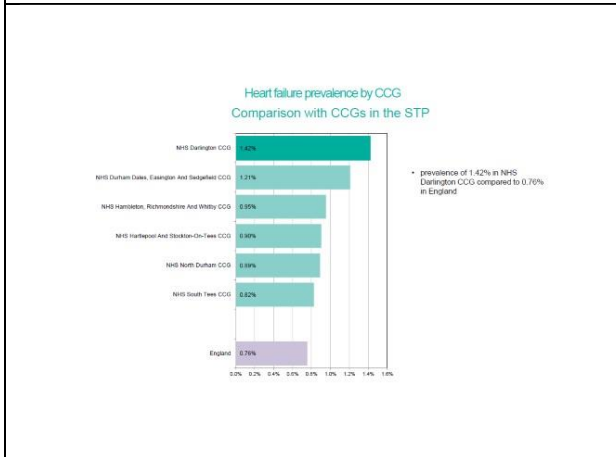
June 2017
Version 1

Clinical review (NICE CHF Guideline NG106)

All people with chronic heart failure need monitoring. This monitoring should include:

- a clinical assessment of functional capacity, fluid status, cardiac rhythm (minimum of examining the pulse), cognitive status and nutritional status
- a review of medication, including need for changes and possible side effects
- an assessment of renal function^[2010, amended 2018]

The frequency of monitoring should depend on the clinical status and stability of the person. The monitoring interval should be short (days to weeks) if the clinical condition or medication has changed, but is needed at least 6 monthly for stable people with proven heart failure.^[2010]



HF identification in chronic disease management

Hypertension
 CHD
 Stroke
 Diabetes
 CKD
 Atrial Fibrillation

➔ **> 90% target population coverage**

History | Alerts | Medication review | Health assessment

Tamara history

- ICD - Cardiovascular diagnosis 01
- ICD - ICD - Cardiovascular disease
- ICD - ICD - History of diabetes
- ICD - ICD - History - Diabetes (I22)

annual review

evaluation reporting stroke

evaluation reporting CHO quality indicators

nocturnal dyspnoea

orthopnoea

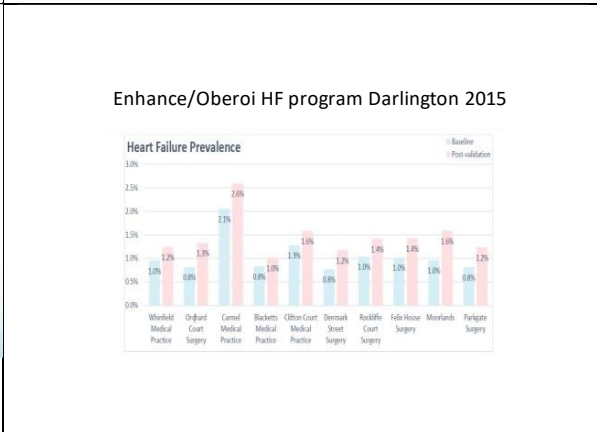
dyspnoea on exertion

oedema

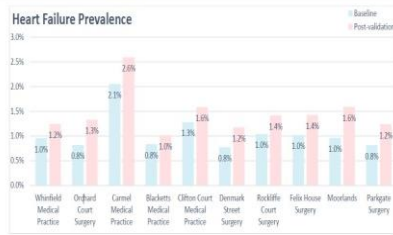
breathlessness

refer to gp

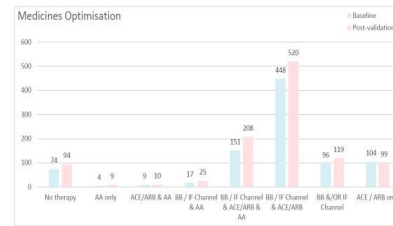
- O/E - oedema CHE140
- O/E - oedema not present C22
- Increasing breathlessness O/E
- No breathlessness C1713



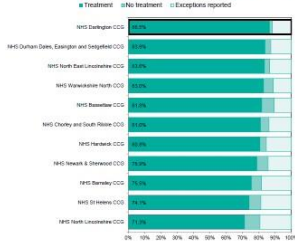
Enhance/Obero HF program Darlington 2015



Enhance - Meds Optimisation



Percentage of patients with heart failure due to left ventricular systolic dysfunction (LVSD) who are treated with ACE-I/ARB and BB by CCG Comparison with geographically similar CCGs



Summary for Heart Failure

- History and PMH are key
- Tests identify potential heart failure with LVSD and other causes of breathlessness
- We use a normal NT proBNP to rule OUT heart failure and as access to echo
- Even NTproBNP > 2000 pg/ml cannot diagnose LVSD, you still need an echo

Palpitations

- This is an unpleasant awareness of the heart beating and may be fast or slow
- It is a very common symptoms and a normal reaction to exertion or stress
- The majority of people do not have an underlying cardiac condition or require treatment
- It is important to identify those people who are low risk as well as those who are high risk
- 95% of low risk people in Darlington who have a 24 hr tape have a normal investigation
- Do we have this right??

Palpitations : history is key

- Timing , when did they start, how long do they last and how frequent are they?
- Daily or weekly?
- How severe are they? Do you have to stop?
- How do they start and how do they finish?
- Do they feel fast or slow? Regular or irregular?
- Are they associated with other symptoms? Chest pain, flushing, breathlessness, collapse?
- Family history of palpitations, collapse, sudden cardiac death or pacemakers?
- Tablets and medicines including over the counter
- Intake of caffeine, alcohol and illicit drugs

What would you look out for on physical examination?



Which tests are important?

- Thyroid function
- Hb for anaemia
- U and E especially if taking medications which may impact on electrolyte levels
- 12 lead ECG
- Use the history, examination and tests to assess need for referral
- People who have only ever had 1 episode and are low risk are unlikely to benefit from referral

Risk Stratification

Wolf, A., Cowan, C. 2009 British Journal of Cardiology; Vol 16:4

South Tees Hospitals NHS Foundation Trust

Low Risk	Refer to Cardiology	Refer to Cardiology
<ul style="list-style-type: none"> • Extra/Missed Beats • Short fluttering • Thumping beats AND • No family history AND • No structural heart disease 	<ul style="list-style-type: none"> • History suggests recurrent tachyarrhythmia • Palpitations with associated symptoms AND/OR • Abnormal ECG AND/OR • Structural Heart disease 	<ul style="list-style-type: none"> • Palpitations during exercise • Palpitations with syncope/near syncope • High risk structural heart disease • Family history of inherited heart disease/SADS • High degree AV block

32 year old female with palpitations*

- Fit woman
- Presented during an episode of fast palpitation
- Palpitations since age 18
- Becoming more frequent and lasting up to 2h

SVT - AVRT

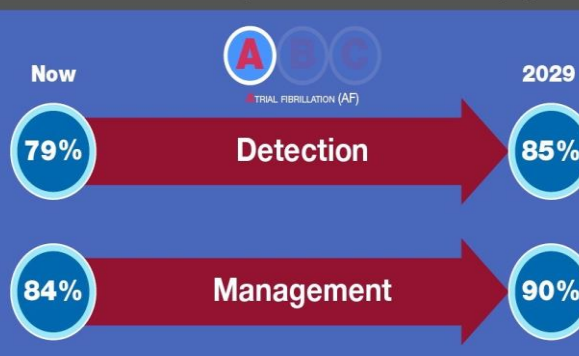
- usually presents in young adults
- more common in females
- structurally normal hearts



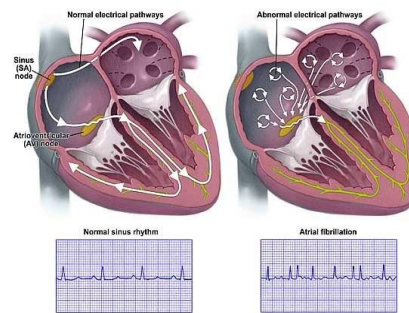
Learning Summary Palpitations

- History and examination are key
- We all get palpitations
- It is important to identify red flag features to stratify need for referral
- Blood tests may identify a cause but the ECG makes the diagnosis

Current detection and management of Atrial fibrillation (AF)



Atrial fibrillation (AF)



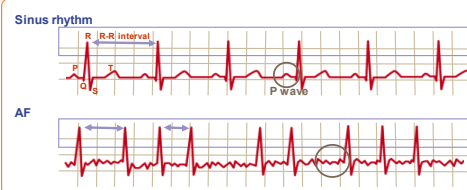
Symptoms of AF

- Typical symptoms of AF include³
 - Palpitations (a sensation of rapid irregular heartbeat)
 - Fatigue
 - Chest pain
 - Dizziness/light headedness
 - Syncope
 - Dyspnoea
- AF may also be asymptomatic
 - Approximately 38% of patients with AF are asymptomatic

1. Fuster V et al. Circulation 2006;114:700-752; 2. Israel CW et al. J Am Coll Cardiol 2004;43:47-52.

Suspected by irregularly irregular pulse examination

Confirmed by rapid 'fibrillatory' waves of varying size, shape and timing on the ECG instead of P waves



Primary Care Cardiovascular Society

Atrial activity?

P waves best seen in V1 and V2 or inferior leads eg II

3x4 Simultaneous ECG Report

Patient Details: Name: [redacted], Sex: Male, Date of Birth: [redacted], Weight: 0 kg

Recording Details: Recorded: 27/03/2017 14:27:19, Device: CL 504241, Location: [redacted]

Measurements: Heart Rate: 69 bpm, P Duration: 148 ms, PR Interval: 166 ms, QRS Duration: 102 ms, QT Interval: 442 ms, QTc Interval: 414 ms, P/QRS/T Axis: 67°, 37°, 107°

Interpretation (Inconclusive): C22 Atrial fibrillation, 263 Normal morphology

Primary Care Cardiovascular Society

Regular Pulse

Atrial flutter with 4:1 AV conduction
Left ventricular hypertrophy with repolarization abnormality
Inferior lead(s) not standardized
Abnormal ECG

Progression of AF

Progression of AF is thought to be driven by structural changes in the atria, including electrical, contractile changes, known as **atrial remodelling**¹

First diagnosed episode of AF

- Paroxysmal (usually <48 hours)
- Persistent (>7 days or requires cardioversion)
- Long-standing persistent (>1 year)
- Permanent (accepted)

There is a national programme across England to tackle the issue of AF related stroke[§]

DETECT
FIND MORE

Awareness campaigns, educate and encourage people to check their pulse rhythm²

PROTECT
TREAT MORE

Ensure that all suitable patients with AF receive appropriate treatment²

PERFECT
TREAT BETTER

Ensure optimal treatment in all patients²

1. The AHSN Network. Available at: <http://www.ahsnetwork.com/external/health-science-networks/notice-programme-priorities/af-related-stroke/>, accessed December 2018; 2. The AF Toolkit. Available at: <https://www.fordonscn.nhs.uk/wp-content/uploads/2017/06/detect-protect-perfect-af-related-stroke-toolkit-062017.pdf>, accessed November 2018

Rationale behind AF screening

- Common condition
- Frequently **asymptomatic** or little symptoms
- Grave consequences if undetected:
 - Thrombo-embolic disease
 - Tachycardia induced cardiomyopathy
- Test is **acceptable** and non invasive
- **Effective treatment** is available

Primary Care Cardiovascular Society

SAFE Trial

- Objectives:
 - Does screening improve detection of AF in primary care?
 - Opportunistic vs Systematic screening
- Design:
 - Multicentre Primary Care RCT across 50 practices in England
- Participants:
 - 14 802 patients ≥ 65 yrs in 25 intervention and 25 control practices
- Results:
 - Detection rate/year of new AF cases:
 - 1.63% (screening practices) vs 1.04% (control practices) (difference 0.59%, 95% CI: 0.20% to 0.98%)
 - Systematic or opportunistic screening detected similar numbers of new cases (1.62% v 1.64%, difference 0.02%, -0.5% to 0.5%)
- Conclusion: Active screening significantly increases detection. The preferred method of screening in primary care is opportunistic pulse taking with follow up ECG

AF screening in chronic disease management / health promotion

- Hypertension
- Heart failure
- CHD
- Stroke
- Diabetes
- CKD
- Weight management
- NHS Health Check

> 90% target population coverage

Darlington experience

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%

Suspected paroxysmal AF detected by 12L ECG

1. Continuous/ambulatory holter monitoring in those with suspected asymptomatic or symptomatic episodes

- 24hr holter (“24 hr tape”)
- Prolonged holter (“7-28 hr tape”)



Suspected paroxysmal AF detected by 12L ECG

2. Loop recorder (2 weeks) conventional approach in those with symptomatic episodes only

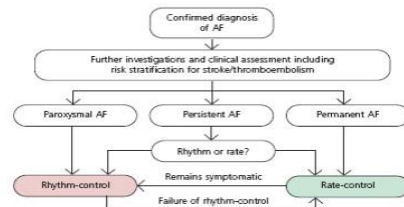
3. Implantable loop recorder [Reveal device] (months) Not usual practice in AF. More typically used for syncope or ?VT assessment

Suspected paroxysmal AF detected by 12L ECG

4. Event recorder (AliveCor FDA approved)



Treatment strategy decision tree



Try rhythm-control first for patients with persistent AF:

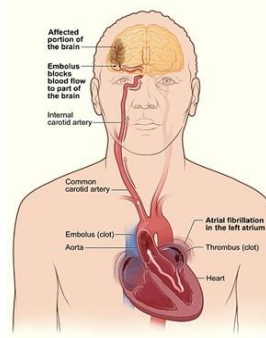
- who are symptomatic
- who are younger
- presenting for the first time with lone AF
- secondary to a treated or corrected precipitant
- with congestive heart failure.

Try rate-control first for patients with persistent AF:

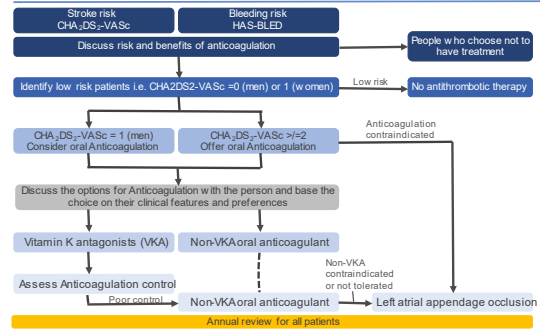
- over 65
- with coronary artery disease
- with contraindications to antiarrhythmic drugs
- unsuitable for cardioversion?

The REAL Importance of AF

- Most important preventable cause of stroke
- Emboli from the LA appendage
- Absolute annual risk with AF <1% to 30% >80

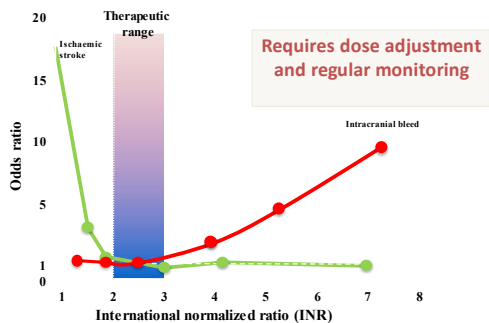


NICE Algorithm for Stroke Prevention in People with Non-Valvular AF 1,2



1. The British Journal of Cardiology. Available <http://dx.doi.org/10.1093/bjct/akw009>. Last accessed January 2017; 2. NICE 2014 AF OD80. Available <http://www.nice.org.uk/guidance/af80>. Last accessed January 2017.

Warfarin and its challenging therapeutic window



ACC/AHA/ESC guidelines: Fuster *et al.* *Circulation* 2006;114:e257-e354

Assessing Anticoagulation Control with VKAs

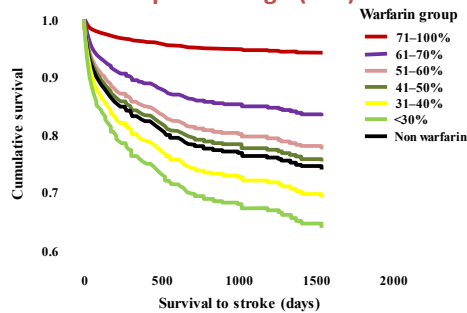
Calculate the person's Time in Therapeutic Range (TTR) at each visit

When calculating TTR:

- ◇ Use a validated method of measurement such as the Rosendaal method for computer-assisted dosing or proportion of tests in range for manual dosing
- ◇ Exclude measurements taken during the first 6 weeks of treatment
- ◇ Calculate TTR over a maintenance period of at least 6 months **[new 2014]**

NICE AF Guideline June 2014

Why time in therapeutic range (TTR) matters



Morgan *et al.* *Thrombosis Research* 2009; 124: 37-41

Assessing Anticoagulation Control with VKAs

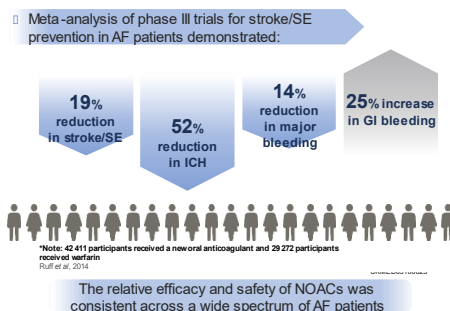
Reassess anticoagulation for a person with poor anticoagulation control shown by any of the following:

- ◇ 2 INRs >5 or 1 INR >8 in past 6 months
- ◇ 2 INRs <1.5 in past 6 months
- ◇ TTR less than 65% **[new 2014]**



SE AF Guideline June 2014

NOACs Showed a Favourable Benefit –Risk Profile Versus Warfarin



Treatment guidelines consistently recommend anticoagulation for stroke prevention...

NICE national institute for health and care excellence

NICE clinical guideline (CG180)*1
Atrial fibrillation management

1.5 Interventions to prevent stroke

- Anticoagulation may be with apixaban, dabigatran etexilate, rivaroxaban or a vitamin K antagonist
- Offer anticoagulation to people with a CH₂DS₂-VASc score of 2 or above, taking bleeding risk into account.

ESC guideline recommendations for stroke prevention in patients with AF²

Oral anticoagulation therapy to prevent thromboembolism is recommended for all male AF patients with a CH₂DS₂-VASc score of 2 or more

Oral anticoagulation therapy to prevent thromboembolism is recommended in all female AF patients with a CH₂DS₂-VASc score of 3 or more

VKA therapy (INR 2.0–3.0 or higher) is recommended for stroke prevention in AF patients with moderate-to-severe mitral stenosis or mechanical heart valves

When oral anticoagulation is initiated in a patient with AF who is eligible for a NOAC (apixaban, dabigatran, edoxaban, or rivaroxaban), a NOAC is recommended in preference to a Vitamin K antagonist

When patients are treated with a VKA, TTR should be kept as high as possible and closely monitored

Class	Level
I	A
I	A
I	B
I	A
I	A

dastous
of P et al



Under what circumstances and why would it be appropriate to reduce the dose of a NOAC?



Cockcroft-Gault Calculator ¹

Please fill in the following data

Cockcroft-Gault Calculator (with SI Units)

Plasma creatinine (PCR)
 mg/dL umol/L

Weight (wt)
 kilograms pounds

Gender
 Male Female

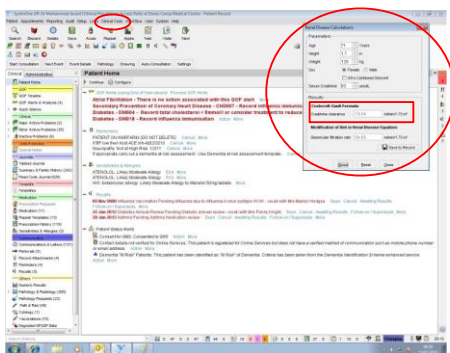
Age

Creatinine Clearance

Cockcroft D, Gault MD. Nephron, 16:31-41, 1976
[MDRD GFR Calculator](#)
[KDOQI Guidelines](#)
[Nephron Information Center](#)
 by Stephen Z. Fadem, M.D.

¹ The Nephron Information Center. Cockcroft-Gault Calculator. Available <http://www.nephron.com/clin/CGB/eng/> Last accessed January 2017.

Cockcroft-Gault Calculator ¹



¹ SystemOne GP.



eGFR vs CrCl

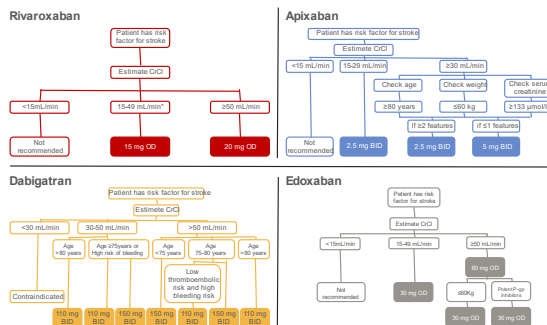
	eGFR (ml/min/1.73m ²)	CrCl _{CG} (ml/min)
Normal	≥90	≥80
Mild	60-89	50-80
Moderate	30-59	30-50
Severe	15-29	<30

eGFR can be inaccurate, particularly in patients with low muscle mass

CrCl, creatinine clearance; eGFR, estimated glomerular filtration rate



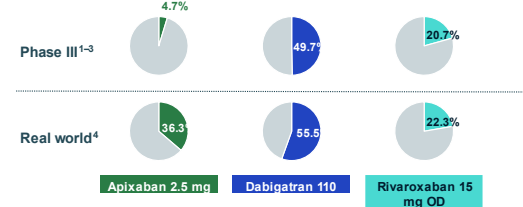
Dose Adjustments in NVAF ¹⁻⁴



¹ Rivaroxaban SmPC; ² Apixaban SmPC; ³ Dabigatran SmPC; ⁴ Edoxaban SmPC.

Is use of reduced dose NOACs in practice consistent with their use in clinical trials?

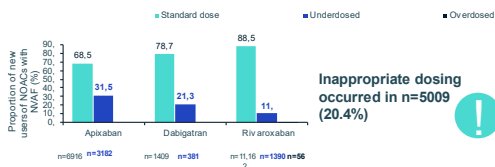
Reduced NOAC doses in the Phase III clinical trials and in real world use in the UK



¹ Granger CB et al. *Eng J Med* 2011;365:989-92. ² Connolly SJ et al. *BMJ* 2009;339:1136. ³ Fox A et al. *Heart* 2011;32:2389-4. ⁴ Fay M, Martins J. *Eur Heart* 2016;37(Suppl):S10. 3.

Inappropriate NOAC dosing occurred in a fifth of new-users qualifying for standard dose

Database analysis of dosing patterns among new users of NOACs with NVAF, qualifying for standard dose in the UK, N=24,496*



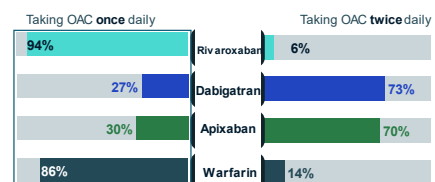
Inappropriate dosing is not recommended. Please refer to relevant NOAC SmPC for appropriate dosing regimen for stroke prevention in patients with NVAF

*Retrospective cohort study using data from The Health Improvement Network (THIN) and the Clinical Practice Research Datalink (CPD). 30,467 patients were assessed for dosing appropriateness with 24,496 qualifying to receive standard dose. Rodriguez G et al. Poster presented at the EuroThrombosis 2018 Congress (ESC Thrombosis Working Group)

Over a quarter of patients on twice daily prescribed NOACs were taking them once daily

Therapy adherence

Self-reported patient survey in Canada reveals dosing frequency errors (N=266) ¹



A study has shown that most AF patients prefer a once daily anticoagulation regimen vs a twice daily regimen ²

¹ Andrade JG et al. *Can J Cardiol* 2016;32:747-53; ² Bakhal ABM et al. *Cardiovascular Disorders* 2013;13:108

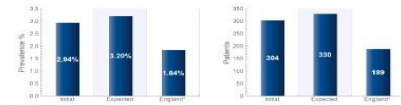
Obero SPAF & Case Finding Overview

- The Oberoi SPAF Audit & Case Finding Service aims to support the NHS to hit three core objectives:
 - Early detection of the unknown AF population, **ensure achievement of the target 85% detection rate**
 - Reach a minimum of **84% anticoagulation rates** in the eligible population.
 - Identification of patients with AF who may be being **prescribed sub-optimal or incorrect doses** of their anticoagulant.
- The service comprises **range of audit resources** developed to enable a Local Health Economy to **systematically identify appropriate patients** and manage the care of patients, efficiently, **with minimum impact on practice resources**
- The **reportable practices** to generate a **audit report** on a monthly basis, to enable them to **evaluate and benchmark their progress** across participating practices within their Local Health Economy.
- "Super-users"** access a **web-based dashboard** to evaluate the progress being made **each practice** to share best practice.

AF Prevalence and the Value of a QOF Point

AF Register

Your practice currently has 388 AF patients on your Register, which represents a prevalence of 2.94%. AF prevalence estimates, produced by Public Health England, suggests expected cases of AF for your practice population is around 330.¹ Your current detected prevalence is 92.1% of the level expected by the National Cardiovascular Intelligence Network (NCIN).²



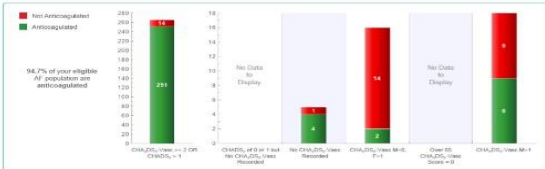
AF QOF Point Value

All AF Patients could be missing from your AF QOF Register. Each newly diagnosed AF patient, identified through case finding, is worth an extra £34.82 of QOF income.³ Pro-active case finding should assist your practice to get closer to the expected prevalence, and generate an additional QOF income of £905.32.⁴

Disease Register Validation and Case Finding

Figure 6: Shows a breakdown of patients that may have a diagnosis of AF based on their current coding. The records will need to be validated and re-coded if appropriate.

Risk Stratification, Anticoagulation and Stroke Risk

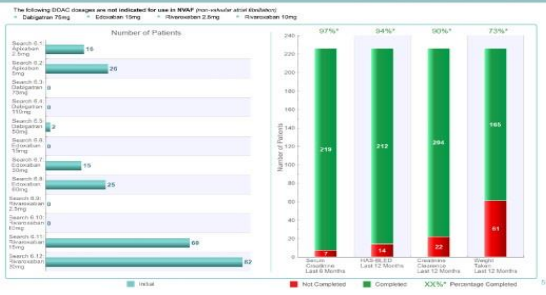


Anticoagulation and Annual Risk of Stroke in High Risk AF Patients³

Category	Number
Number of High Risk Patients Not Anticoagulated	14
Estimated Number of Strokes	2,700
Cost of Estimated Strokes (€) ⁴	€18,782

³ <http://www.nhs.uk/medicines/anticoagulants/anticoagulation-in-atrial-fibrillation/> [Last accessed: December 2016]
⁴ <http://www.nhs.uk/medicines/anticoagulants/anticoagulation-in-atrial-fibrillation/> [Last accessed: December 2016]

DOAC Dosing



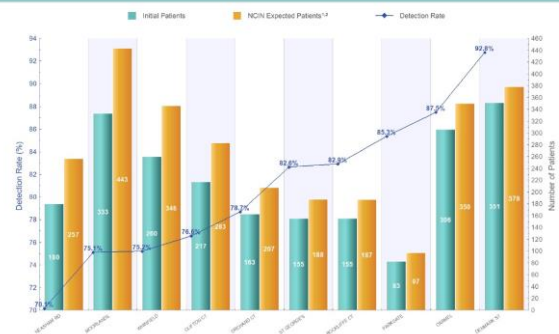
DOAC Dosing

Search ID	Action	Responsibility	By When	No. Pats to Contact	Method of Contact
Search 6.13	DOAC Dosing: Review Doses	Responsibility	By When	No. Pats to Contact	Method of Contact
Search 6.14	DOAC Dosing: Review Doses	Responsibility	By When	No. Pats to Contact	Method of Contact
Search 6.15	DOAC Dosing: Review Doses	Responsibility	By When	No. Pats to Contact	Method of Contact
Search 6.16	DOAC Dosing: Review Doses	Responsibility	By When	No. Pats to Contact	Method of Contact
Search 6.17	DOAC Dosing: Review Doses	Responsibility	By When	No. Pats to Contact	Method of Contact
Search 7	DOAC Dosing: Review Doses	Responsibility	By When	No. Pats to Contact	Method of Contact

Collated Baseline Report

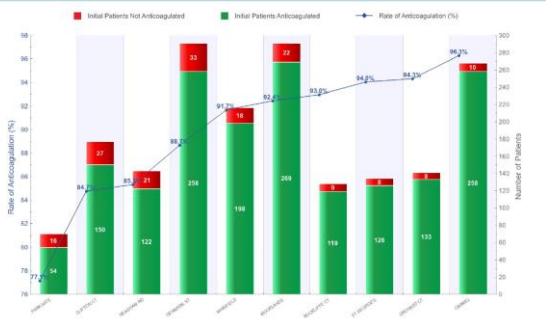
Darlington CCG

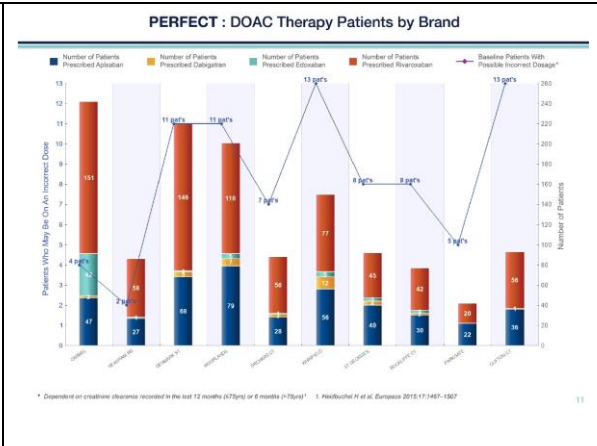
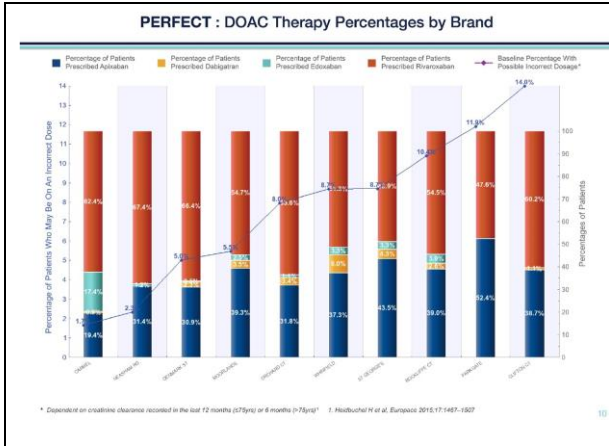
DETECT : Missing AF Population



¹ <http://www.nhs.uk/medicines/anticoagulants/anticoagulation-in-atrial-fibrillation/> [Last accessed: June 2016]
² <http://www.nhs.uk/medicines/anticoagulants/anticoagulation-in-atrial-fibrillation/> [Last accessed: June 2016]

PROTECT : Eligible AF Patients Anticoagulated





NICE Guidelines: Refer to Specialist

Referral for consideration for specialist intervention should be considered in the following patients:

- Lone AF
- Those in whom pharmacological therapy has failed
- Those with ECG evidence of an underlying conducting disorder e.g. WPW
- Atrial flutter

Primary Care Cardiovascular Society

Current detection and management of High Cholesterol and Familial Hypercholesterolaemia (FH)

High Cholesterol

Now: 49% Detection → 2029: 75% Management → 2029: 45%

Familial Hypercholesterolaemia (FH)

Now: 5% Detection → 2024: 25%

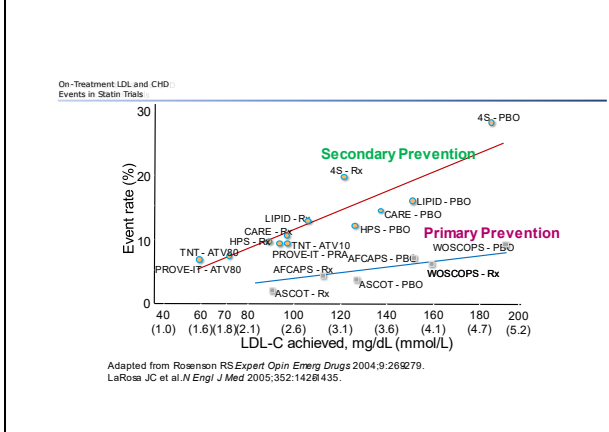
Pathological process

SEQUENCES IN PROGRESSION OF ATHEROSCLEROSIS

SEQUENCE	DESCRIPTION	CHARACTERISTICS
Initial lesion	Fatty streak	Macrophage infiltration
Intermediate lesion	Intermediate lesion	Macrophage infiltration
Advanced lesion	Atheroma	Macrophage infiltration
Complicated lesion	Fibrin/thrombus	Macrophage infiltration

Lipoproteins HDL ... LDL and non HDL

- ▢ **High Density (Highly desirable) Lipoprotein or HDL**
 - is inversely related to CHD risk...the higher the better!
 - average HDL value in the UK is 1.2 for men and 1.4 for women.
 - TC/HDL ratio greater predictive value for CHD than LDL.
- ▢ **Low Density (Less desirable) Lipoprotein**
 - is directly related to CHD risk...the lower the better
- ▢ **Non-HDL cholesterol (Not desirable) ...TC minus HDL**
 - is directly related to CHD risk...the lower the better
 - calculated by subtracting HDL from the total cholesterol
 - has a greater predictive value for CHD than LDL
 - is a surrogate for Apolipoprotein B



Lipid measurement and referral

- ▢ Initially measure total cholesterol (TC), HDL and non-HDL
- ▢ Before starting lipid modification therapy measure extended lipid profile to include TC, HDL, Non-HDL and Triglycerides (TG) (...and LDL?)
- ▢ Refer to lipid specialist if the clinical findings, lipid profile (Simon Broome Criteria) and family history suggest a likely inherited cause

Lipid profiles the BIGGER picture

- Patient A - Tot Chol 5.5 : HDL 2.4, LDL 2.6, Non -HDL 3.1 , TG 1.9, TC/HDL 2.3
- Patient B - Tot Chol 5.5 : HDL 0.7, LDL 4.0, Non -HDL 3.8, TG 4.9, TC/HDL 7.8
- 95% confidence limits on a single cholesterol measurement are around $\pm 14\%$ of the true value

Primary prevention
Identifying people for a full formal risk assessment

Use a systematic strategy to identify those likely to be at high risk of CVD

- estimate CVD risk and prioritise those with a 10 year CVD risk of 10% or more for a full formal risk assessment
- Review risk in over 40's on an ongoing basis

Do not use opportunistic assessment as the main strategy to identify CVD in unselected people

Primary prevention – formal risk assessment

Use QRISK 2 risk calculator

- Up to 84 years old
- In Type 2 Diabetes
- Consider other factors not included in formal risk score

Do not risk assess

- Existing CVD or familial lipid disorder
- Type 1 diabetes
- CKD(eGFR less than 60 and/or albuminuria)
- 85years or older...assume they have CVD

Discuss absolute risk of CVD including benefits and harms of treatment over a 10 year period.

Primary prevention

Offer atorvastatin 20mg to

- Up to age 84 years with 10% or greater risk of CVD over 10 years
- CKD
- Type 1 Diabetes
 - over 40 years old
 - for 10 years or not
 - concomitant nephropathy or CVD risk factors

Consider atorvastatin 20mg

- all adults with Type 1 Diabetes
- over 85 years old

GDG on....."Why atorvastatin 20mg"

- QALY £4125
- "most clinically and cost effective option for Primary Prevention"

Lipid modification therapy

- Use evidence based therapies that reduce CVD morbidity and mortality
- Statins lower LDL
- If using statins then choose one of high intensity and low acquisition cost

What is Familial Hypercholesterolaemia (FH) and why identify FH patients?

- FH is an inherited condition which leads to exceptionally high cholesterol levels often 2-4 x those of the general population
- It is estimated that one in 250 people may have FH in the UK, meaning at least 260,000 people in the UK may be living with this condition
- Without treatment, affected men will frequently develop symptoms of coronary heart disease before 40 years, and half will be symptomatic by the age of 50 years. In women a similar proportion are symptomatic by 60 years.
- The NICE FH Guideline (CG71) recommends genetic testing of relatives of individuals known to have FH which is the most effective strategy for early identification, leading to effective treatment through diet, lifestyle interventions and cholesterol lowering drugs.
- With early intervention and careful follow up to ensure concordance with treatment, the excess coronary heart disease risk and premature mortality associated with FH can be effectively reduced.

www.ahsn-nenc.org.uk
@AHSN_NENC

Aim of the FH project in the North East and North Cumbria

- The overall aim of the Academic Health Science Network for the North East and North Cumbria, in collaboration with Clinical Commissioning Groups, GP Practices, NENC, PRIMIS, AMGEN and SANDO is to implement targeted FH risk assessment and medication review at a Primary Care level.
- Reduce the excess coronary heart disease risk and premature mortality associated with FH by developing a pathway covering the following key areas:
 - Identify patients at high risk
 - Evaluate medications
 - Education and treatment
- Increase the utilization of the genetic screening programme across the AHSN footprint through proactive patient identification. Currently identified 387 index cases and 431 relatives through cascade testing. Total diagnosed in North East and North Cumbria = 818
- Improve the patient experience by providing more specialist care within primary care and ensure better utilisation and more appropriate referrals to the specialist service within secondary care

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Results of the PILOT so far.....

Registered population	No of pts identified by the tool as very high risk of FH	Red	Amber (DLS 3&4)	Green (DLS 5+)
45123	303	122	155	26

Red = Excluded due to secondary causes
Amber = DLS 3&4, further data required
Green = DLS 5+ Will be invited to clinic

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Results of the PILOT so far.....

General Practice	Registered population	No of pts identified by the tool as diagnosed with FH	No of pts with no genetic mutation but poss genetic heterogeneity/ no mutations identified	No of pts with confirmed molecular diagnosis	Undergoing molecular testing	Red	Amber (DLS 3&4)	Green (DLS 5+)
A83627	5686	9	1	0	1	3	4	0
A86017	10289	21	5	5	0	6	1	3
A83031	10310	50	0	0	0	20	24	6
A81044	18838	23	0	0	0	15	7	1

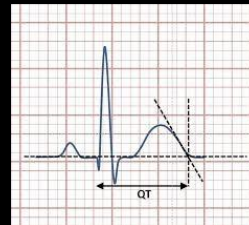
Next steps

- Roll out to DDES CCG and Darlington PCN (All 11 practices now involved) – identifying and testing where necessary of green patients
- Continue in pilot practice to identify most efficient ways of screening the amber patients.
- Case study to capture learns and successes so far
- Exploring options to capture data – i.e. flagging in GP systems
- Education around capturing family history

Summary

- Identifies high risk patients and potentially prevents CVS events
- Puts you ahead of the curve in relation to the long term plan
- Improves patient experience by providing a specialist service within primary care.
- Free and simple to implement

What Is The QT Interval?



- Why does it matter?
- What can alter the QT?
 - Heart Rate
 - Drugs
 - Metabolic disorders
- What is QT_c?
 - How do you calculate QT_c

QT interval: Time from the beginning of the QRS complex, representing ventricular depolarisation, to the end of the T wave, resulting from ventricular repolarisation.

Calculating QT_c

FORMULA

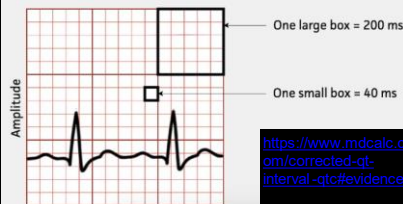
RR interval = 60 / HR

Bazett Formula: $QT_c = QT \text{ interval} / \sqrt{RR \text{ interval}}$

Fridericia Formula: $QT_c = QT \text{ interval} / (RR \text{ interval})^{1/3}$

Framingham Formula: $QT_c = QT \text{ interval} + 154 \times (1 - RR \text{ interval})$

Hodges Formula: $QT_c = QT \text{ interval} + 1.75 \times [(60 / RR \text{ interval}) - 60]$



Ideally calculate the mean of 3-5 beats

Clinical Features



- Cardiac event – syncope, seizure, cardiac arrest
- LQT1: Swimming and exercise in general are common triggers
 - LQT1 and 2 associated with early symptoms (e.g. syncope) but low risk of death per event
- LQT2: Auditory triggers are common
- LQT3: Events usually happen during sleep or at rest
 - LQT3 associated with low symptom frequency but high likelihood of SCD with each event; often nocturnal

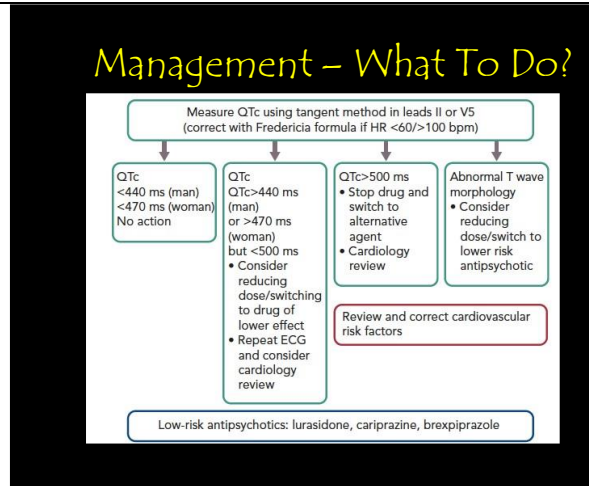


Drugs And QT Interval

Effect of antipsychotics on QTc			
No effect <small>(at therapeutic doses)</small>	Low	Moderate	High
Aripiprazole <small>(note: yellow card repo of torsade de pointes and prolongation)</small> Zuclopenthixol Lurasidone	Clozapine Flupentixol Olanzapine Prochlorperazine Risperidone Sulpiride Paliperidone Fluphenazine Asenapine	Chlorpromazine Quetiapine Amisulpride	High Dose Antipsychotic Therapy (HDAT) Haloperidol Pimozide

<https://www.sads.org.uk/drugs-to-avoid/>

NHS



Medical ethics and the Family Physician

Prof David Misselbrook

RCSI Bahrain
March 2021
dmisselbrook@rcsi.com



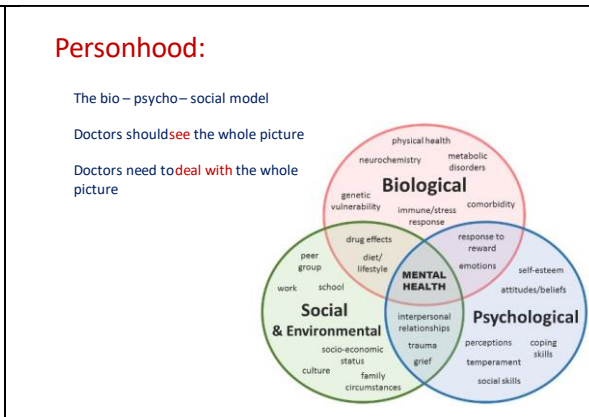
AIM

The aim of this session is to enable colleagues to use the ethical principles of:

- **Beneficence**
- **Nonmaleficence**
- **Justice**
- **Respect for Autonomy**

in challenging situations in professional practice.

RCSI



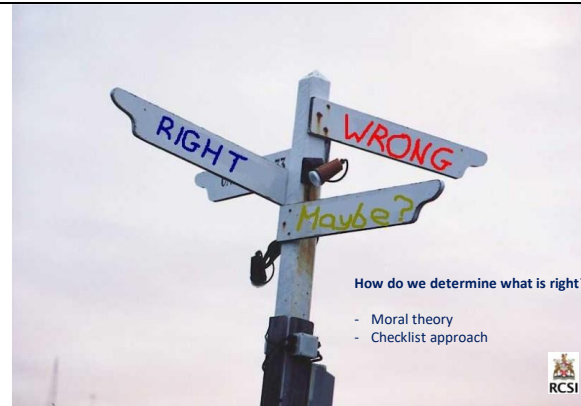
Putting principles into practice....

"If it is said that some parts of medicine are theoretical and other parts are practical, this does not mean that one part teaches medicine and the other puts it into practice—as many researchers in this subject believe.

One should be aware that the intention is something else: it is that both parts of medicine are science, but one part is the science dealing with the principles of medicine, and the other with how to put those principles into practice."

Ibn Sina: *Canon of Medicine* (c. 1012AD / 390 Hijri)

Medicine needs both **facts** and **values**.



How do we determine what is right?

- Moral theory
- Checklist approach



Ethical checklists

The west: Four Principle approach (**Principlism**):

- Respect autonomy.
- Do good.
- Do no harm.
- Act justly.

- (Consider scope.)

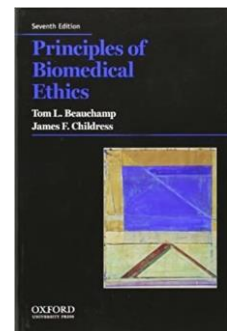
Islam: traditional questions:¹

- What is the intention (goal) of the action?
- Are there any certainties about the outcome of the action?
- May harm arise from the action?
- Will the action relieve hardship?
- Is the action according to, or against, established custom? (N.B. – this is not a veto question but leads to caution and analytic debate)

1. Kamali M. *Principles of Islamic Jurisprudence*. Cambridge: Islamic Texts Society, 2005.

Principlism²

A checklist of four principles:



2. Beauchamp T and Childress J. *Principles of biomedical ethics*. New York: Oxford University Press, 7th Edn 2013.

Beneficence - doing good

Hippocratic oath:

"I will prescribe regimens for the good of my patients according to my ability and my judgment....."



What is it to do good?



Putting principles into practice....

"...and whoever saves a life, it will be as if they saved all of humanity"

Holy Quran, Surah 5 AlMa'idah, verse 32



Doing good

Relates to the proper goals of action for doctors: human welfare, including:

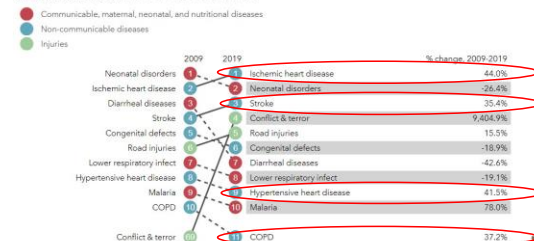
- Preservation of **life**
- Preservation of the **mind and intellect**
- Preservation of **property** (including **bodily health**)
- Preservation of **children and family line**



Doing good

Therefore – **chronic disease management**

What causes the most deaths?



Institute for Health Metrics and Evaluation, University of Washington

Somatisation

Humans have a unified nature – any one part will affect the whole

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Somatisation:

MUPS – Medically Unexplained Symptoms

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Somatisation:

MUPS – Medically Unexplained Symptoms – UK picture

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Somatisation:

The four functions of the Family Physician

- Biomedical therapist
- Leader for healthy communities
- Sickness guide – advising patients how to maximise their strength
- Witness – to listen and understand our patient's health and life struggles

We need to understand the whole patient

3. Misselbrook D. Thinking about Patients. Petroc, 2001

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Non maleficence – not doing harm

Hippocratic oath:

"I will prescribe regimens for the good of my patients according to my ability and my judgment **and never do harm to anyone....**

What is it to avoid harm?

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"No harm, no harassment"

"No harm should be inflicted or reciprocated"

"Harm must be rejected"

Shahid al-Awwal

RCSI

"No harm, no harassment"

Assessing risks of treatment

Assessing possible side effects

Assessing treatment burden

RCSI

"... and never do harm to anyone...."

Patient safety:

THE SWISS CHEESE MODEL
FOR UNDERSTANDING ACCIDENTS AND IMPROVING SAFETY

ANY SAFEGUARD HAS INHERENT FLAWS OR HOLES

PROBLEMS OCCUR WHEN MULTIPLE "HOLES" LINE UP

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Patient expectations
"Doctor – my child has a cough."

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Patient expectations
"Doctor – my child has a cough. He always needs antibiotics"

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Patient expectations
"Doctor – I my child has a cough. He always needs antibiotics
Our job is to build a bridge.... within a long term relationship of trust"

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Respect for autonomy:

J.S.Mill 1806 – 73

"Over himself, over his own body and mind, the individual is sovereign"⁴

4. Mill JS. *On Liberty*. 1859. Penguin Classics

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Autonomy:

Every adult has competence to take *Mubah* (permissible) decisions relating to their own life, unless there are genuine reasons otherwise.

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Consent

Central to good medical practice

CONSENT:
A patient's voluntary agreement to treatment, examination or other aspects of healthcare.

A moral requirement A legal requirement

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RECOMMENDATIONS FOR ASSESSING CAPACITY⁵

S. Hope T, Savulescu J, Hendrick J, (2008) *Medical Ethics and Law: The Core Curriculum* 76-81.

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CONFIDENTIALITY

- Confidentiality is *prima facie* ethical obligation in 21st century healthcare: it must be fulfilled UNLESS it conflicts with an equal or stronger obligation.
- "It is ethical to disclose confidential information when the patient consents to it or when there is a real and imminent threat of harm to the patient or to others and this threat can only be removed by a breach of confidentiality."


WMA International Code of Medical Ethics

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DISCLOSURE WITHOUT PATIENT'S CONSENT

There are four circumstances where information may be disclosed in the absence of permission from the patient:

1. When ordered by a Judge in a Court of Law, or by an established legal Tribunal;
2. When absolutely necessary to protect the interests of the patient;
3. When absolutely necessary to protect the welfare of society;
4. When absolutely necessary to safeguard the welfare of another individual or patient.




Justice

"The golden rule":

"No man is a true believer unless he desires for his brother that which he desires for himself"

The Prophet, PBUH:
Hadith, *Muslim*, chapter *iman*, 71-2




Justice

Rights. Each nation or society will give individuals specific rights. An insurance based health system will specify rights to healthcare, other systems may be less well defined.

Deserts – what people deserve. People who attend health promotion clinics will be more likely to receive medical care than those who don't. In some systems people who smoke or are severely obese may be denied certain treatments. A patient who is on a waiting list deserves to be treated in their turn.


Needs. Will we use most resources on those with the greatest medical need? Will we seek out at risk groups to ensure they get priority in medical care?




Justice in resource allocation

We have to balance two **conflicting** principles:


- Every doctor has a duty to do their best for each of their patients.
- Medical resources should be allocated to maximise the health gains of the whole community.






Justice in resource allocation

We have to balance two **conflicting** principles:



None of us can do this on our own!

- Every doctor has a duty to do their best for each of their patients.
- Medical resources should be allocated to maximise the health gains of the whole community.




Justice in resource allocation

Principles:

1. Identify the need
2. Identify existing / potential healthcare capacity
3. Assess what is necessary or practical to deliver any given service
4. Evaluate the likely impact of possible services that could be provided

Then **consult**, with colleagues and public

Then **prioritise**, with transparency of accountability




Justice in resource allocation


Two broad approaches⁶

1. A **utility-maximising rationale** such as **Quality Adjusted Life Years (QALYs)**, which can provide absolute but possibly unfair answers to difficult choices.
Problem – may not be just
1. **Fair processes**, such as 'Accountability for reasonableness', which propose processes (rather than calculations) by which policymakers can consult the community and determine resource allocation.
Problem – may not maximise benefit from limited resource

6. Cox D and Papanikitas A, Beyond rationing: the ethics of commissioning in and by primary healthcare. Chapter 33 in *Handbook of Primary Care Ethics*, Eds Papanikitas A and Spicer J. CRC Press, 2018



Justice and money in medicine



The principle:


We are doctors, not shopkeepers.

A shopkeeper should be honourable, but his job is to produce maximum **profit for his family** honestly and within the law.

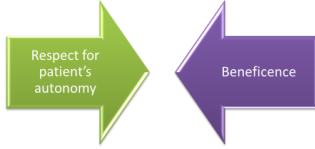
A doctor **must** be honourable, and his job is to produce maximum **health benefit for his patients**

We should "make the care of our patients our first concern"

7. GMC *Duties of a Doctor*. 2021



Principles may clash



Principles may clash



When principles clash then our actions need to be balanced by practical wisdom



To practice wise medicine ethically we need the right character traits...⁸

Edmund Pellegrino 1920-2013

- Trustworthy and keeping our promises
- Wanting to do good
- Being unselfish
- Compassion and caring
- Intellectual honesty
- Justice
- Practical wisdom



8. Towards a Virtue-Based Normative Ethics for the Health Professional Kennedy Institute of Ethics Journal, 5 (1995): 253-277.

Two controlling virtues in 21st Century medicine?⁹

- **1. Phronesis**, or practical wisdom. As doctors we possess many guidelines, which may well help in straightforward situations. But the real world is too complex to navigate with guidelines alone. Phronesis outperforms algorithms and rulebooks.
- **Phronesis** seeks the wise course in the patient's best interest. Evidence and guidelines often relate to linear rules; "If A is X then do Z". The real world presents us with complex situations; "A is approximately X but we do not know if B is currently Y or W and it seems likely that D and E will influence this situation in ways that may be difficult to predict".
- Remember autonomy - different patients have different priorities.

9. Misselbrook D. The virtuous professional and the marketplace chapter 9 in Eds Feiler T., Horden J and Papanikitas A. Marketisation, ethics and healthcare London: Routledge, 2018

Two controlling virtues in 21st Century medicine?⁹

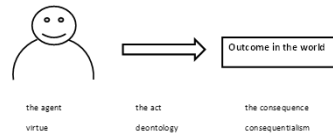
2. Compassion should be the second controlling virtue for the doctor. Compassion leads to care.

If healthcare is not a caring profession it is nothing.

9. Misselbrook D. The virtuous professional and the marketplace chapter 9 in Eds Feiler T., Horden J and Papanikitas A. Marketisation, ethics and healthcare London: Routledge, 2018

The moral analysis of action¹⁰

We can see the three main secular moral systems as giving guidance at the three different levels of an act:



- Virtue guides our choice in the end or motive of an act.
- Deontology guides our choice regarding the nature of an act itself.
- Consequentialism guides our choice when we take into account the specific circumstances of an individual instance of an act.

10. Misselbrook D. Virtue ethics: an old answer to a new dilemma? Part 2. The case for inclusive virtue ethics. Journal of the Royal Society of Medicine 115, Vol. 10(9) 882z

