IPCRG 2020: Weekly Series of Hot Topic
Clinical Practice Webinars & Abstract Presentations

A very warm IPCRG welcome to the 6th Hot Topic Webinar

Breathing and feeling well through universal access to right care

Today's Agenda

1000hrs BST	**Welcome and Introductions** Amanda Barnard, Webinar Chair
1005hrs	**COVID-19 & the Management of COPD in Primary Care** ***Our speakers:*** *Hilary Pinnock &Vince Mak, UK*
1035hrs	**Discussion with your questions**
1050hrs	**Video, Chair Dancing & Comfort Break**
1100hrs	**Oral Abstract Presentations**
1205hrs	**Closing Remarks** Amanda Barnard

Oral Abstract Presentations

1. **Practices and perceptions of primary care physicians in rural India for diagnosis and management of asthma and COPD: a mixed methods study** *Dhiraj Agarwal, India*
2. **A comparison of the provision of Specialist Palliative Care to a cohort of patients with GOLD Stage D COPD, 2014 and 2016** *Ciara Hanrahan, Ireland*
3. **Formulating and testing a strategy for introducing Pulmonary Rehabilitation for COPD management in a rural Indian setting** *Harshpreet Kaur, India*
4. **A randomized controlled feasibility trial (RCT) of a pulmonary rehabilitation (PR) programme for symptomatic COPD Patients in Georgia: A Breathe Well study** *Mariam Maglakelidze, Georgia*
5. **Predicting hospitalization of Swedish patients due to COPD exacerbation with machine learning** *Karin Lisspers, Sweden*
6. **Spirometry network at the primary health care level in Kyrgyzstan: first experience, lessons and prospects** *Talant Sooronbaev, Kyrgyzstan*

Presentation 1

Hilary Pinnock, UK

COVID-19 & the Management of COPD in Primary Care

Professor Hilary Pinnock
Professor of Primary Care Respiratory Medicine, The University of Edinburgh
General Practitioner, Whitstable Medical Practice

Breathing and feeling well through universal access to right care

COVID-19 and COPD in Primary Care

Risk, COPD and multimorbidity

Shielding, good (remote) long-term condition care

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No more likely to catch coronavirus…

	Prevalence	% with COPD
June	Pranata (N=21; n=4603)	**2.4%**
	Alkhatham (N=29; n=6261)	**2.3%**
May	Alqahtani (N=15; n=2473)	**2.3%**
April	Zhao (N=11; n=2002)	**1.7%**
	Wang (N=6; n=1558)	**1.4%**
March	Lippi (N=7; n=1592)	
	Emami (N=5; n=1480)	**1.0%**
2020		

It is striking that COPD appears to be under-represented in the comorbidities reported for patients with COVID-19, compared with the global burden of disease estimates of the prevalence of these conditions in the general population.

A similar pattern was seen with SARS

Halpin: Editorial Lancet Respiratory May 2020

No more likely to catch coronavirus…

Risk of adverse outcomes

	% with COPD	Risk of severe disease	Risk of death
		OR **5.0** (3.1 to 8.2)	OR **4.4** (1.5 to 13.1)
		RR **1.9** (1.4 to 2.4)	RR **1.1** (0.6 to 1.8)
		OR **4.4** (2.3 to 18.2)	OR **1.9** (0.6 to 7.4)
		OR **6.0** (2.5 to 14.3)	
Lippi (N=7; n=1592)		OR **5.7** (2.5 to 13.00)	

2020

…more likely to have an adverse outcome

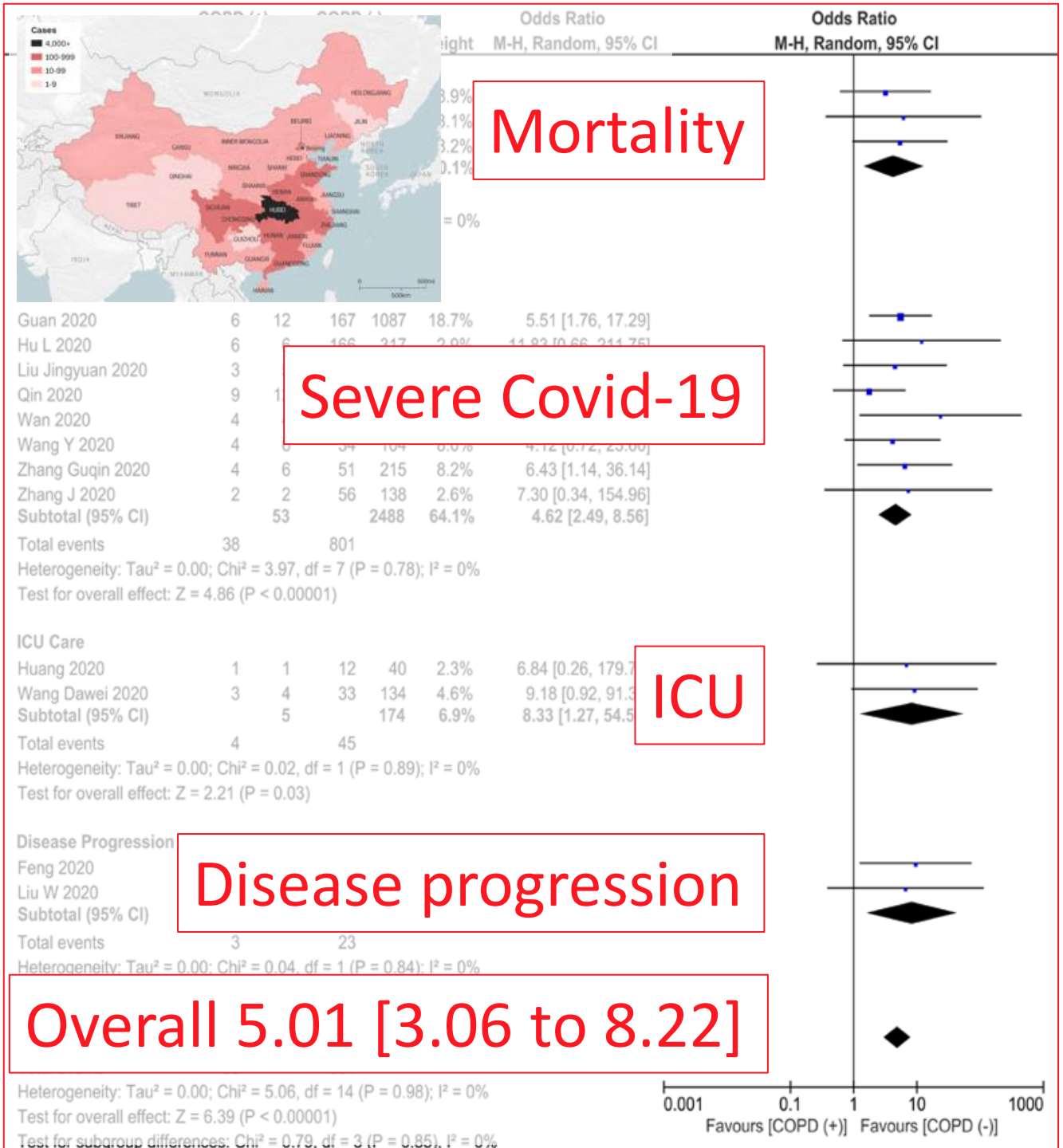
Mortality

Severe Covid-19

ICU

Disease progression

Overall 5.01 [3.06 to 8.22]



No more likely to catch coronavirus…

Risk of severe disease

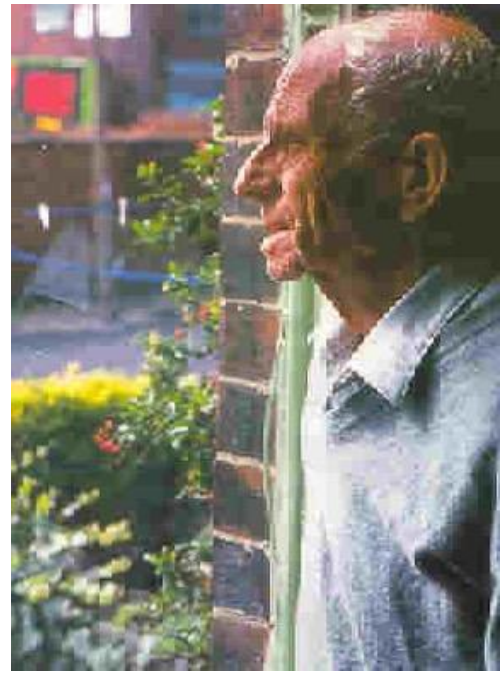
OR **5.0** (3.1 to 8.2)

Risk of death

OR **4.4** (1.5 to 13.1)

Pranata et al. *Int J Tuberc Lung Dis* 2020

Meta-regression:
The association between COPD and poor outcomes did not vary significantly with age, sex, hypertension, cardiovascular diseases and diabetes.



…more likely to have an adverse outcome

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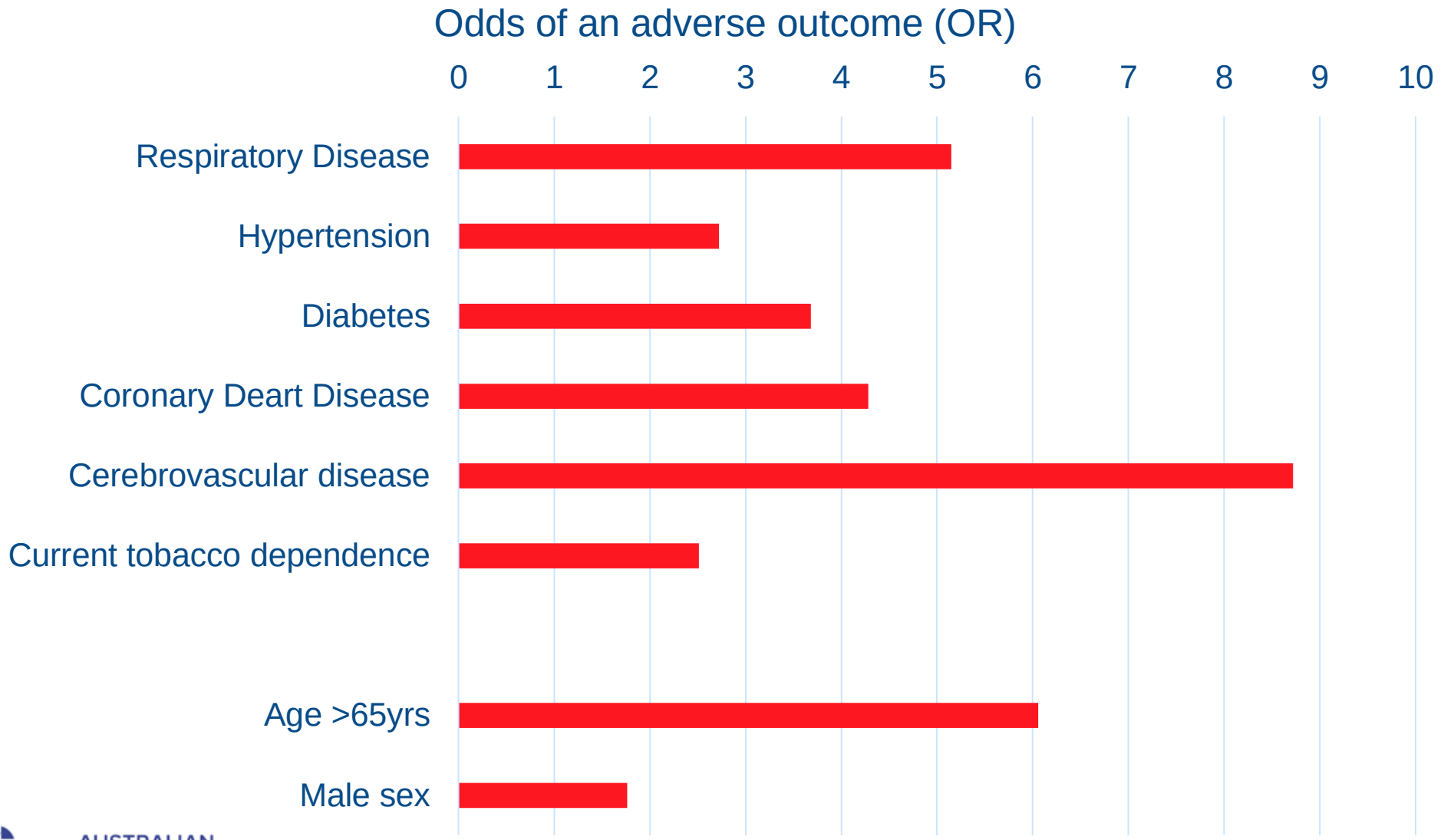
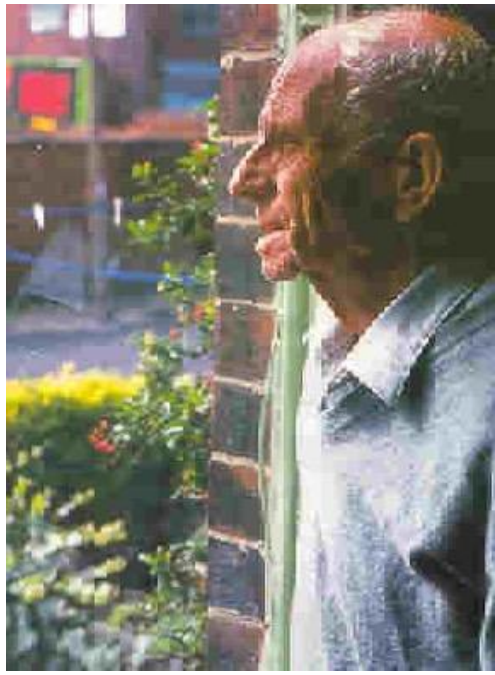
No more likely to catch coronavirus…



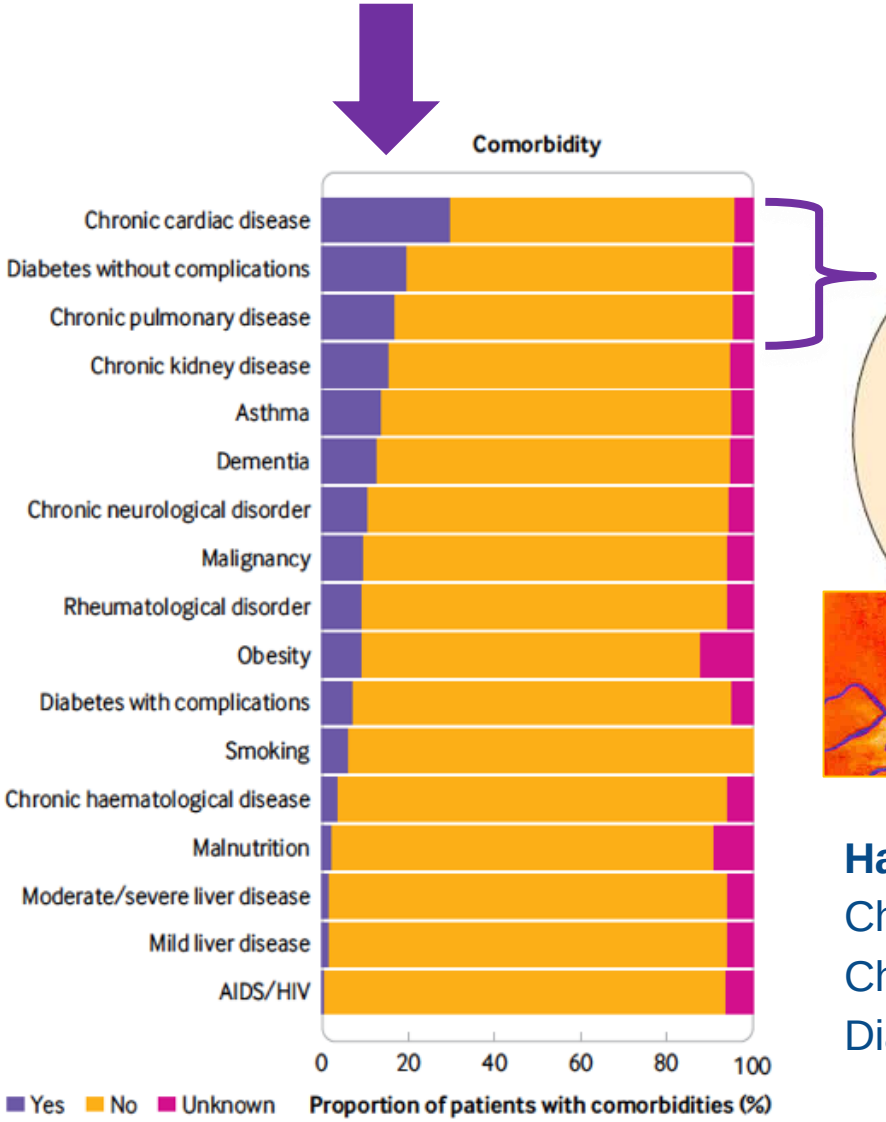


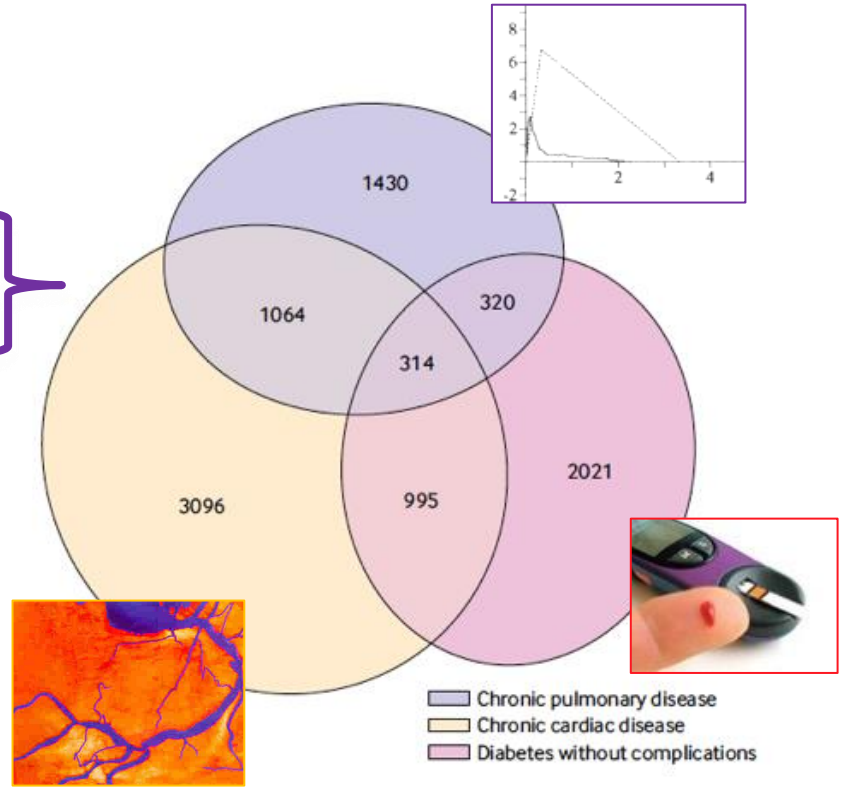
…more likely to have an adverse outcome

AMA AUSTRALIAN MEDICAL ASSOCIATION

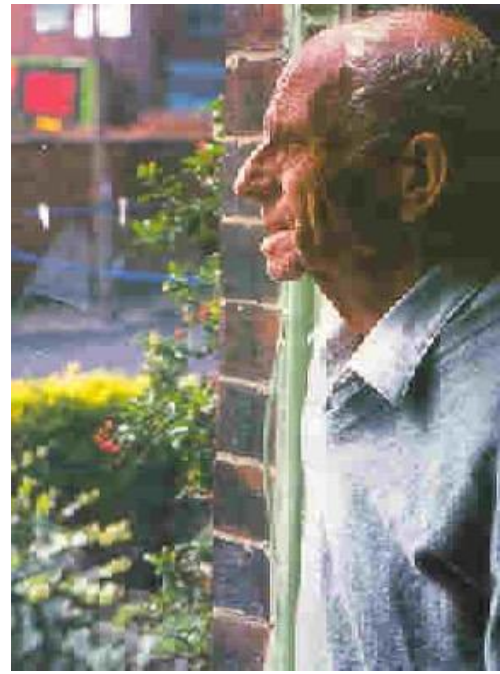
May 2020

Multimorbidity in 20,133 people admitted in the UK with Covid-19





Predictors of poor outcomes:
Age, heart failure, male sex, chronic kidney disease, and obesity (not asthma/COPD) Petrilli *BMJ*



Hazard ratios for death

Chronic pulmonary disease	1.17 (1.09 to 1.27)
Chronic cardiac disease	1.16 (1.08 to 1.24)
Diabetes	1.06 (0.99 to 1.14)

…more likely to have an adverse outcome

Docherty et al. BMJ 2020;369:m1985

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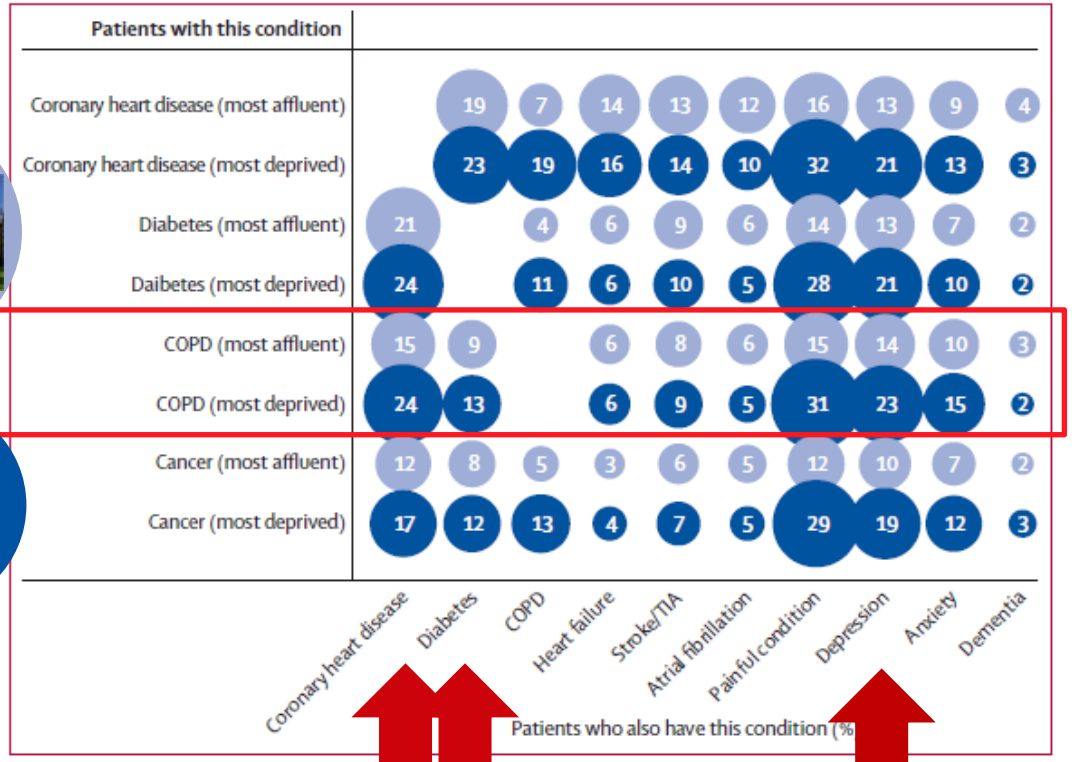
COPD



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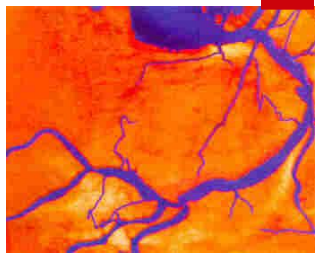
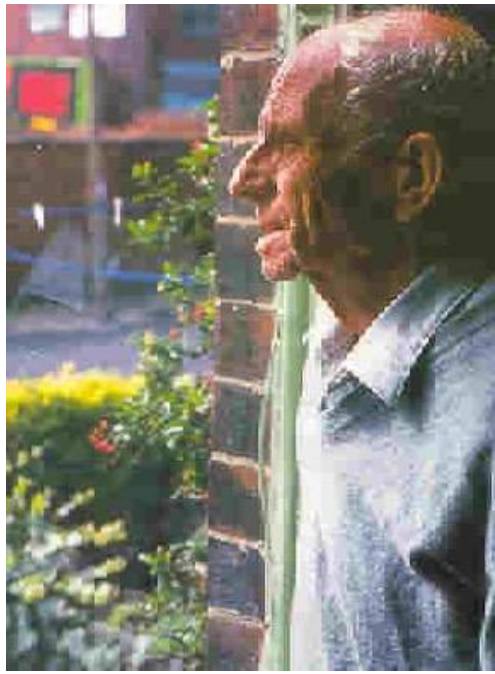
1 in 5 have CHD

1 in 8 have diabetes

1 in 5 have depression





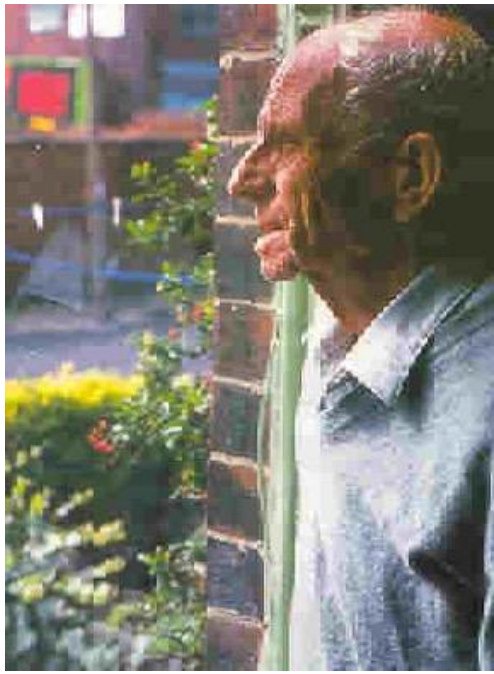
Barnet et al 2012 Lancet 2012; 380: 37–43

International Primary Care IPCRG work locally collaborate globally Respiratory Group

????

COPD

…but now while social distancing…



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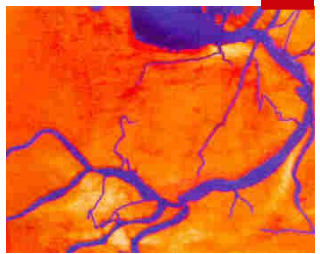

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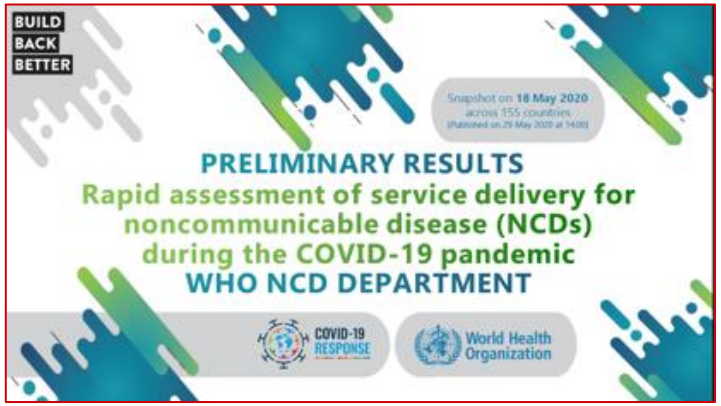
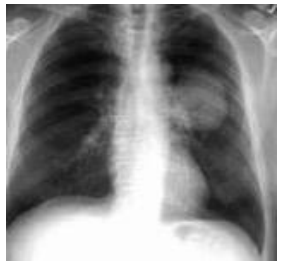
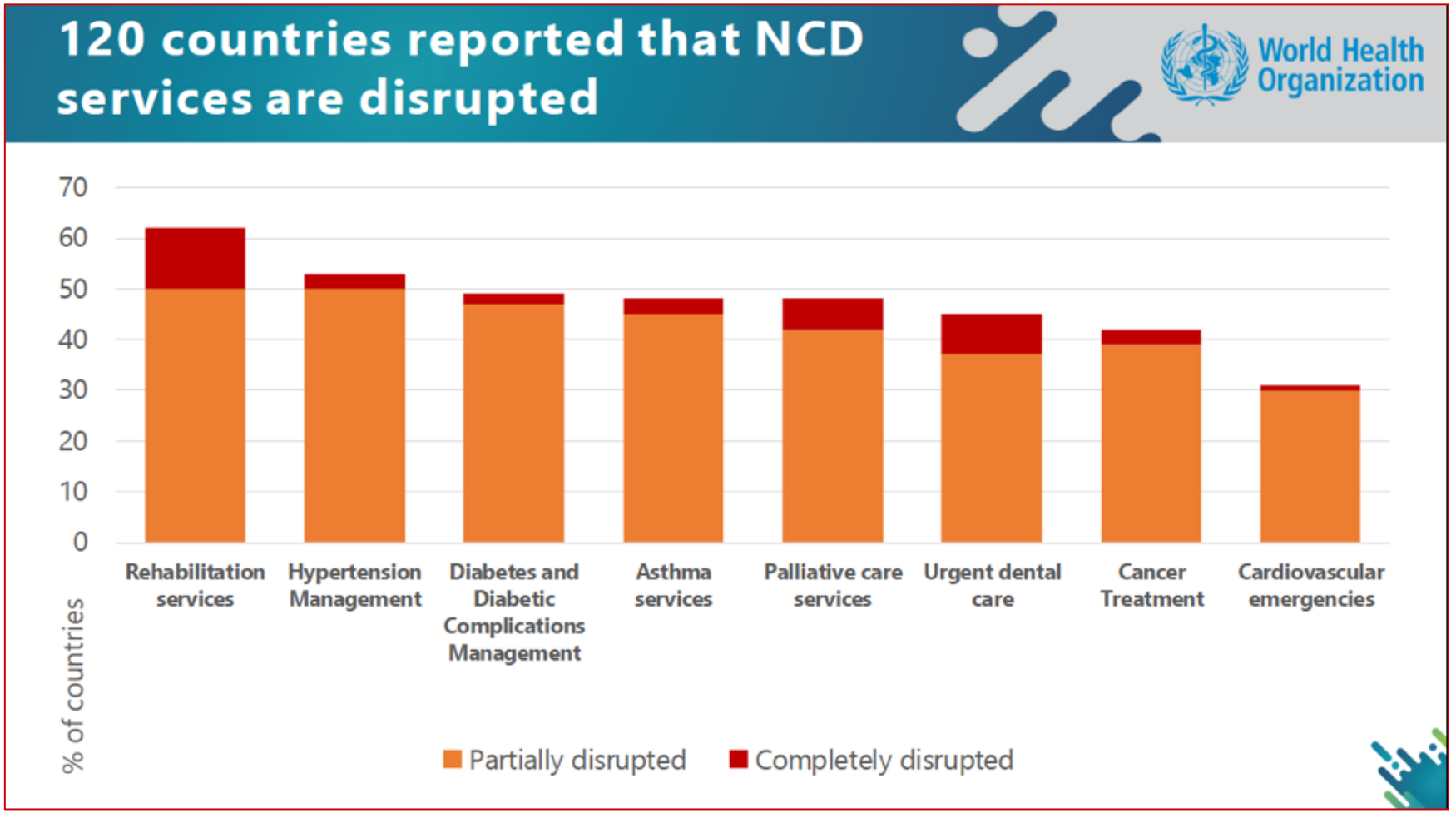




Reduced referrals



WHO survey of 155 (out of 194) national health services
1st May – 25th May

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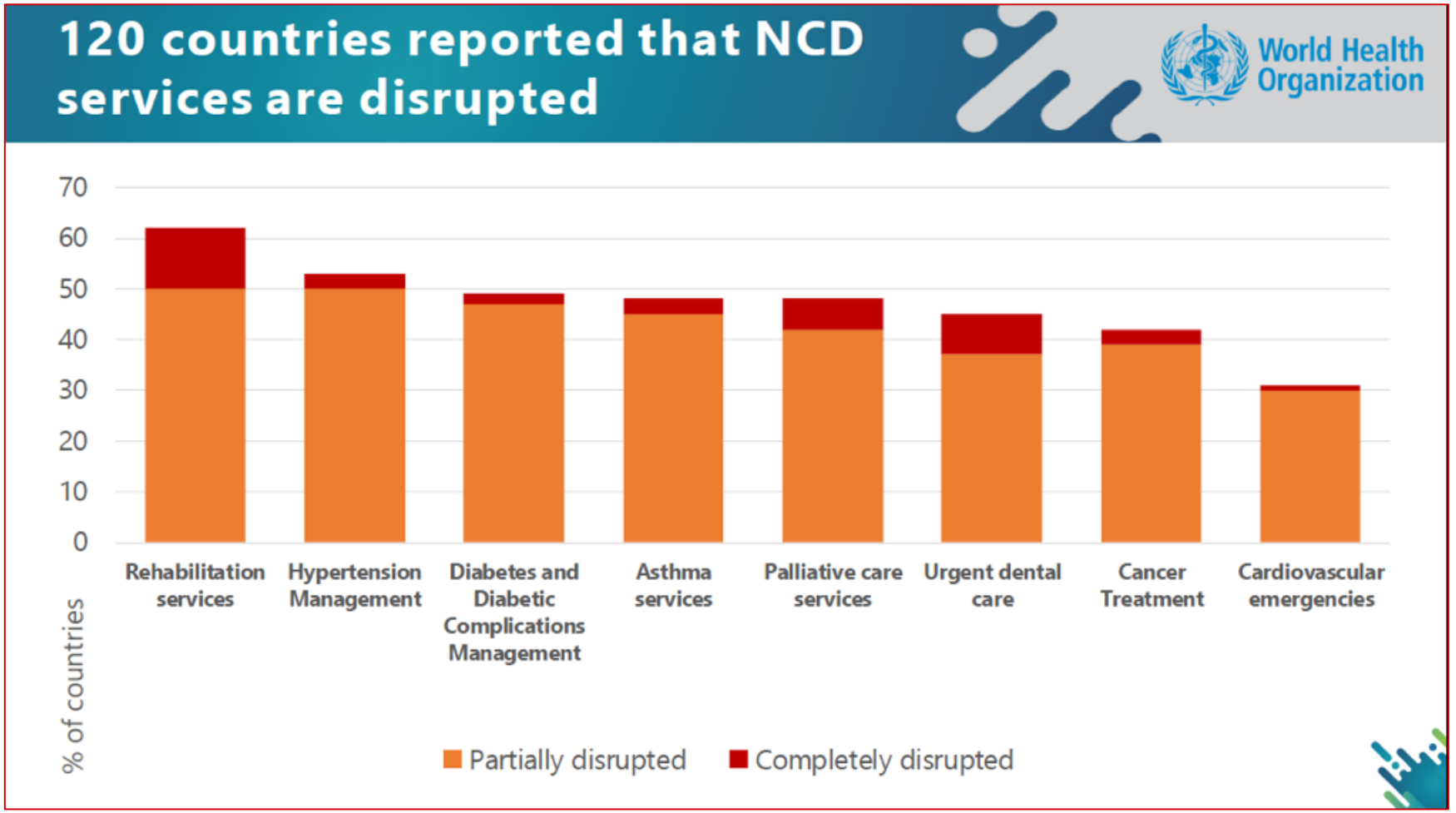
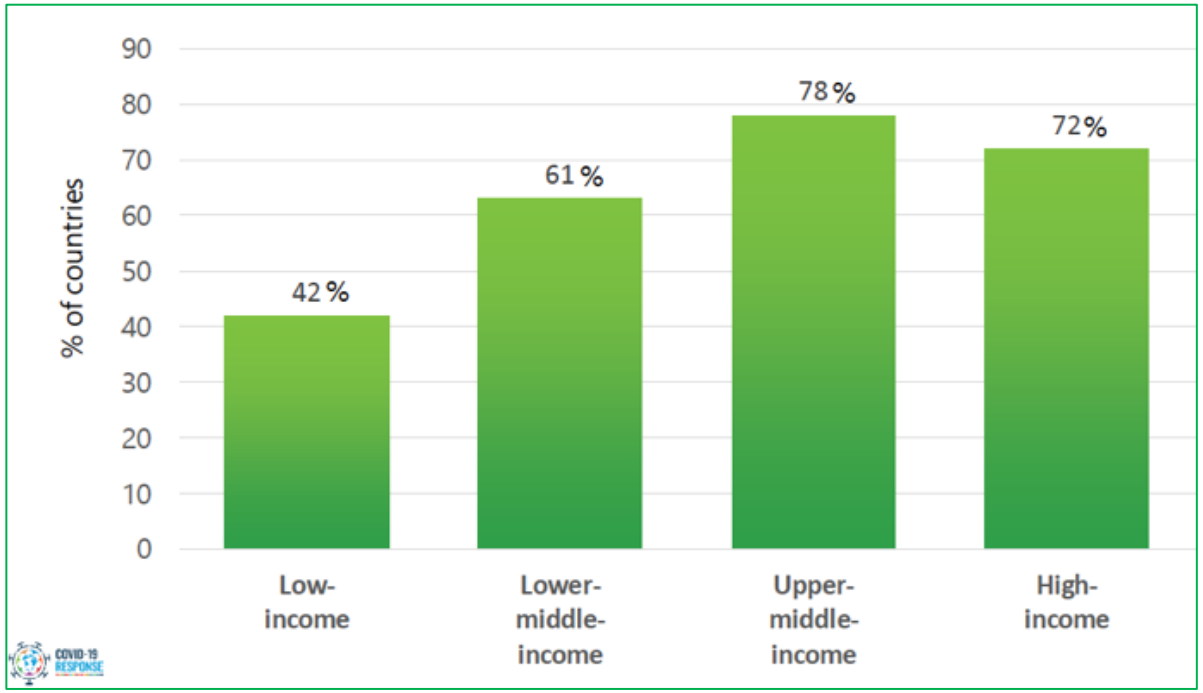
"Rehabilitation continues to be (wrongly) perceived as a non-essential service - when for many patients it is essential"



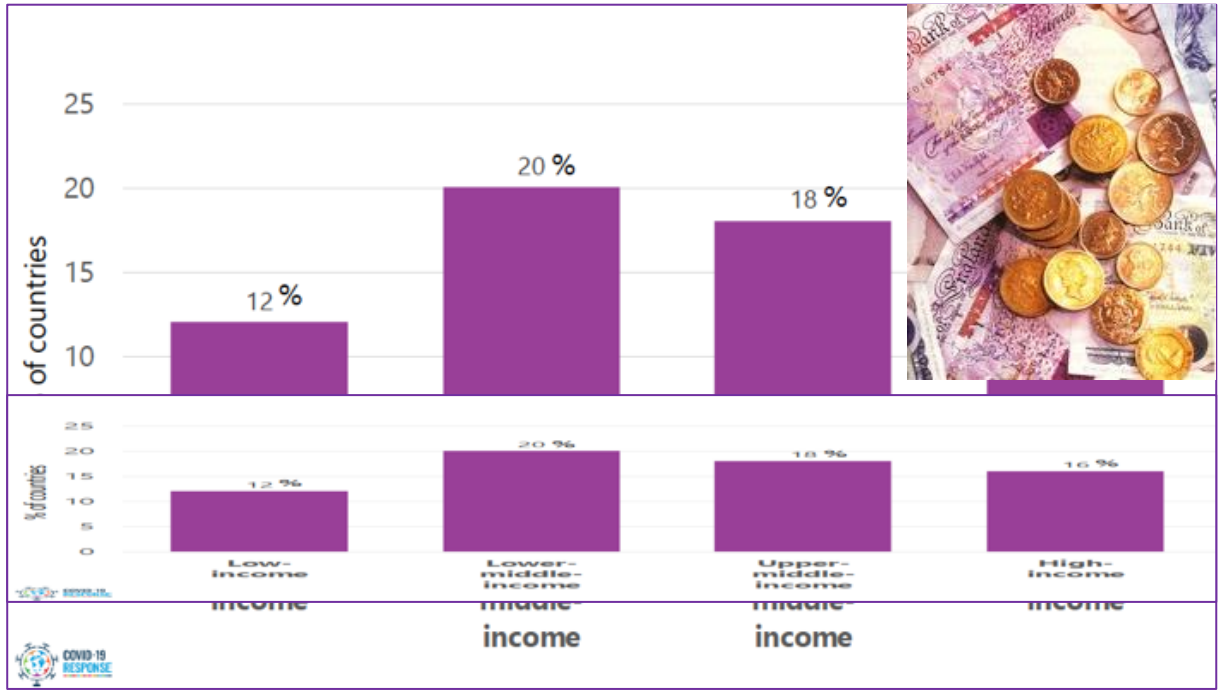
Wherever appropriate and feasible tele-rehabilitation services should be used

WHO survey of 155 (out of 194) national health services
1st May – 25th May

66% of countries have included continuity of NCD services in their COVID-19 plans



17% of countries have allocated additional funding for providing NCD services



WHO survey of 155 (out of 194) national health services
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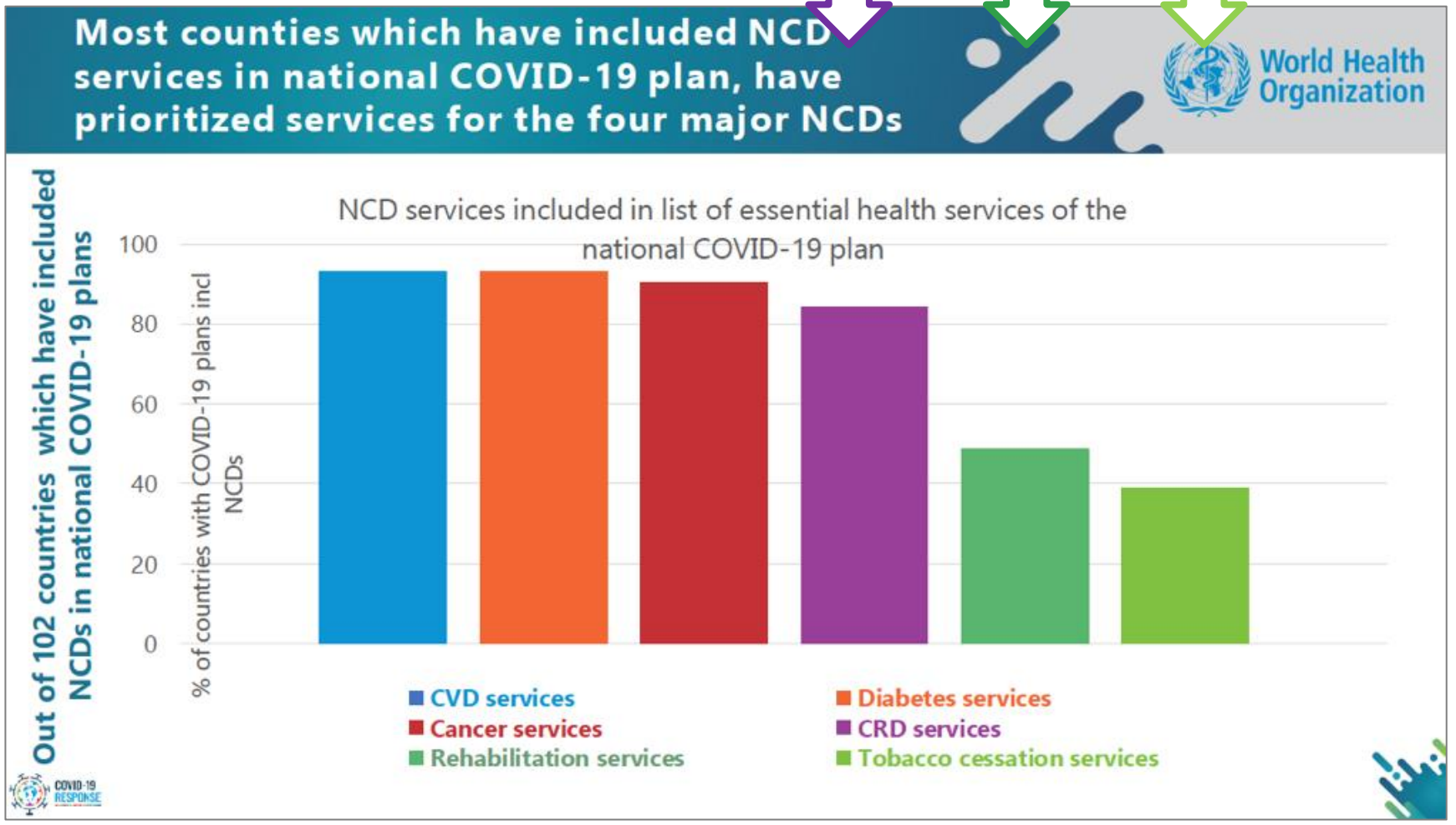
World Health Organization

CRD PR Quit



WHO survey of 155 (out of 194) national health services
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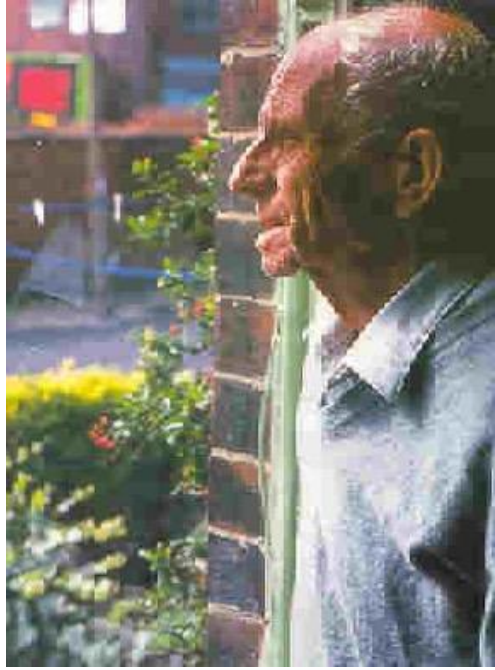
Shielding

Safe consulting



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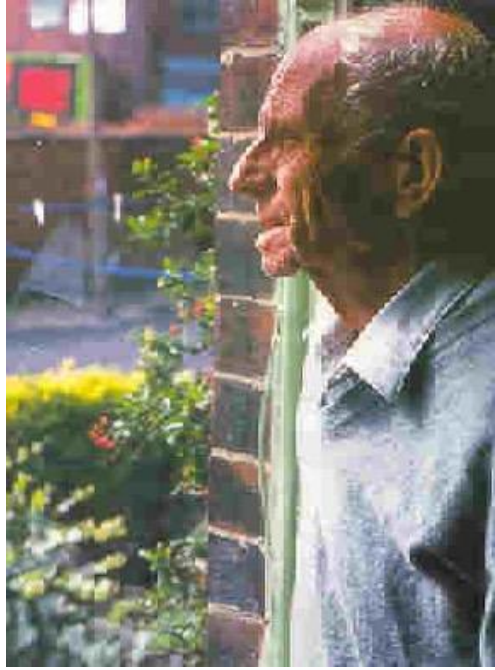
Shielding



Safe consulting

Remote consulting

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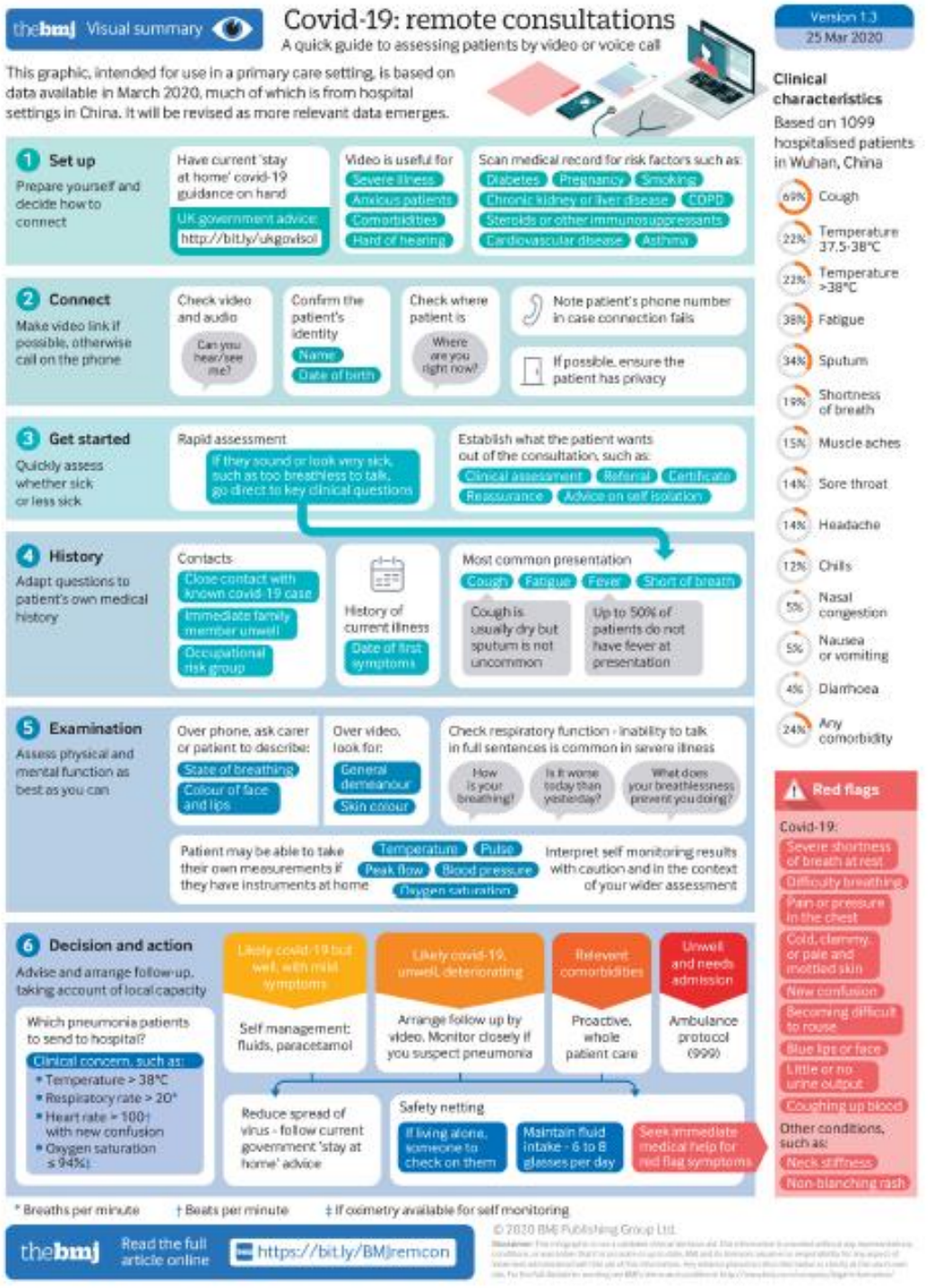
Acute: respiratory symptoms

Remote consulting in a Covid pandemic

Set up: prepare, background
Connect: check identity
Quickly assess severity/red flags
History
Examination: temp; BP; PF
Decision and safety net

How do you assess breathlessness remotely?

Greenhalgh et al BMJ 2020;368:m1182



Remote consulting in a Covid pandemic

- Ask the patient ‘How is your breathing today?’ (compared to yesterday/last week)
- Ask standard questions (MRC Dyspnoea score)?
- Roth score (Time how long how before the patient stops speaking to take a breath)
- Listen to whether the patient sounds breathless when they speak

How do you assess breathlessness remotely?

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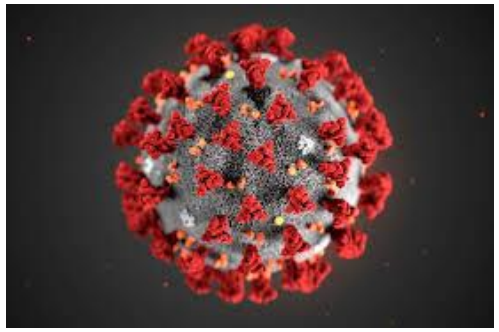
COVID-19, COPD or lung cancer?



Acute onset of:

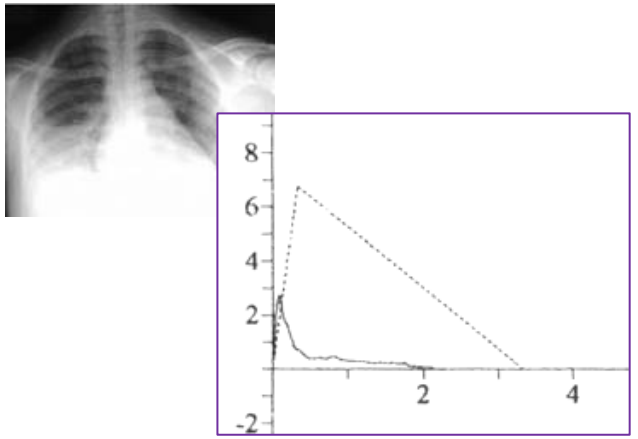
- Dry cough
- Breathlessness
- Fever / Myalgia
- Loss of smell ?Loss of taste
- Contact of COVID-19

Unclear onset of:

- Persistent cough
- Persistent breathlessness
- Fatigue of >4 weeks
- Persistent chest infection

Unexplained by Covid-19

- Haemoptysis/weight loss



Acute worsening of

- Cough and breathlessness

But remember pneumonia:

- Green sputum
- Fever, sweating rigors
- Stabbing pleuritic pain
- Confusion; systemic illness

British Thoracic Society

Differentiation of the Cs in lung cancer: Cancer vs. COVID

PCRS

PCRS Pragmatic Guidance

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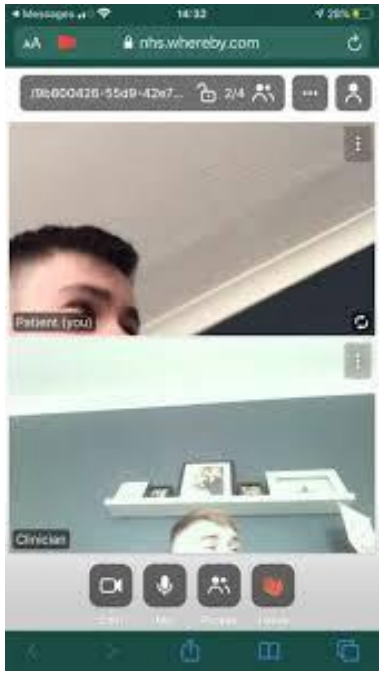
Video-consulting

* **Setting up**: Checking the video/audio (unmuting)
* **Social talk**: Greeting, rapport building
  Clinical talk: Related to the condition and management.
  Summarise the key points clearly.
  Operational talk: Instructions (to enable examination)
* **Repair talk:** Correcting significant disruption

Wherton J, et al. *BMJ Leader* 2020;0:1–5.



- ✓ Patients and clinicians were generally positive
- ✓ Improves access
- ✓ Vision enhances the consultation (inhaler technique)
- X Infrastructure can be a problem

Donaghy E, et al. *BJGP 2009; e593*

On-line and SMS messages

- ✓ Asynchronous; not for emergencies
- ✓ Enables clinician to prepare
- ✓ Can send photos
- ✓ Can send links (e.g. to information, clips of inhaler technique)

Generally acceptable and easy to use
Patients appreciate the improved access
Useful for those with long-term conditions and living remotely
Some concern about privacy and security of data (Photos)
Organisational/technological challenges

Mold et al *JMIR Med Inform* 2029;7:e3042

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Remote reviews for COPD

Ask about symptoms and how they are affecting ADL

- Use objective scores (MRC, CAT or CCQ)
- Remember depression*

Examination and tests

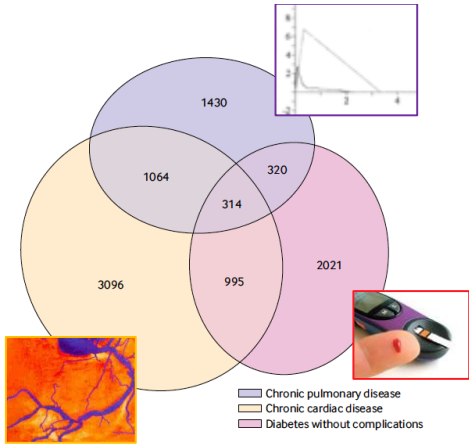
- Some patients may have oximeter/FEV_1 meter

Check smoking status (and advise to quit) *

Check inhaler technique (Provide links to video clips)*

Maintain ICS (if already indicated)

Discuss self-management*



Remember multimorbidity

NICE guideline

Rapid guidance for care of people with COPD www.nice.org.uk/guidance/ng168

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How do we manage these multiple concerns (remotely) in our practices?

I have diabetes – am I at increased risk from coronavirus?

If you have diabetes (Type 1 or Type 2), you are considered at high risk, which means if you catch coronavirus you could get more ill than other people who don't have a health problem. If you are also over 70 or have another health problem such as heart disease or kidney disease, you are at particularly high risk.

I have high blood pressure (or have been diagnosed with hypertension), am I at increased risk from coronavirus?

We know that a diagnosis of high blood pressure (hypertension) is linked to a higher risk of serious illness from Covid-19, and therefore you are considered at high risk. This means if you get coronavirus you are more likely to become seriously ill than someone who doesn't have health problems.

I've had a stroke, or vascular dementia, or small vessel disease in the brain – am I at increased risk from coronavirus?

Anyone who has a problem with the blood supply in their brain is at high risk of becoming seriously ill from coronavirus, no matter how long ago. This may be called cerebrovascular disease and includes a stroke, vascular dementia, and small vessel disease in the brain. This means if you catch coronavirus you are more likely to get seriously ill than other people who don't have health issues.

Obesity-related conditions seem to worsen the effect of COVID-19; indeed, the Centers for Disease Control and Prevention (CDC) reported that people with heart disease and COVID-19 complications.

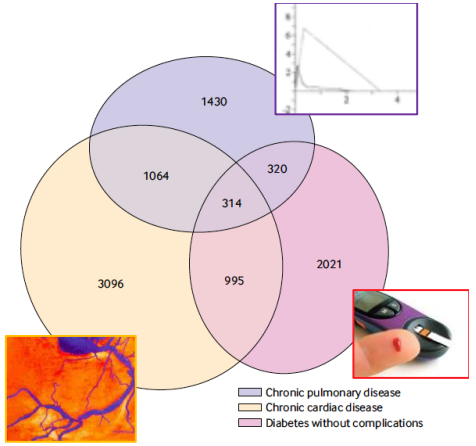
I have a heart or circulatory condition – am I at increased risk of coronavirus?

We know that this is a frightening time for lots of people, especially if you already have a health problem. Most people with coronavirus (Covid-19) have mild symptoms and make a full recovery. Having a heart or circulatory condition probably doesn't make you any more likely to catch coronavirus than anyone else. But if you have a heart condition it may mean that you could get more ill if you catch it, so it's really important to protect yourself.

Which people with kidney disease are advised to self-isolate/shield?

You are at very high risk and are advised to self-isolate (sometimes known as shielding) yourself if you are in at least one of the following groups:

1. You have a transplant
2. You are on dialysis
3. If you over 70 and are on any form of immunosuppression or have been on one in the past
4. Your kidney disease is caused by inflammation, a condition of your kidneys (sometimes called an autoimmune condition) AND you are in one or more of the following patient groups:



Chronic Obstructive Pulmonary Disease (COPD):

I have COPD, how will COVID-19 affect me?

ELF EUROPEAN LUNG FOUNDATION

We have learned that in about 50% of people who contract COVID-19, they experience no symptoms at all. Some people will experience a mild cold with running nose, sore muscles, fever and a cough. Others develop a more "flu-like" illness with worse fever, sore muscles and tiredness. In the most severe cases it causes a pneumonia with breathlessness and coughing in addition to the symptoms above.

Because COPD patients have lung problems to begin with, they may be more likely to experience breathlessness with COVID-19, and more likely therefore to need hospital treatment. Nevertheless, most people with COPD would experience no symptoms or just mild symptoms and make a full recovery.

Remember multimorbidity

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COPD patients are ‘at risk’ of poor outcomes

“Not only are people with NCDs more vulnerable to becoming seriously ill with the virus,
but many are unable to access the treatment they need to manage their illnesses.

It is very important not only that care for people living with NCDs is included in national response and preparedness plans for COVID-19…
… but that innovative ways are found to implement those plans”

World Health Organization

Dr Bente Mikkelsen, Director of Dept of NCDs,WHO.

The challenge for primary care is to support and help mitigate that risk

Presentation 2

Vince Mak, UK

COVID-19 & the Management of COPD in Primary Care pt 2

Dr Vincent Mak
Consultant Physician in Respiratory Integrated Care
Imperial College Healthcare NHS Trusts
Clinical Director NHSE(London) Respiratory Clinical Network

Breathing and feeling well through universal access to right care

COPD in Primary Care during COVID-19

- Define COPD
- Is COPD a risk for COVID-19 pneumonia?
- Is smoking a risk factor for COVID pneumonia?
- Diagnose COPD in the time of COVID
- Management of COPD exacerbation in the time of COVID
- Routine management of COPD in the time of COVID

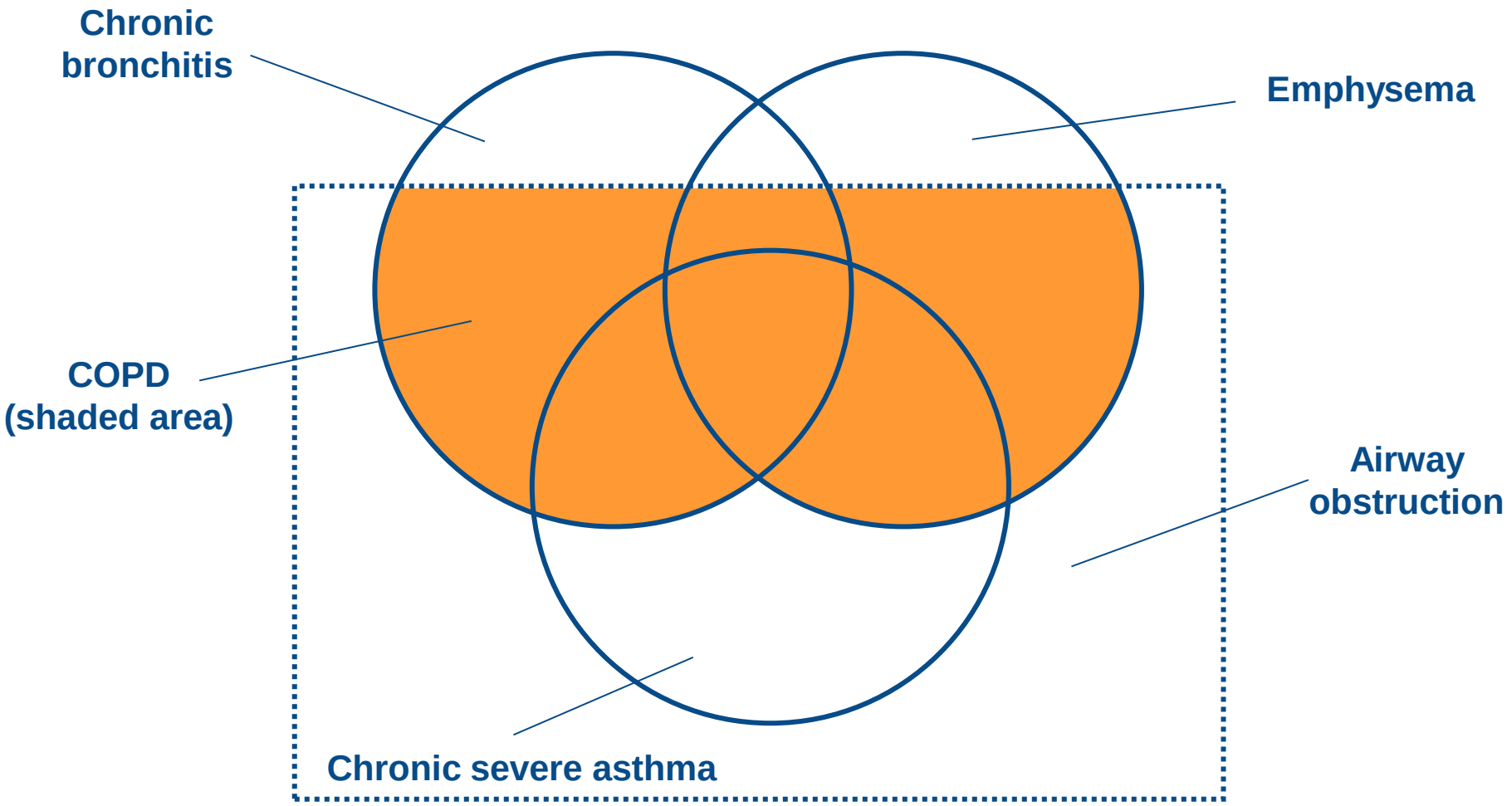
What is COPD?

- Poll 1

What is COPD?

- COPD is **NOT** a disease
- Just a description of the state of the airways (Chronic Obstruction of the airways)
- Heterogenous condition caused by several different diseases:

COPD – an umbrella term covering the "irreversible" aspect of chronic bronchitis, emphysema and asthma (+others)



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It is striking that COPD appears to be under-represented in the comorbidities reported for patients with COVID-19, compared with the global burden of disease estimates of the prevalence of these conditions in the general population.

A similar pattern was seen with SARS

Halpin: Editorial Lancet Respiratory May 2020

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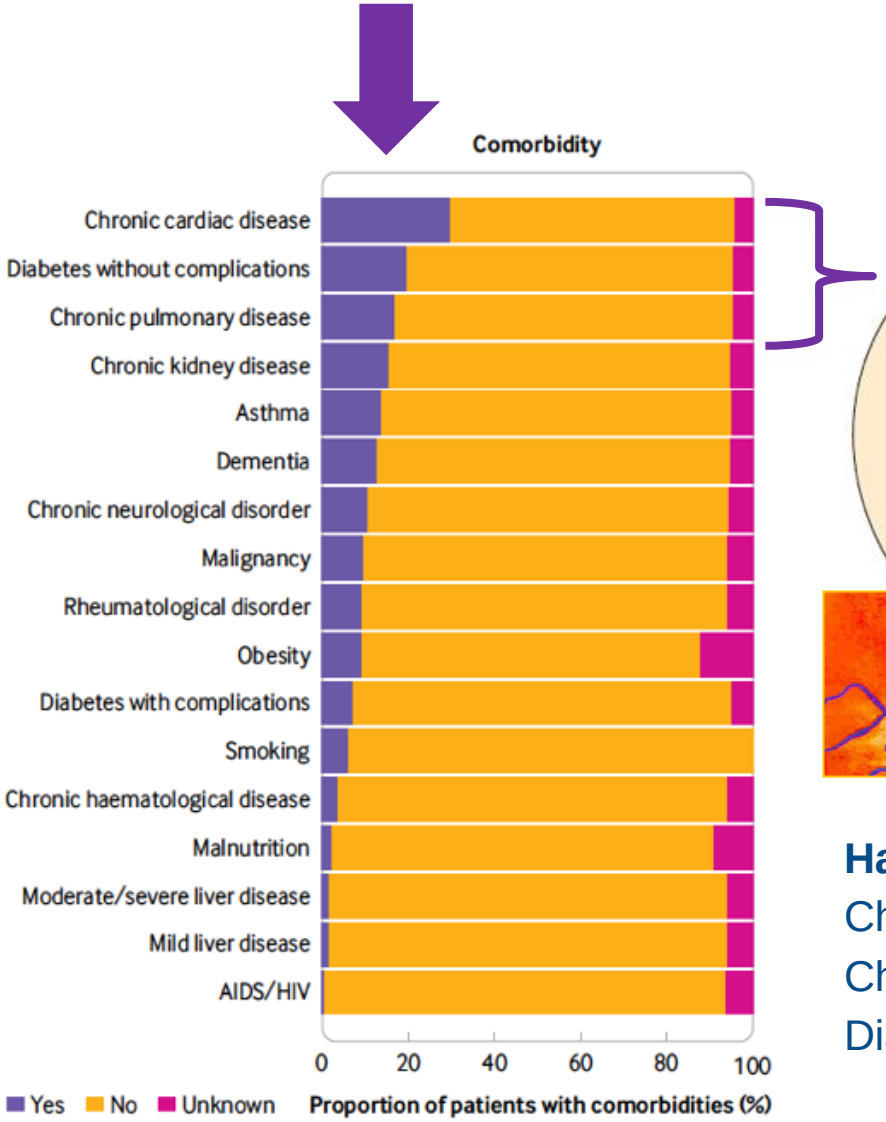
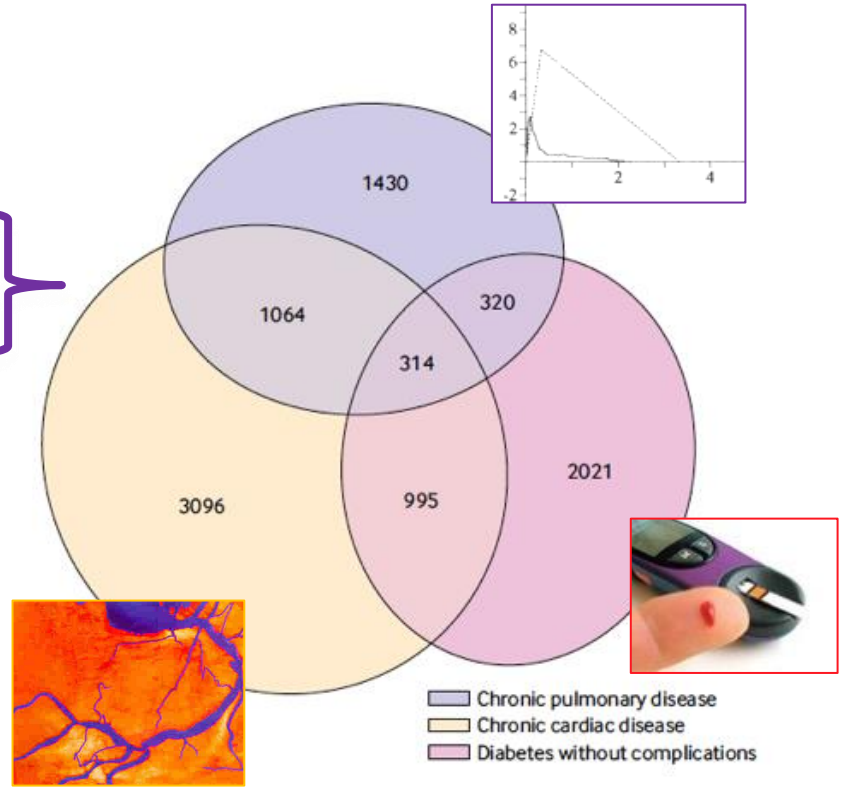
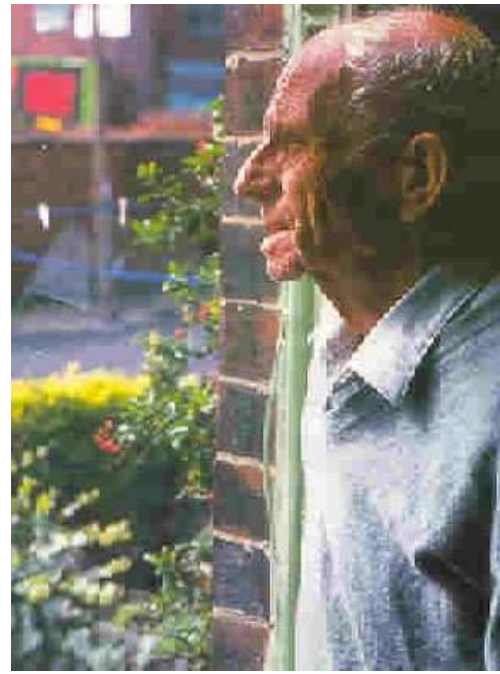




Predictors of poor outcomes:
Age, heart failure, male sex, chronic kidney disease, and obesity (not asthma/COPD) Petrilli *BMJ*



Hazard ratios for death

Chronic pulmonary disease	1.17 (1.09 to 1.27)
Chronic cardiac disease	1.16 (1.08 to 1.24)
Diabetes	1.06 (0.99 to 1.14)

…more likely to have an adverse outcome

Docherty et al. BMJ 2020;369:m1985

Is smoking a risk factor for COVID-19 pneumonia?

Is smoking a risk factor for COVID-19 pneumonia?

Comments (1)

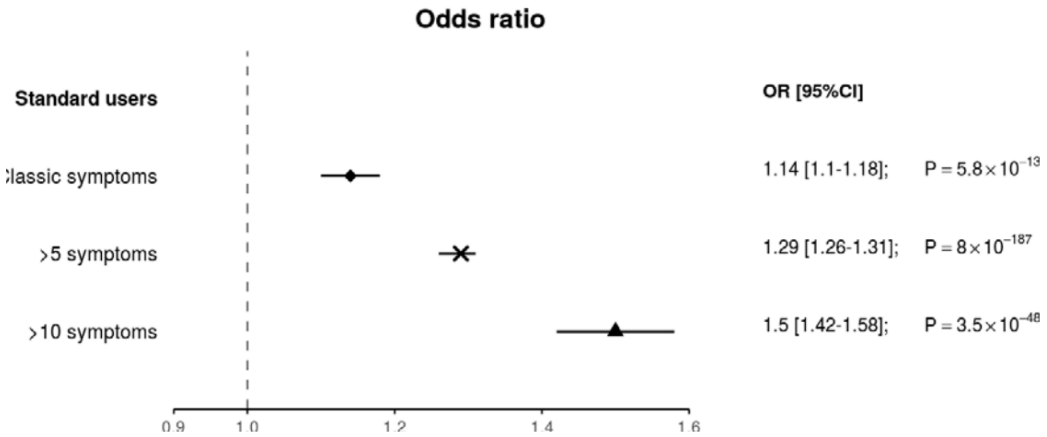
Current tobacco smoking and risk from COVID-19: results from a population symptom app in over 2.4 million people

Nicholas S Hopkinson, Niccolo Rossi, Julia El-Sayed Moustafa, Anthony A Laverty, Jennifer K Quint, Maxim B Freydin, Alessia Visconti, Benjamin Murray, Marc Modat, Sebastien Ourselin, Kerrin Small, Richard Davies, Jonathan Wolf, Timothy Spector, Claire J Steves, Mario Falchi

doi: https://doi.org/10.1101/2020.05.18.20105288

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should *not* be used to guide clinical practice.

Figure 1 Effect of current smoking on risk of presenting with COVID-19 symptoms.



The plot shows the OR [95% CI] for smokers from the Standard Users category of presenting with COVID-19 classic symptoms (i.e., all three of cough, fever and breathlessness) or a higher symptom burden (i.e., more than five or more than ten symptoms).

Is smoking a risk factor for COVID-19 pneumonia?

PLOS ONE

PUBLISH ABOUT BROWSE

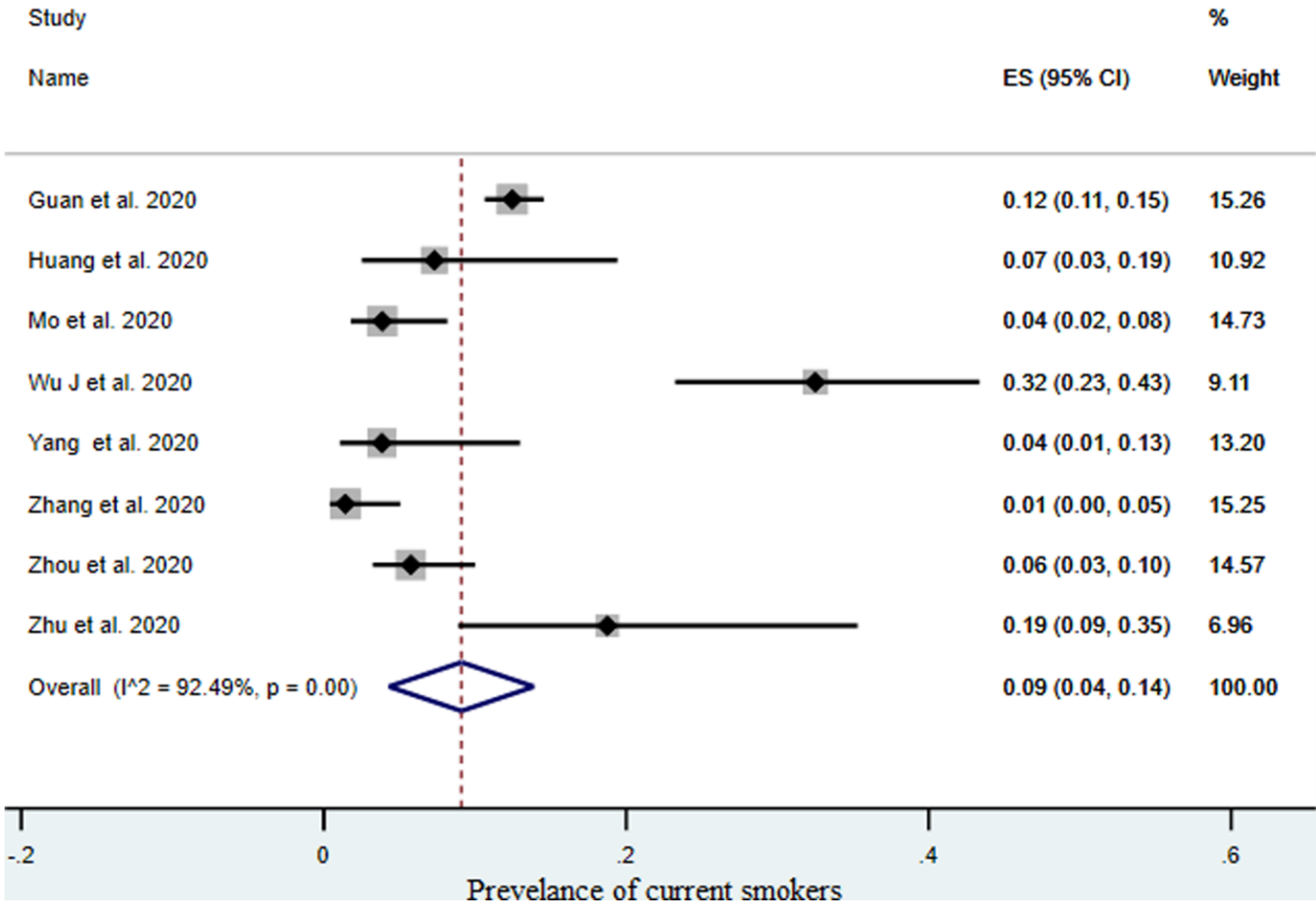
OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Prevalence, Severity and Mortality associated with COPD and Smoking in patients with COVID-19: A Rapid Systematic Review and Meta-Analysis

Jaber S. Alqahtani, Tope Oyelade, Abdulelah M. Aldhahir, Saeed M. Alghamdi, Mater Almehmadi, Abdullah S. Alqahtani, Shumonta Quaderi, Swapna Mandal, John R. Hurst

Published: May 11, 2020 • https://doi.org/10.1371/journal.pone.0233147



Is smoking a risk factor for COVID-19 pneumonia?

Article Apr 23, 2020 Qeios ID: UJR2AW.2
Open Access | CC BY | Cite https://doi.org/10.32388/UJR2AW.2

The association of smoking status with SARS-CoV-2 infection, hospitalisation and mortality from COVID-19: A living rapid evidence review Preprint v2

David Simons[1], Lion Shahab[2], Jamie Brown[2], Olga Perski[2]

Author(s) details

1. Royal Veterinary College, RVC, London, United Kingdom
2. University College London, University of London, United Kingdom

Conclusion

Across 28 observational studies, there is substantial uncertainty arising from the recording of smoking status on whether current and/or former smoking status is associated with SARS-CoV-2 infection, hospitalisation or mortality. There is low quality evidence that current and former smoking compared with never is associated with greater disease severity in those hospitalised for COVID-19.

In the multi-site study with participants predominantly from the UK in a hospital setting, 5.0% were current or former smokers. This compares with a current and former smoking prevalence of 14.4% and 25.8% in England in 2018[51], thus suggesting a lower than expected proportion of current and former smokers in the included study.

In the included studies conducted in the US across community and hospital settings, 1.3% to 27.2% were current smokers and 2.3% to 30.6% were former smokers. This compares with a smoking prevalence of 13.8% current and 20.9% former smokers in the US in 2018[48].

In the included study conducted in France, 7.1% were current smokers and 59.1% were former smokers across an outpatient and inpatient hospital setting, with 6.2% and 61.0% among those hospitalised. This compares with a current and former smoking prevalence of 32.0% and 31.4% respectively in France in 2018[50], thus suggesting a lower than expected proportion of current smokers in the included study but higher than expected proportion of former.

In the included studies conducted in hospital settings across China, 3.8% to 17.6% were current smokers and 1.9% to 5.0% were former smokers. However, current and former smoking prevalence in China was reported to be 50.5% and 8.4% respectively among men and 2.1% and 0.8% among women in 2018[47], thus suggesting lower than expected proportions of current and former smokers in the included studies.

CDC Weekly Morbidity and Mortality Reports

TABLE 1. Reported outcomes among COVID-19 patients of all ages, by hospitalization status, underlying health condition, and risk factor for severe outcome from respiratory infection — United States, February 12–March 28, 2020

Underlying health condition/Risk factor for severe outcomes from respiratory infection (no., % with condition)	No. (%)			
	Not hospitalized	Hospitalized, non-ICU	ICU admission	Hospitalization status unknown
Total with case report form (N = 74,439)	**12,217**	**5,285**	**1,069**	**55,868**
Missing or unknown status for all conditions (67,277)	**7,074**	**4,248**	**612**	**55,343**
Total with completed information (7,162)	**5,143**	**1,037**	**457**	**525**
One or more conditions (2,692, 37.6%)	1,388 (27)	732 (71)	358 (78)	214 (41)
Diabetes mellitus (784, 10.9%)	331 (6)	251 (24)	148 (32)	54 (10)
Chronic lung disease* (656, 9.2%)	363 (7)	152 (15)	94 (21)	47 (9)
Cardiovascular disease (647, 9.0%)	239 (5)	242 (23)	132 (29)	34 (6)
Immunocompromised condition (264, 3.7%)	141 (3)	63 (6)	41 (9)	19 (4)
Chronic renal disease (213, 3.0%)	51 (1)	95 (9)	56 (12)	11 (2)
Pregnancy (143, 2.0%)	72 (1)	31 (3)	4 (1)	36 (7)
Neurologic disorder, neurodevelopmental, intellectual disability (52, 0.7%)†	17 (0.3)	25 (2)	7 (2)	3 (1)
Chronic liver disease (41, 0.6%)	24 (1)	9 (1)	7 (2)	1 (0.2)
Other chronic disease (1,182, 16.5%)§	583 (11)	359 (35)	170 (37)	70 (13)
Former smoker (165, 2.3%)	80 (2)	45 (4)	33 (7)	7 (1)
Current smoker (96, 1.3%)	61 (1)	22 (2)	5 (1)	8 (2)
None of the above conditions¶ (4,470, 62.4%)	3,755 (73)	305 (29)	99 (22)	311 (59)

https://www.cdc.gov/mmwr/volumes/69/wr/mm6913e2.htm?s_cid=mm6913e2_w#T1_down

International Primary Care Respiratory Group
IPCRG work locally collaborate globally

CEBM

The Centre for Evidence-Based Medicine develops, promotes and disseminates better evidence for healthcare.

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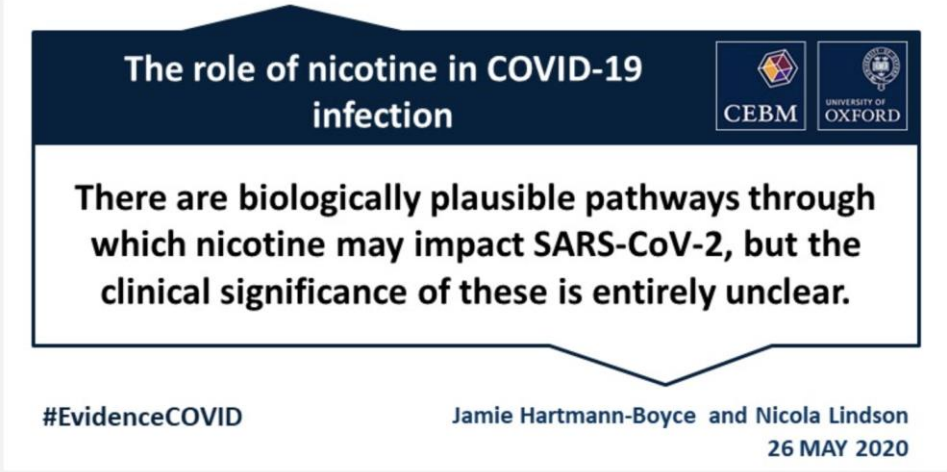
The role of nicotine in COVID-19 infection

May 26, 2020



CONCLUSIONS

- There are biologically plausible pathways through which nicotine may impact SARS-CoV-2, but the clinical significance of these is entirely unclear
- Early studies are underway regarding the role of nicotine replacement therapy as a therapeutic aid for COVID-19
- Evidence so far is too limited to inform any decisions about use of nicotine replacement therapy in COVID-19
- When used for smoking cessation, there is high certainty evidence that nicotine replacement therapy is safe and effective.

Diagnosing COPD in the time of COVID

- Poll 2

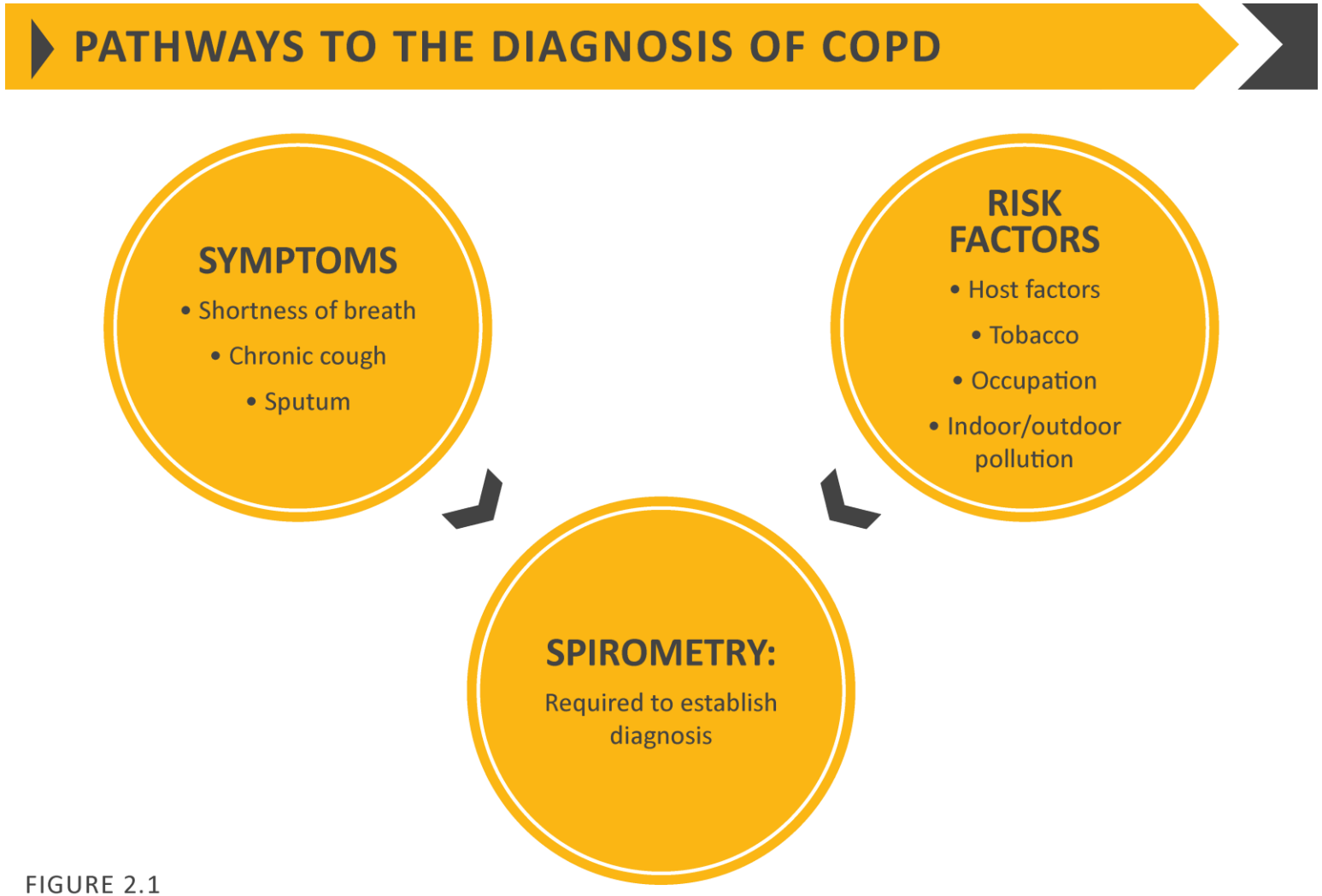

PATHWAYS TO THE DIAGNOSIS OF COPD
SYMPTOMS
• Shortness of breath
• Chronic cough
• Sputum
RISK FACTORS
• Host factors
• Tobacco
• Occupation
• Indoor/outdoor pollution
SPIROMETRY:
Required to establish diagnosis

FIGURE 2.1

Diagnosis of COPD (GOLD 2020)

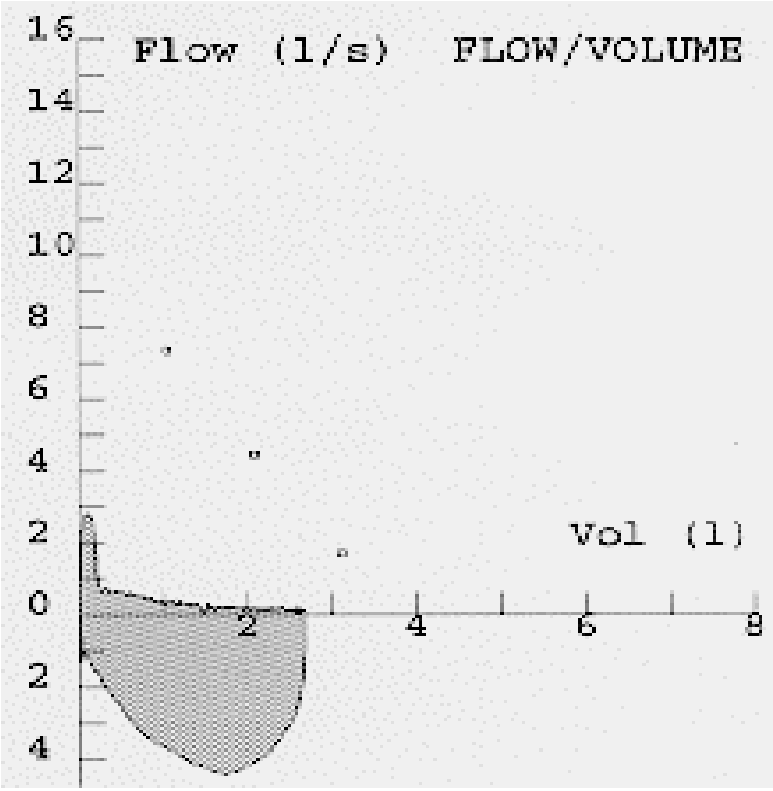
KEY INDICATORS FOR CONSIDERING A DIAGNOSIS OF COPD

Consider COPD, and perform spirometry, if any of these indicators are present in an individual over age 40. These indicators are not diagnostic themselves, but the presence of multiple key indicators increases the probability of a diagnosis of COPD. Spirometry is required to establish a diagnosis of COPD.

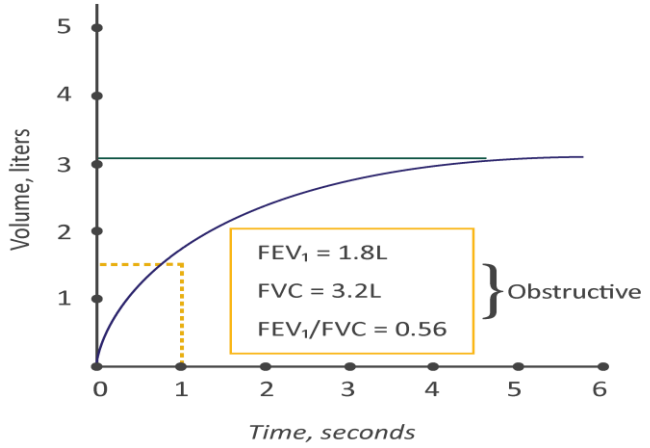
Dyspnea that is:	Progressive over time. Characteristically worse with exercise. Persistent.
Chronic Cough:	May be intermittent and may be unproductive. Recurrent wheeze.
Chronic Sputum Production:	Any pattern of chronic sputum production may indicate COPD.
Recurrent Lower Respiratory Tract Infections	
History of Risk Factors:	Host factors (such as genetic factors, congenital/developmental abnormalities etc.). Tobacco smoke (including popular local preparations). Smoke from home cooking and heating fuels. Occupational dusts, vapors, fumes, gases and other chemicals.
Family History of COPD and/or Childhood Factors:	For example low birthweight, childhood respiratory infections etc.

TABLE 2.1

Airflow obstruction in COPD



SPIROMETRY - OBSTRUCTIVE DISEASE



CLASSIFICATION OF AIRFLOW LIMITATION SEVERITY IN COPD (BASED ON POST-BRONCHODILATOR FEV_1)

In patients with FEV1/FVC < 0.70:

GOLD 1:	Mild	$FEV_1 \geq 80\%$ predicted
GOLD 2:	Moderate	$50\% \leq FEV_1 < 80\%$ predicted
GOLD 3:	Severe	$30\% \leq FEV_1 < 50\%$ predicted
GOLD 4:	Very Severe	$FEV_1 < 30\%$ predicted

TABLE 2.4

Spirometry in the time of COVID

- Spirometry is **not** an aerosol generating procedure (AGP) so does not require full PPE:
  - UK: Public Health England
- Spirometry **is** an AGP and requires full PPE
  - UK: BTS/ARTP
  - Europe: ERS
  - USA: ATS/AAAI/CDC

Considerations for doing spirometry as AGP

- Full PPE (incl FFP3 mask)
- Consider room air change frequency (up to 3 hrs) – or do in open space outdoors
- Clean all equipment

OR

- Swab patient 48hr beforehand (or reliable Ag/rapid PCR test)
- Then treat in clean area

Peak Flow as indicator of airflow obstruction

- Peak flow is reduced in airflow obstruction
- Peak flow is variable in asthma
- Peak flow does not vary in COPD without asthma

Peak Flow detecting COPD

Papers

Detecting chronic obstructive pulmonary disease using peak flow rate: cross sectional survey

BMJ 2003 ; 327 doi: https://doi.org/10.1136/bmj.327.7416.653 (Published 18 September 2003)
Cite this as: *BMJ* 2003;327:653

Article | Related content | Metrics | Responses

Hannah Jackson, medical student [1], *Richard Hubbard, senior lecturer in clinic*

Author affiliations

Division of Epidemiology and Public Health, Nottingham City Hospital, Nc

PF< 80% predicted will detect >90% of cases of COPD and 100% of GOLD stage 3/4

Diagnoses of chronic obstructed pulmonary disease and peak expiratory flow rate

Peak expiratory flow rate	None	Mild (60%-80%)	Moderate (40%-59%)	Severe (<40%)	Total
<80% predicited					
No of participants	679	126	76	33	235
Crude %	17.5	3.3	2.0	0.9	6.1
Adjusted* %	16.6	4.0	2.2	0.8	7.1
≥80% predicted or greater					
No of participants	2930	30	0	0	30
Crude %	75.6	0.8	—	—	0.8
Adjusted* %	75.6	0.7	—	—	0.7%

* Adjusted to allow for sampling in NHANES III. Crude values for peak expiratory flow rate <80%: sensitivity 89%, specificity 76%, positive predictive value 26%. Values for peak expiratory flow rate <80% predicted allowing for sampling procedure: sensitivity 91%, specificity 82%, positive predictive value 30%

Peak Flow detecting COPD

INT J TUBERC LUNG DIS 13(3):387–393

Can a normal peak expiratory flow exclude severe chronic obstructive pulmonary disease?

R. Perez-Padilla,* W. M. Vollmer,† J. C. Vázquez-García,* P. L. Enright,‡ A. M. B. Menezes,§ A. S. Buist,¶ for the BOLD and PLATINO study groups

*Instituto Nacional de Enfermedades Respiratorias, Mexico DF, Mexico; †Kaiser Permanente Center for Health Research, Portland, Oregon, ‡The University of Arizona, Tucson, Arizona, USA; §Universidade Federal de Pelotas, Pelotas, Brazil; ¶Oregon Health and Science University, Portland, Oregon, USA

N=13708

With PF>70% pred cut off, effectively rules out GOLD stage 3-4

Table 2 Sensitivity and NPV of a screening strategy for COPD based on PEF*

PEF cut-off point	<100%P†	<90%P†	<80%P†	<70%P†	<65%P†	<60%P†
Gold standard = GOLD Stages III–IV						
Sensitivity, %	96.9	96.9	96.7	95.6	93.5	89.5
95%CI	96.7–97.2	96.7–97.2	95.7–96.4	95.3–96.0	93.0–93.9	89.0–90.0
NPV	99.9	99.9	99.9	99.9	99.9	99.8
95%CI	99.9–99.9	99.9–99.9	99.9–99.9	99.9–99.9	99.8–99.9	99.7–99.9
Gold standard = GOLD Stage II						
Sensitivity, %	88.7	82.2	70.3	53.5	44.4	33.9
95%CI	88.1–89.2	81.5–82.8	69.5–71.1	52.7–54.4	43.6–45.3	33.1–34.7
NPV	98.6	98.3	97.6	96.5	95.9	95.2
95%CI	98.4–98.8	98.1–98.5	97.3–97.8	96.2–96.8	95.6–96.3	94.9–95.6
% of subjects below the PEF cut-off point in the group at increased risk for COPD (% requiring spirometry to confirm GOLD Stages III–IV)	55.8	36.9	21.6	12.3	9.2	6.9

Peak flow in COPD is stable

Daily Peak Expiratory Flow Rate and Disease Instability in Chronic Obstructive Pulmonary Disease

Jennifer Y. So, MD[1] Alejandra C. Lastra, MD[1] Huaqing Zhao, PhD[1] Nathaniel Marchetti, DO[1] Gerard J. Criner, MD[1]

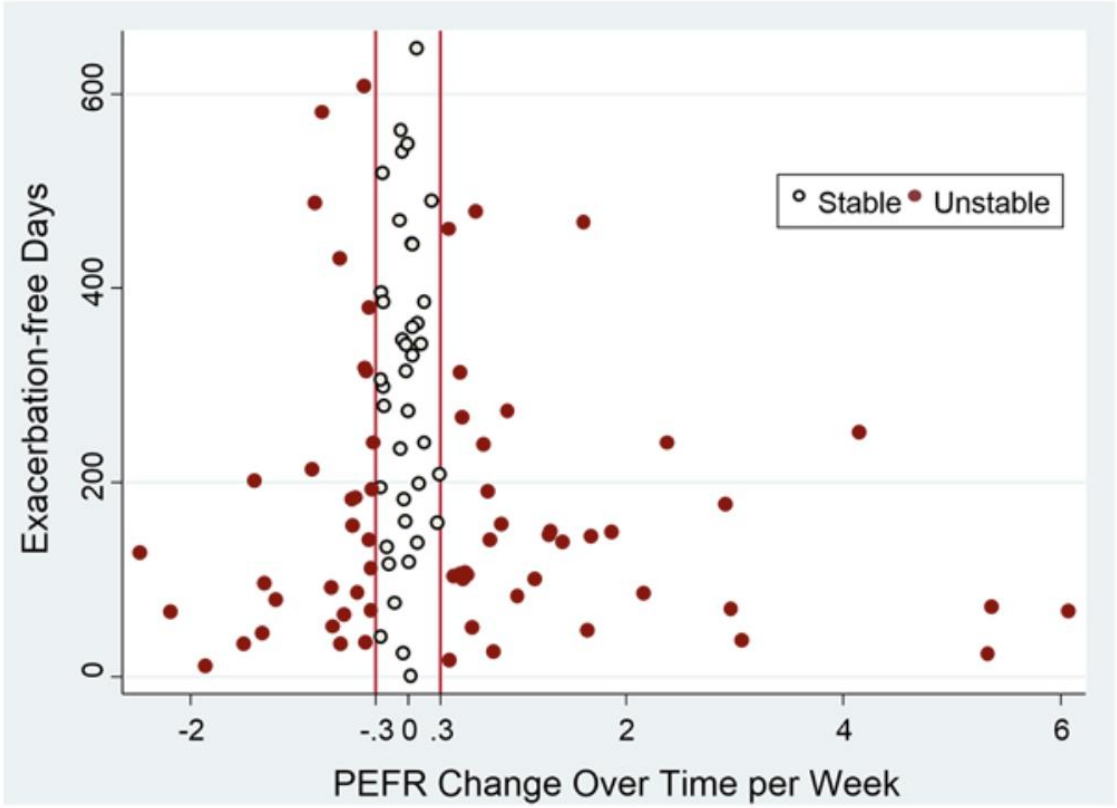
Author Affiliations | Correspondence | Abstract | Citation | Keywords | PDF

Citation

Citation: So JY, Lastra AC, Zhao H, Marchetti N, Criner GJ. Daily peak expiratory flow rate and disease instability in chronic obstructive pulmonary disease. *Chronic Obstr Pulm Dis*. 2016; 3(1): 398-405. doi: http://doi.org/10.15326/jcopdf.3.1.2015.0142

Peak flow does not vary over time unless exacerbating

Figure 1. Scatter Plot of Exacerbation Free Days Versus PEFR Change (Slope) Per Week

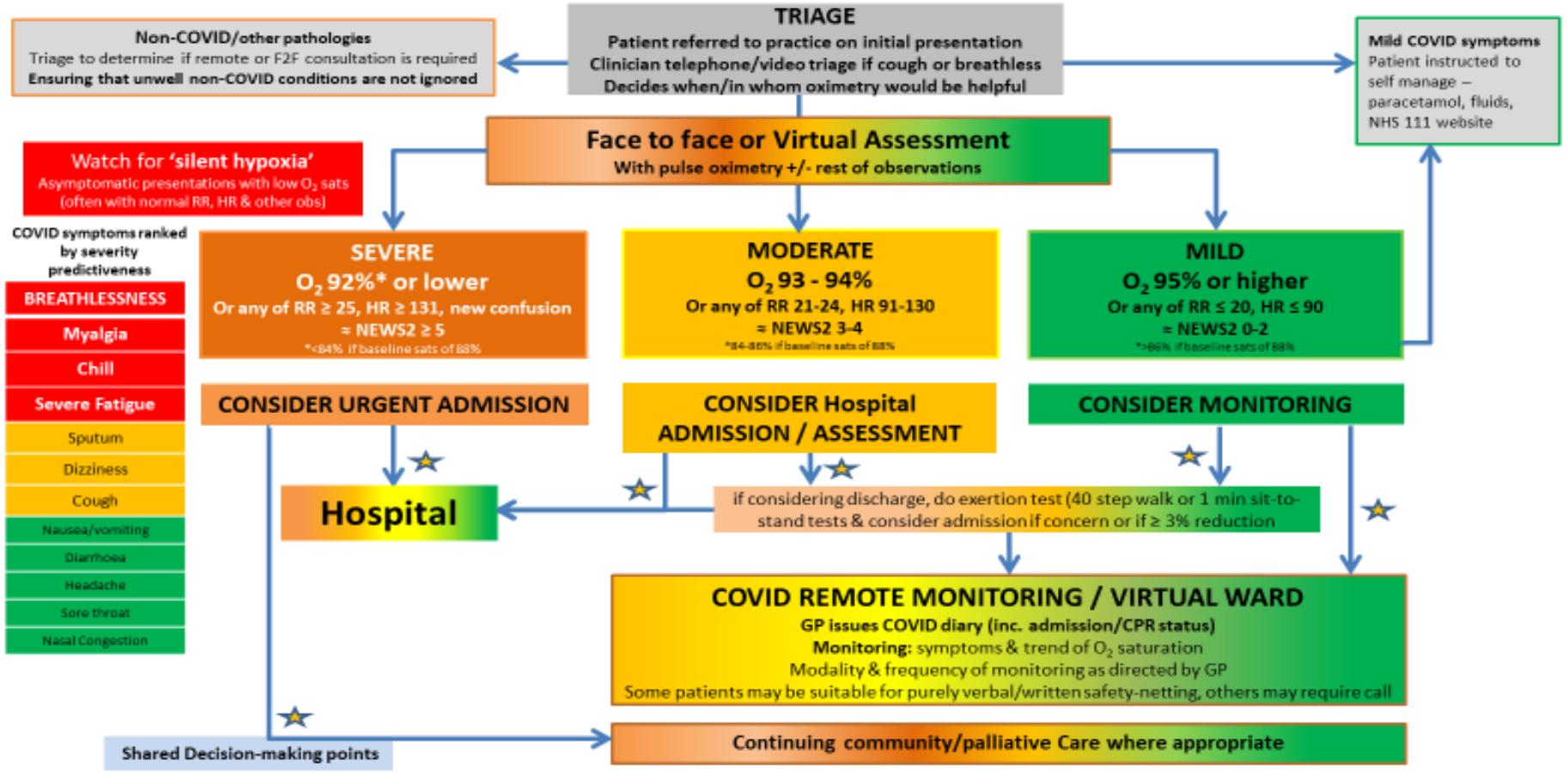


Peak Flow to diagnose COPD

- Peak flow <80% pred highly suggestive of significant airflow obstruction
- Lack of variation over a 2 week period would suggest fixed airflow obstruction and not asthma (can use SABA and see if any effect on PF)
- Code as suspected/high probability of COPD and confirm with spirometry when available

Managing COPD exacerbation in the time of COVID

Annex 1: Adult primary care COVID-19 assessment pathway[7]



[7] See also: www.cebm.net/covid-19/what-is-the-efficacy-and-safety-of-rapid-exercise-tests-for-exertional-desaturation-in-covid-19/

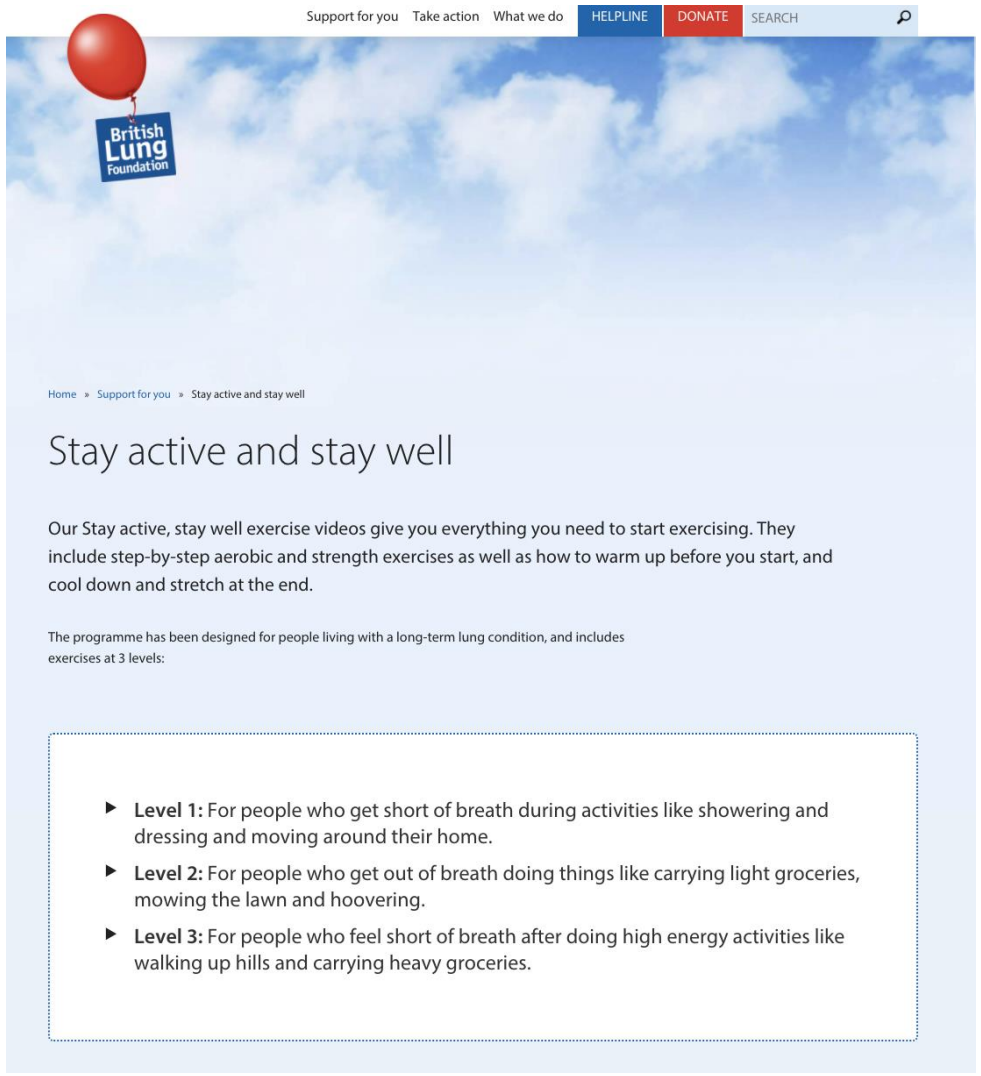
Source: NHS England Pulse oximetry to detect early deterioration of patients with COVID-19 in primary and community care settings

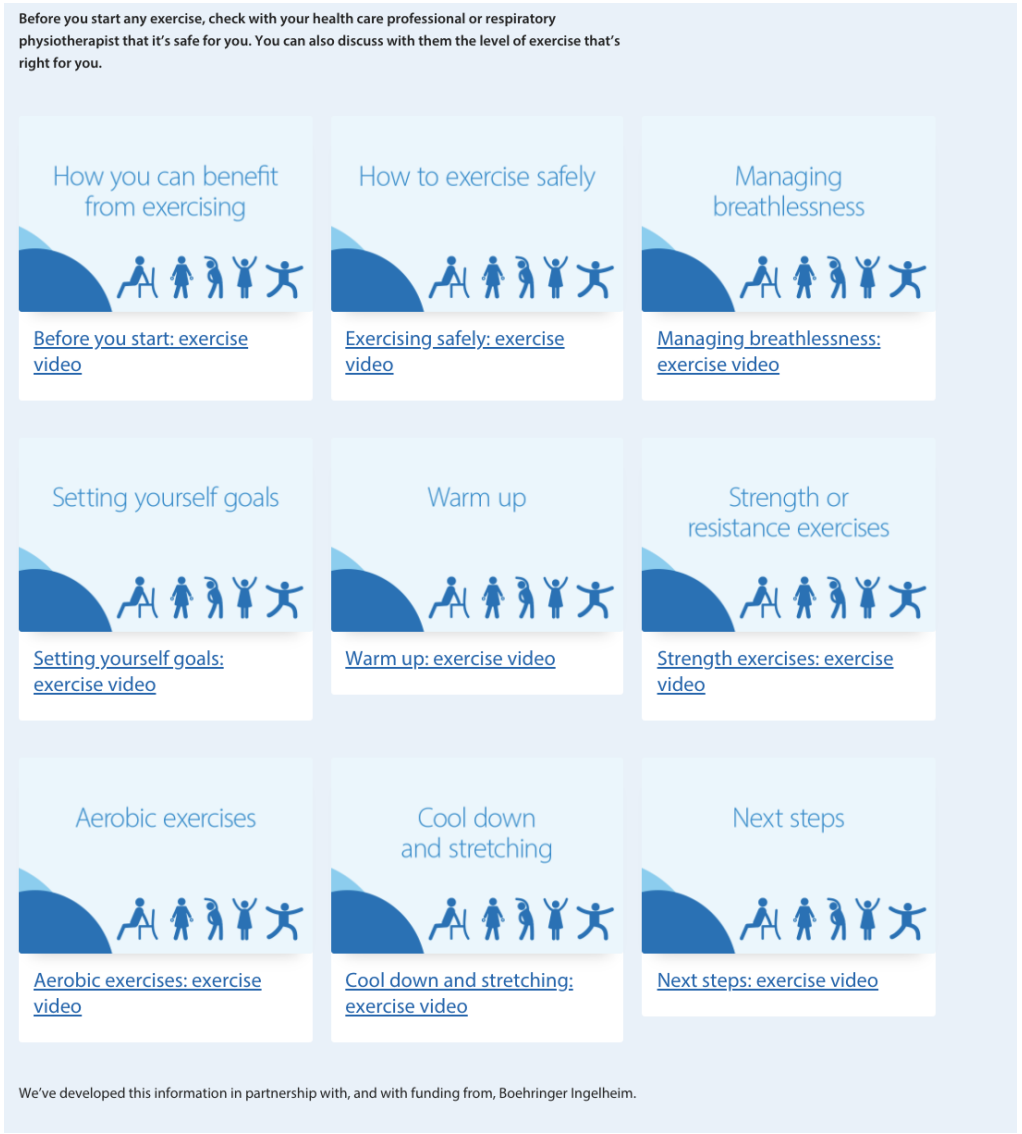
Management

- No change in medical management (expect isolation in cases of suspected COVID)
- Follow self management plan if has one
- Increase use of SABA (using spacer)
- Antibiotics if purulent sputum or suspicion of secondary pneumonia (COVID cough often different from normal)
- Oral steroids if low suspicion of COVID (lack of fever)

Managing stable COPD in the time of COVID

Online Pulmonary Rehab resources





Adaptive Live Pulmonary Rehabilitation

We are working it out as we go along!