International Pharmaceutical Federation

“Responding to the Pandemic Together” Programme

Episode 27: *Evidence-based practice during the COVID-19 pandemic: More important now than ever*

Delivered by the FIP Pharmacy Practice Research Special Interest Group in Collaboration with Research in Social and Administrative Pharmacy and the Social and Administrative Pharmacy Section

Moderator(s)

Victoria Garcia Cardenas

- Senior Lecturer, University of Technology Sydney
- *Chair, FIP Pharmacy Practice Research SIG*
- *Associate Editor, Research in Social and Administrative Pharmacy*

Email: Victoria.GarciaCardenas@uts.edu.au

@VGC_AF

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Welcome to the "Responding to the Pandemic Together" events

FIP's Special Online Programme on COVID-19

These webinars aim to

I. Provide relevant informatio…and the pharmacy workforce on Coronavirus SARS-CoV-2/CO…

II. Share and discuss strategies …ers - including our Member Organisations – in response …

III. Describe sector or area-spec…aches adopted across pharmaceutical science, practice and educat…

IV. Engage frontline workers of …now about the realities facing them around the world.

V. Discuss the implications of t…pply, shortages that have been exacerbated by COVID-19, a…

VI. Consider the impact of this disease on patients across age groups and with concurrent conditions.

VII. Assess and discuss the evidence behind treatments and the process of developing therapies, vaccines and tests.

To share ideas on webinar topics we should feature, or if you'd like to share your story on dealing with the pandemic please email

lina@fip.org

Important Links & Resources

FIP Covid-19 Information Hub

A comprehensive FIP webpage containing all of our resources and outputs relating to COVID-19, including recordings of previous webinars.

Link: https://www.fip.org/coronavirus

FIP Facebook Group: “COVID-19 & pharmacy”

Link:https://www.facebook.com/groups/covid19andpharmacy/

Announcements

FIP Digital Events House Rules

1. This webinar is being recorded and live streamed on Facebook
2. The recording will be **freely available** at www.fip.org/coronavirus and on our YouTube channel
3. You may ask questions by typing them into the Q&A box
4. Your feedback is welcome (webinars@fip.org)

Learning Objectives

- To differentiate between the different levels of evidence
- To identify the types of evidence that can be used to inform practice
- To critically assess the published studies related to COVID19 and be able to use them to inform practice, where appropriate

Evidence Based Practice

The concept and relevance of the webinar

- Evidence based practice requires that healthcare decisions are made based on the best available, current, valid, and relevant evidence and is **essential to deliver high quality patient care**.

- Critical during the current COVID-19 pandemic

Speaker 1	Levels of evidence	
Speaker 2	Critical appraisal of evidence	
Speaker 3	Economic evidence to inform decision making	

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Speaker 1

Filipa Alves da Costa, PhD

- Public health Consultant, WHO Regional Office for Europe
- IUEM, Associate Professor
- FFUL, Invited Professor
- RON (National Oncology Register), Researcher in therapeutic effectiveness
- Associate Editor of International Journal of Clinical Pharmacy
- Chair Education Committee, European Society of Clinical Pharmacy
- iPACT Board

Email: alvesdacosta.f@gmail.com @Filipa_A_C

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What is evidence?

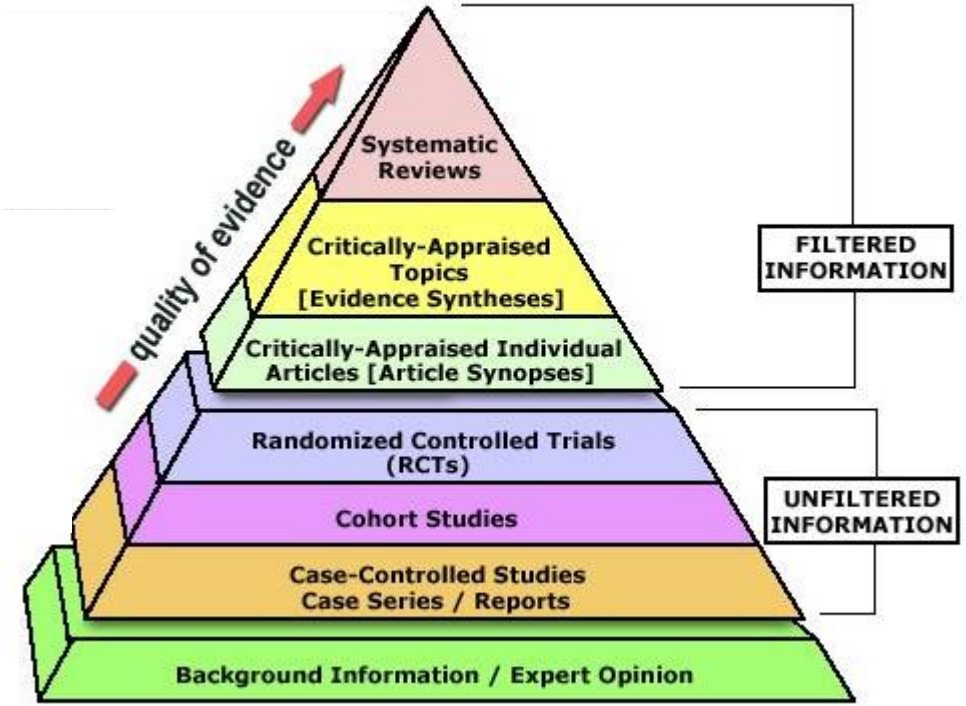
What are opinions?

- **Opinion evidence** refers to evidence of what the witness thinks, believes, or infers in regard to facts, as distinguished from personal knowledge of the facts themselves. In general, witnesses should testify only as to the facts observed and should not give opinion[1].
- **Evidence** (noun): the available body of facts or information indicating whether a belief or proposition is true or valid[2].
- **Evidence-based medicine** the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research[3].

1. Wikipedia. Available at https://en.wikipedia.org/wiki/Opinion_evidence. **2.** Dictionary of Oxford Languages. **3.** Sackett, DL. Evidence-Based Medicine. Seminars in Perinatology, 1997; 21(1): 3-5

Hierarchy of Evidence

How to judge the quality of evidence provided by different studies



Consensus Statements

"Expert consensus statement" implies review by recognized organizations and widespread expert agreement.
It should reflect a broad-based consensus representing more than author opinions.
It should not reflect the views of a few self-selected individuals, even if after conducting literature.
Recommendations issued ought to be supported by existing evidence, the highest available to date. *E.g.* WHO recommendations consider only systematic reviews; there are published studies with recommendations based on a single published report of 10 cases

Foust AM, Phillips GS, Chu WC, Daltro P, Das KM, Garcia-Peña P, Kilborn T, Winant AJ, Lee, EY. International Expert Consensus Statement on Chest Imaging in Pediatric COVID-19 Patient Management: Imaging Findings, Imaging Study Reporting and Imaging Study Recommendations. Radiology: Cardiothoracic Imaging 2020; 2(2)

Case study and Case Series

Case presentation

…On 11 February 2020, a 37-year-old man presented to Wuhan Huo Shen Shan Hospital with a history of fever, dry cough and chest pain since 10 January 2020. The chest CT of this patient on 08 February showed multiple infiltrations in both lungs, consistent with viral infection. But the RT-PCR amplification of SARS-Cov-2 virus nucleic acid from a nasopharyngeal swab was negative. He denied any other diseases before this onset. The initial physical examination revealed a body temperature of 38.8 °C, oxygen saturation (SPO_2) 85–90% under ambient air, respiratory rate of 40 breaths/minute, blood pressure of 145/93 mmHg, and pulse of 119 bpm. The laboratory results reflected normal lymphocytes, normal procalcitonin (0.04 ng/mL) and elevated C-reactive protein (CRP, 96.5 mg/L), a-hydroxybutyrate dehydrogenase (a-HBDH, 318 IU/L) and glutamyl transpeptidase (GGT, 136 IU/L)….

Table 1 Eight (8) COVID-19 suspect cases reported in Zimbabwe between the 19th of February 2020 and the 13th of March 2020.

Case	Date reported	Age Sex	History and symptoms	Travel history	WHO suspect criteria met	COVID-19 test done and result	Comments
1	19/02/20	27 Female	Asymptomatic (no cough, apyrexial, no shortness of distress or signs of respiratory distress)	Prior travel to Wuhan before leaving China but arrived in Zimbabwe from Guangzhong, China.	Yes	Yes Negative (including a confirmation sample sent to South Africa)	Later reported on the 26th of February at the local central hospital to consult a Psychiatrist
2	08/03/20	Female	Referred on the 6th of March 2020. Confirmed dead on arrival.	Returned from China on the 24th of January 2020.		Yes Negative	
3	09/03/20	26 Male	Two-day history of cough (mainly at night), fever and sneezing.	Arrived from Thailand on the 14th of February 2020.	No	Yes Negative	Initially absconded testing and later came back after a police report
4	10/03/20	Female	Presented with cough chest pain and difficulty in breathing. Was attended at Victoria Falls Hospital	Arrived from the United Kingdom.	No	No	Treated as pneumonia and was seen to be recovering on antibiotics
5	10/03/20	Male	No symptoms and apyrexial. Reported by the staff of a local hotel where he was staying.	Left Guangzhou on the 10th of February en route to Zimbabwe via South Africa. Arrived in Zimbabwe on the 10th of March 2020.	No	No	Possibility of stigma by the local hotel staff
6	12/03/20	Female	Reported with flu-like symptoms and had contact with someone with similar symptoms.	Left the United Arab Emirates on the 4th of March 2020 en route to Zimbabwe via South Africa and arrived in Zimbabwe on the 12th of March 2020.	No	No	
7	13/03/20	39 Female	Self-presented with history of chest pain and fever, suspecting she might have contracted coronavirus.	No travel history.	No	No	
8	13/03/20	25 Female	Sore throat, runny nose, headache, general body malaise, and a dry cough.	Arrived from China on the 5th of February via South Africa. Travelled to South Africa again on the 27th of February and came back on the 28th of February 2020.	No	Yes Negative	

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1. Wang, M., Luo, L., Bu, H., & Xia, H. Case Report: One Case of Coronavirus Disease 2019 (COVID-19) in Patient Co-Infected by HIV With a Low CD4+ T Cell Count. *International Journal of Infectious Diseases*. 2020. **2.** Makurumidze, R. Coronavirus-19 Disease (COVID-19): a case series of early suspects reported and the implications towards the response to the pandemic in Zimbabwe. Journal of Microbiology, Immunology and Infection. 2020

Cross-sectional studies

General characteristics

- Measure the prevalence of conditions or characteristics of people in a population at a point in time or over a short period
- Classified as descriptive studies for large populations, but can also explore risk factors associated with particular illness or behaviour
- Useful for planning public health interventions.

Some examples

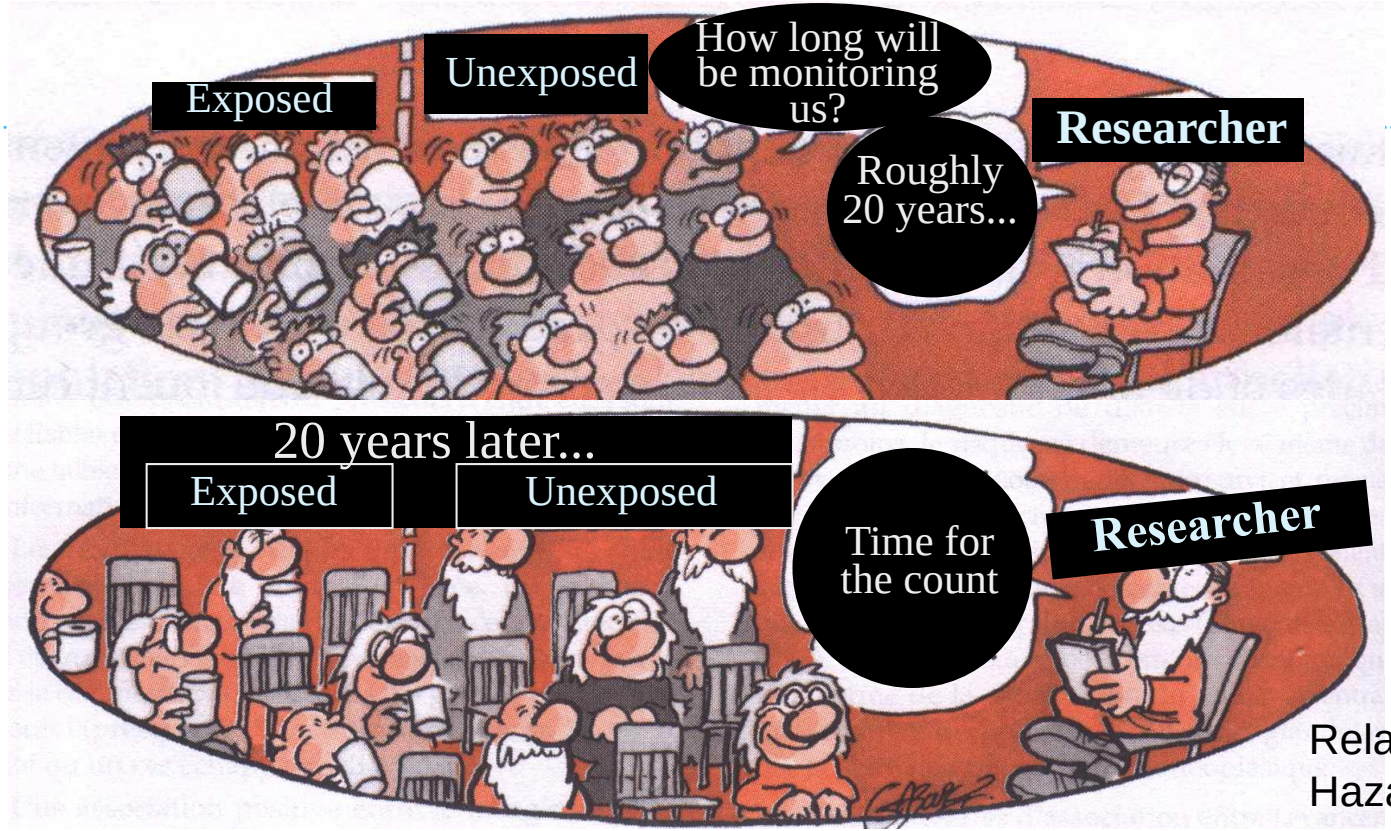
1. Online survey of 4,850 Malaysian residents, 13 knowledge items, 3 on attitudes and 3 on practices. >80% taking precautions to avoid crowds, hand hygiene; face masks by 51%.
2. Online self-reported survey from 3,388 people from South Arabia. Older adults are likely to have better knowledge and practices, than younger people (p>0.001).
3. UK bathers were more likely to report skin ailments (AOR=2.64 {95%CI: 1.23 to 5.65}, ear ailments (AOR=3.77 {95%CI: 1.84-7.73} and any symptoms of illness (AOR=3.73 {95%CI: 2.63-5.29}.

1. Azlan et al. Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia. PLoS ONE 2020; 15(5). 2. Al-Hanawi et al. Knowledge, Attitude and Practice Toward COVID-19 Among the Public in the Kingdom of Saudi Arabia: A Cross-Sectional Study. Frontiers in Public Health. 2020;8:217. 3. Leonard et al. A cross-sectional study on the prevalence of illness in coastal bathers compared to non-bathers in England and Wales: Findings from the Beach User Health Survey. Water Research. 2020; 176(1).

Case-control studies

Hernández-Garduño, E. Obesity is the comorbidity more strongly associated for Covid-19 in Mexico. A case-control study. Obesity Research & Clinical Practice 2020

Cohort studies



Relative Risk
Hazard Function

Xiao et al. Comparison of Hospitalized Patients With ARDS Caused by COVID-19 and H1N1. Chest 2020; 158(1):195-205.

Clinical Trials

Relative Risk
Hazard Function

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News releases from National Institute of Allergy and Infectious Diseases (NIAID): Phase 3 clinical trial of investigational vaccine for COVID-19 begins. *Multi-site trial to test candidate developed by Moderna and NIH.*

Clinical Trials

Showing: 1-10 of **1,997** studies 10 studies per page

Find in Table: Show/Hide Columns

TrialID	Public title	Date registration	Source Register	web address	Recruitment Status
ISRCTN60069084	Effect of N-acetylcysteine on COVID-19 treatment	19/07/2020	ISRCTN	http://isrctn.com/ISRCTN60069084	Recruiting
ChiCTR2000034798	Clinical features and prognostic factors for patients admitted for COVID-19 pneumonia	2020-07-19	ChiCTR	http://www.chictr.org.cn/showproj.aspx?proj=55616	Not Recruiting
ChiCTR2000034796	the efficacy and safety of heparin in the treatment of novel coronavirus pneumonia (COVID-19): a prospective, randomized, controlled trial	2020-07-19	ChiCTR	http://www.chictr.org.cn/showproj.aspx?proj=55775	Recruiting
ChiCTR2000034795	The therapeutic efficacy of Xuan-Fei Bai-Du decoction in the treatment of novel coronavirus pneumonia (COVID-19): a pilot randomized controlled trial	2020-07-19	ChiCTR	http://www.chictr.org.cn/showproj.aspx?proj=56756	Not Recruiting
ChiCTR2000034794	Sancai granule improves lung and kidney function for patient with novel coronavirus pneumonia (COVID-19) in the recovery period: a randomized, parallel controlled trial	2020-07-19	ChiCTR	http://www.chictr.org.cn/showproj.aspx?proj=56771	Recruiting
ChiCTR2000034784	Management of acute respiratory failure due to Sars CoV2 with non invasive ventilatory support: a medical records based study	2020-07-19	ChiCTR	http://www.chictr.org.cn/showproj.aspx?proj=55391	Not Recruiting
ChiCTR2000034781	A follow-up study of long-term prognosis in patients with severe novel coronavirus pneumonia (COVID-19)	2020-07-18	ChiCTR	http://www.chictr.org.cn/showproj.aspx?proj=56642	Recruiting

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https://clinicaltrials.gov/ct2/who_table

Systematic Reviews

General characteristics

- Research question operationalized using PICOTS
- Intervention must be clearly defined
- Outcomes standardised (eventually divided into primary vs secondary)
- Searches made in ≥ 3 databases
- Study designs should ideally be identical (sometimes not feasible
- Extracted studies analysed and appraised for quality and risk of bias
- Results may be synthesized narratively and in tabular form

One example (rapid review)

- Ovid MEDLINE, Embase, CINAHL and the WHO Global Index Medicus.
- “As randomization of quarantine is unethical and not feasible for the diseases in question, we considered non-randomized studies of interventions to be the best potentially available empirical evidence…. we also included modelling studies, because, we did not yet expect empirical studies to be available.” Cohort studies, Case-control studies, time series, Interrupted time series, Case series, Mathematical modelling studies

Nussbaumer-Streit et al. Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review. Cochrane Database of Systematic Reviews 2020, Issue 4. Art. No.: CD013574.

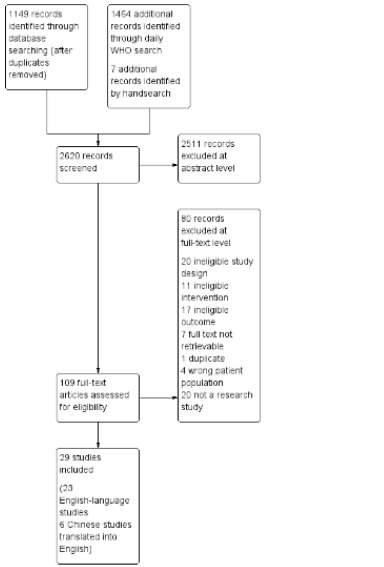
Systematic Reviews

Table 2. Certainty of evidence ratings for the effectiveness of quarantine for individuals who were in contact with a confirmed COVID-19 case

Outcome	Number of studies	Risk of bias	Indirectness	Imprecision	Inconsistency	Other considerations	Summary effect size/outcome	Certainty of the evidence
Incidence	4 modelling studies (Cao 2020; Hsieh 2007; Rocklov 2020; Tang 2020)	Very serious[a]	Direct	Precise	Consistent	None	**COVID-19** Cao 2020 simulated the effect of loosening quarantine measures that are already in place. They concluded that if 40% fewer people were quarantined (e.g. because of less strict follow-ups of contacts), the peak number of cases would increase twofold compared to keeping a full quarantine in place. Rocklov 2020 estimated that isolation and quarantine prevented 2307 (67%) cases and lowered the reproduction number to 1.78 during the COVID-19 outbreak on the Diamond Princess cruise ship. Tang 2020 estimated that without any measures, the number of confirmed COVID-19 cases in Wuhan would be 7723 by the end of January 2020. They estimated that reduced contact by 50% could decrease the number of confirmed COVID-19 cases from 7723 to 4335 (44% reduction); reduced contact by 90% to 2731 (65% reduction). **SARS** Hsieh 2007 state that quarantine is effective to reduce incident cases (461 SARS cases (81%) averted, with a low quarantine rate of 0.047 that equals quarantining 1 out of 21 people that should be quarantined)	Low
Onward transmission	No evidence							
Mortality	2 modelling studies (Ferguson 2020; Hsieh 2007)	Very serious[a]	Direct	Precise	Consistent	None	**COVID-19** Ferguson 2020 estimated that for a timeframe of 3 months, case isolation and household quarantine would decrease deaths in the UK by 31%–34%.	Low

Cochrane Library — Trusted evidence. Informed decisions. Better health. — Cochrane Database of Systematic Reviews

Figure 2. Study flow diagram



Author and year	Bias due to confounding	Bias in selection of participants into the study	Bias in classification of interventions	Bias due to deviations from intended interventions	Bias due to missing data	Bias in measurement of outcomes	Bias in selection of the reported result	Overall risk of bias
Hsieh 2005	Moderate	Low	Low	Low	Moderate	Moderate	Low	Moderate
Pang 2003	Moderate	Low	Low	Low	Moderate	Moderate	Low	Moderate
Park 2020	Serious	Low	Low	Low	Moderate	Moderate	Low	Serious
Wang 2007	Moderate	Low	Low	Low	Moderate	Moderate	Low	Moderate

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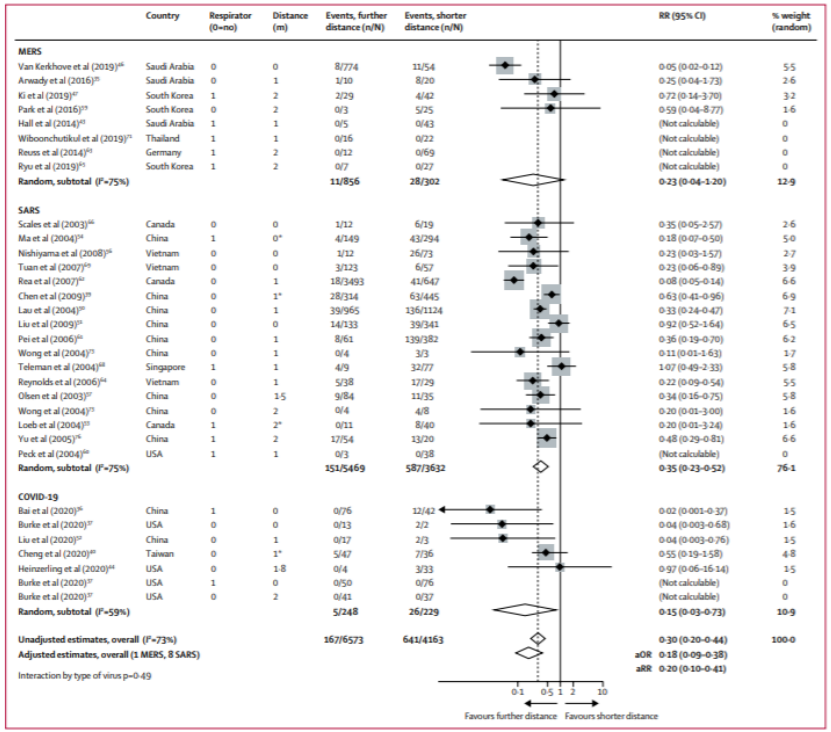
Nussbaumer-Streit et al. Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review. Cochrane Database of Systematic Reviews 2020, Issue 4. Art. No.: CD013574.

Meta-analysis



	Country	Respirator (0=no)	Distance (m)	Events, further distance (n/N)	Events, shorter distance (n/N)	RR (95% CI)	% weight (random)
MERS							
Van Kerkhove et al (2019)[46]	Saudi Arabia	0	0	8/774	11/54	0·05 (0·02–0·12)	5·5
Arwady et al (2016)[25]	Saudi Arabia	0	1	1/10	8/20	0·25 (0·04–1·73)	2·6
Ki et al (2019)[47]	South Korea	1	2	2/29	4/42	0·72 (0·14–3·70)	3·2
Park et al (2016)[23]	South Korea	0	2	0/3	5/25	0·59 (0·04–8·77)	1·6
Hall et al (2014)[45]	Saudi Arabia	1	1	0/5	0/43	(Not calculable)	0
Wiboonchutikul et al (2019)[21]	Thailand	1	1	0/16	0/22	(Not calculable)	0
Reuss et al (2014)[61]	Germany	1	2	0/12	0/69	(Not calculable)	0
Ryu et al (2019)[24]	South Korea	1	2	0/7	0/27	(Not calculable)	0
Random, subtotal (I²=75%)				**11/856**	**28/302**	**0·23 (0·04–1·20)**	**12·9**
SARS							
Scales et al (2003)[44]	Canada	0	0	1/12	6/19	0·35 (0·05–2·57)	2·6
Ma et al (2004)[39]	China	1	0*	4/149	43/294	0·18 (0·07–0·50)	5·0
Nishiyama et al (2008)[26]	Vietnam	0	0	1/12	26/73	0·23 (0·03–1·57)	2·7
Tuan et al (2007)[43]	Vietnam	0	0	3/123	6/57	0·23 (0·06–0·89)	3·9
Rea et al (2007)[42]	Canada	0	1	18/3493	41/647	0·08 (0·05–0·14)	6·6
Chen et al (2009)[29]	China	0	1*	28/314	63/445	0·63 (0·41–0·96)	6·9
Lau et al (2004)[28]	China	0	1	39/965	136/1124	0·33 (0·24–0·47)	7·1
Liu et al (2009)[31]	China	0	0	14/133	39/341	0·92 (0·52–1·64)	6·5
Pei et al (2006)[60]	China	0	1	8/61	139/382	0·36 (0·19–0·70)	6·2
Wong et al (2004)[33]	China	0	1	0/4	3/3	0·11 (0·01–1·63)	1·7
Teleman et al (2004)[62]	Singapore	1	1	4/9	32/77	1·07 (0·49–2·33)	5·8
Reynolds et al (2006)[64]	Vietnam	0	1	5/38	17/29	0·22 (0·09–0·54)	5·5
Olsen et al (2003)[37]	China	0	1·5	9/84	11/35	0·34 (0·16–0·75)	5·8
Wong et al (2004)[33]	China	0	2	0/4	4/8	0·20 (0·01–3·00)	1·6
Loeb et al (2004)[63]	Canada	1	2*	0/11	8/40	0·20 (0·01–3·24)	1·6
Yu et al (2005)[36]	China	1	2	17/54	13/20	0·48 (0·29–0·81)	6·6
Peck et al (2004)[40]	USA	1	1	0/3	0/38	(Not calculable)	0
Random, subtotal (I²=75%)				**151/5469**	**587/3632**	**0·35 (0·23–0·52)**	**76·1**
COVID-19							
Bai et al (2020)[35]	China	1	0	0/76	12/42	0·02 (0·001–0·37)	1·5
Burke et al (2020)[27]	USA	0	0	0/13	2/2	0·04 (0·003–0·68)	1·6
Liu et al (2020)[32]	China	0	1	0/17	2/3	0·04 (0·003–0·76)	1·5
Cheng et al (2020)[49]	Taiwan	0	1*	5/47	7/36	0·55 (0·19–1·58)	4·8
Heinzerling et al (2020)[54]	USA	0	1·8	0/4	3/33	0·97 (0·06–16·14)	1·5
Burke et al (2020)[27]	USA	1	0	0/50	0/76	(Not calculable)	0
Burke et al (2020)[27]	USA	0	2	0/41	0/37	(Not calculable)	0
Random, subtotal (I²=59%)				**5/248**	**26/229**	**0·15 (0·03–0·73)**	**10·9**
Unadjusted estimates, overall (I²=73%)				**167/6573**	**641/4163**	**0·30 (0·20–0·44)**	**100·0**
Adjusted estimates, overall (1 MERS, 8 SARS)						**aOR 0·18 (0·09–0·38)**	
						aRR 0·20 (0·10–0·41)	
Interaction by type of virus p=0·49							

0·1 0·5 1 2 10

Favours further distance Favours shorter distance

Figure 2: **Forest plot showing the association of COVID-19, SARS, or MERS exposure proximity with infection**
SARS=severe acute respiratory syndrome. MERS=Middle East respiratory syndrome. RR=relative risk. aOR=adjusted odds ratio. aRR=adjusted relative risk. *Estimated values; sensitivity analyses excluding these values did not meaningfully alter findings.

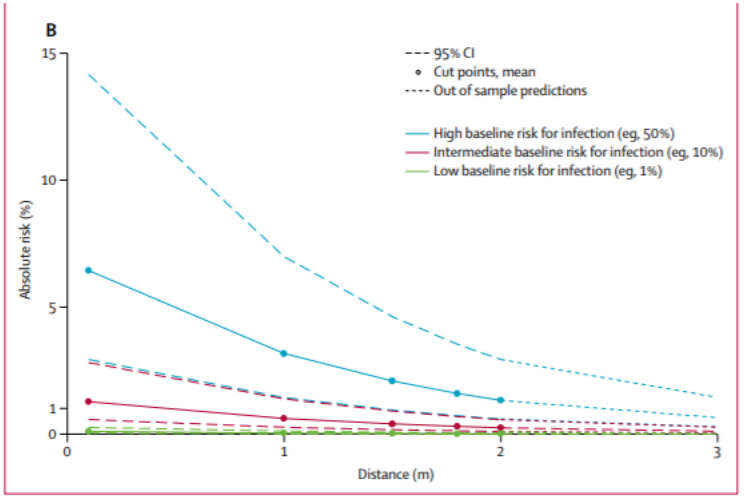


Figure 3: **Change in relative risk with increasing distance and absolute risk with increasing distance**
Meta-regression of change in relative risk with increasing distance from an infected individual (A). Absolute risk of transmission from an individual infected with SARS-CoV-2, SARS-CoV, or MERS-CoV with varying baseline risk and increasing distance (B). SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. SARS-CoV=severe acute respiratory syndrome coronavirus. MERS-CoV=Middle East respiratory syndrome coronavirus.

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Chu et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. Lancet 2020; 395:1973–87

Meta-analysis

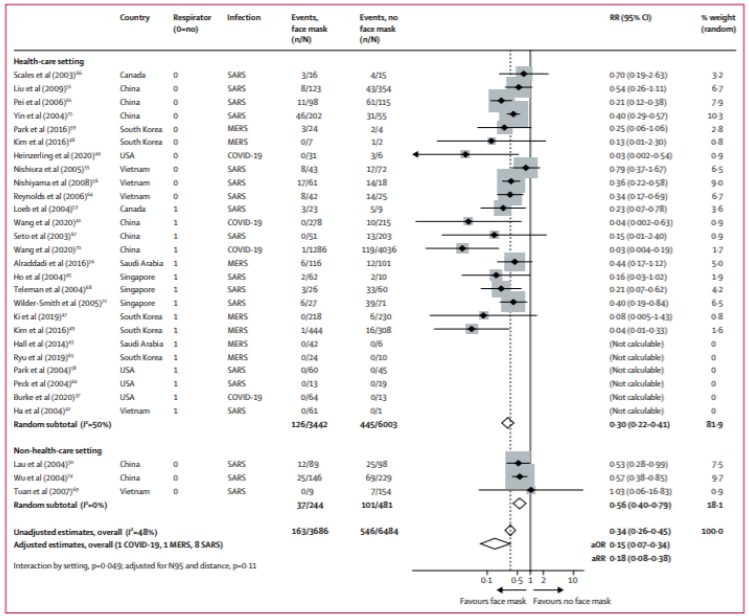

Figure 4: Forest plot showing unadjusted estimates for the association of face mask use with viral infection causing COVID-19, SARS, or MERS
SARS=severe acute respiratory syndrome. MERS=Middle East respiratory syndrome. RR=relative risk. aOR=adjusted odds ratio. aRR=adjusted relative risk.

	Studies and participants	Relative effect (95% CI)	Anticipated absolute effect (95% CI), eg, chance of viral infection or transmission		Difference (95% CI)	Certainty*	What happens (standardised GRADE terminology)[39]
			Comparison group	Intervention group			
Physical distance ≥1 m vs <1 m	Nine adjusted studies (n=7782); 29 unadjusted studies (n=10 736)	aOR 0·18 (0·09 to 0·38); unadjusted RR 0·30 (95% CI 0·20 to 0·44)	Shorter distance, 12·8%	Further distance, 2·6% (1·3 to 5·3)	−10·2% (−11·5 to −7·5)	Moderate†	A physical distance of more than 1 m probably results in a large reduction in virus infection; for every 1 m further away in distancing, the relative effect might increase 2·02 times
Face mask vs no face mask	Ten adjusted studies (n=2647); 29 unadjusted studies (n=10 170)	aOR 0·15 (0·07 to 0·34); unadjusted RR 0·34 (95% CI 0·26 to 0·45)	No face mask, 17·4%	Face mask, 3·1% (1·5 to 6·7)	−14·3% (−15·9 to −10·7)	Low‡	Medical or surgical face masks might result in a large reduction in virus infection; N95 respirators might be associated with a larger reduction in risk compared with surgical or similar masks§
Eye protection (faceshield, goggles) vs no eye protection	13 unadjusted studies (n=3713)	Unadjusted RR 0·34 (0·22 to 0·52)¶	No eye protection, 16·0%	Eye protection, 5·5% (3·6 to 8·5)	−10·6% (−12·5 to −7·7)	Low‖	Eye protection might result in a large reduction in virus infection

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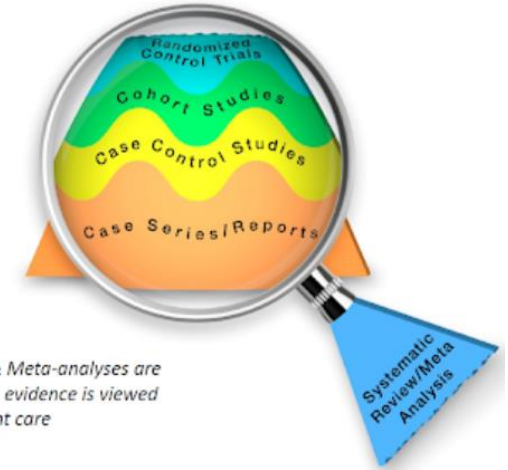
Chu et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. Lancet 2020; 395:1973–87

All studies have their place, as long as well conducted



Systematic reviews & Meta-analyses are a lens through which evidence is viewed and applied to patient care

Speaker 2

Fernanda Stumpf Tonin, PhD

- HEOR Consultant
- Researcher, *Federal University of Paraná, Brazil*
- Vice-chair, *FIP Pharmacy Practice Research SIG*
- Member of the Editorial Board, *Pharmacy Practice*

Email: ffstonin@gmail.com

@StumpfTonin

Critical appraisal of evidence

To effectively practice as an evidence-based practice provider

Suboptimal research

27% of publications are redundant

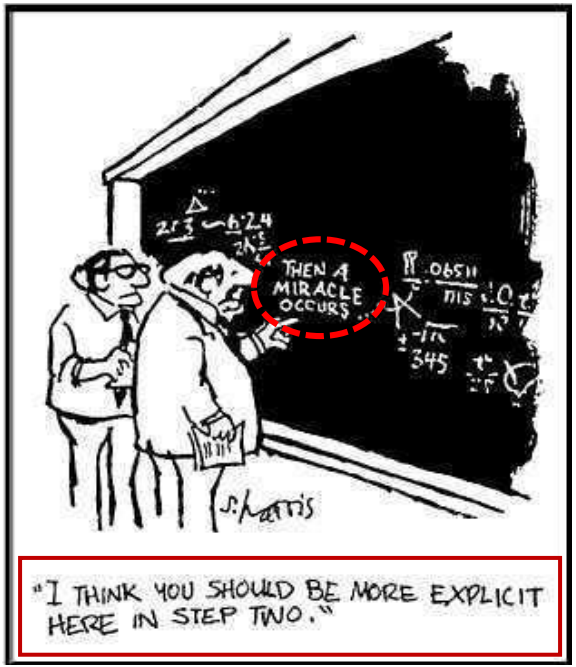
20% have methodological flaws

20% are unpublished

17% are decent but not useful

13% misleading conclusions

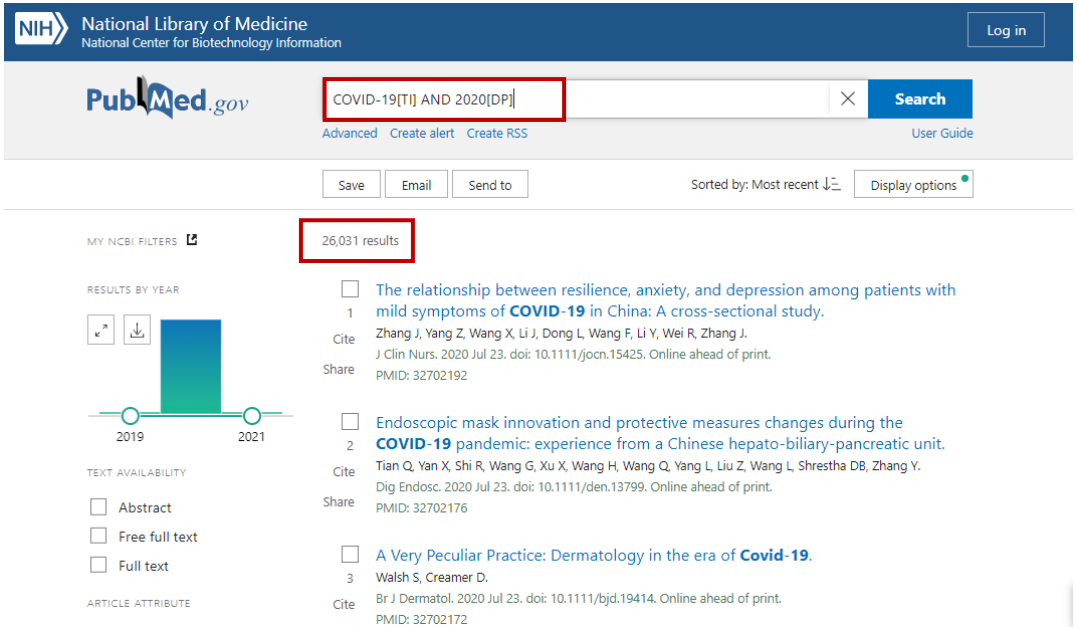
3% have a scientific/clinical meaning



Ioannidis JP. The Milbank quarterly. 2016;94(3):485-514

Critical appraisal of evidence

COVID-19 era: increasing value, reducing waste



- To know where to find information
- To be able to identify, select and appraise the best and most up-to-date evidence
- To integrate these findings with your own clinical experience and patients' values

Critical appraisal of evidence

COVID-19 era: where to find evidence

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Purpose of critical appraisal

Supporting decision-making

- ***Critical appraisal:*** process of systematically assessing the outcome of scientific research (evidence) to judge its **trustworthiness**, **value** and **relevance** in each scenario

- Aims to evaluate the level and quality of evidence to **support decision-making**
  - ✓ How certain are we about the results? (validity)
  - ✓ How applicable are the results to practice? (applicability, translational capacity)

- **Critical appraisal is essential to:**
  - Combat information overload
  - Identify papers that are clinically relevant
  - Continuing professional development

Carrying out critical appraisal – basic steps:

- ✓ Carefully read the study
- ✓ Define study design – evaluate research methods
- ✓ Check minimum standards conduction/reporting (checklists)
- ✓ Address quality, validity of results and compare to other studies

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Sackett DL et al. Evidence based medicine: what it is and what it isn't. BMJ. 1996;312(7023):71–72
MacInnes A, Lamont T. Critical appraisal of a research paper. Scott Uni Med J. 2014;3(1):10–17
Burls A. What is critical appraisal? London: Hayward Medical Communications. 2016

Conducting and reporting studies

Overall recommendations

equator network

Enhancing the QUAlity and Transparency Of health Research

EQUATOR resources in German | Portuguese | Spanish

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Your one-stop-shop for writing and publishing high-impact health research

find reporting guidelines | improve your writing | join our courses | run your own training course | enhance your peer review | implement guidelines

Library for health research reporting

The Library contains a comprehensive searchable database of reporting guidelines and also links to other resources relevant to research reporting.

- Search for reporting guidelines
- Not sure which reporting guideline to use?
- Reporting guidelines under development
- Visit the library for more resources

Reporting guidelines for main study types

Randomised trials	CONSORT	Extensions
Observational studies	STROBE	Extensions
Systematic reviews	PRISMA	Extensions
Study protocols	SPIRIT	PRISMA-P
Diagnostic/prognostic studies	STARD	TRIPOD
Case reports	CARE	Extensions
Clinical practice guidelines	AGREE	RIGHT
Qualitative research	SRQR	COREQ
Animal pre-clinical studies	ARRIVE	
Quality improvement studies	SQUIRE	
Economic evaluations	CHEERS	

The EQUATOR Network

- International initiative
- Improve the reliability and value of published health research literature
- Transparent and accurate reporting
- Wider use of robust reporting guidelines

Critical appraisal of evidence

Basic steps

Some initial appraisal questions include:

1. Is the evidence from a known, reputable source?
2. Has the evidence been evaluated in any way? If so, how and by whom?
3. How up-to-date is the evidence?
4. Were all important outcomes considered? How were they measured?
5. Is that a reliable way to measure?
6. How large was the effect size?
7. What implications does the study have for your practice? Is it relevant?
8. Can the results be applied into practice (benefit-risk ratio)?
9. Are the benefits worth the costs and potential risks?

Sackett DL et al. Evidence based medicine: what it is and what it isn't. BMJ. 1996;312(7023):71–72
MacInnes A, Lamont T. Critical appraisal of a research paper. Scott Uni Med J. 2014;3(1):10–17
Burls A. What is critical appraisal? London: Hayward Medical Communications. 2016

Review > Int J Antimicrob Agents. 2020 Jul 17;106101. doi: 10.1016/j.ijantimicag.2020.106101.
Online ahead of print.

Chloroquine and Hydroxychloroquine in Coronavirus Disease 2019 (COVID-19). Facts, Fiction & the Hype. A Critical Appraisal

Mohammad Sultan Khuroo [1], Ahmad A Sofi [2], Mohammad Khuroo [3]

Affiliations + expand

PMID: 32687949 PMCID: PMC7366996 DOI: 10.1016/j.ijantimicag.2020.106101
Free PMC article

Abstract

The coronavirus infection (COVID-19) has turned in to a global catastrophe and there is an intense search for effective drug therapy. Of all the potential therapies, chloroquine and hydroxychloroquine have been the focus of tremendous public attention. Both drugs have been used in the treatment and prophylaxis of malaria and long-term use of hydroxychloroquine is the cornerstone in the treatment of several auto-immune disorders. There is convincing evidence that hydroxychloroquine has strong in vitro antiviral activity against SARS-CoV-2. Few small uncontrolled trials and several anecdotal reports have shown conflicting results of such drug therapy in COVID-19. However, as of today, the results of large scale randomized controlled trials are not available. Despite the lack of such evidence, hydroxychloroquine is used as a desperate attempt for prophylaxis and treatment of COVID-19. The drug has wide-ranging drug interactions and potential cardiotoxicity. Indiscriminate unsupervised use can expose the public to serious adverse drug effects.

Keywords: COVID-19; Chloroquine; Coronavirus; Hydroxychloroquine; Pandemic; SARS-CoV-2.

Review > J Neuroimmune Pharmacol. 2020 Jun 9;1-9. doi: 10.1007/s11481-020-09930-x.
Online ahead of print.

Does Adding of Hydroxychloroquine to the Standard Care Provide any Benefit in Reducing the Mortality among COVID-19 Patients?: a Systematic Review

Tejas K Patel [1], Manish Barvaliya [2], Bhavesh D Kevadiya [3], Parvati B Patel [4], Hira Lal Bhalla [5]

Affiliations + expand

PMID: 32519281 PMCID: PMC7280684 DOI: 10.1007/s11481-020-09930-x
Free PMC article

Abstract

Hydroxychloroquine has been promoted for its use in treatment of COVID-19 patients based on in-vitro evidences. We searched the databases to include randomized and observational studies evaluating the effect of Hydroxychloroquine on mortality in COVID-19 patients. The outcome was summarized as odds ratios (OR) with a 95% confidence interval (CI).We used the inverse-variance method with a random effect model and assessed the heterogeneity using I^2 test. We used ROBINS-I tool to assess methodological quality of the included studies. We performed the meta-analysis using 'Review manager software version 5.3'. We identified 6 observationalstudies satisfying the selection criteria. In all studies, Hydroxychloroquine was given as add on to the standard care and effect was compared with the standard care alone. A pooled analysis observed 251 deaths in 1331 participants of the Hydroxychloroquine arm and 363 deaths in 1577 participants of the control arm. There was no difference in odds of mortality events amongst Hydroxychloroquine and supportive care arm [1.25 (95% CI: 0.65, 2.38); I^2 = 80%]. A similar trend was observed with moderate risk of bias studies [0.95 (95% CI: 0.44, 2.06); I^2 = 85%]. The odds of mortality were significantly higher in patients treated with Hydroxychloroquine + Azithromycin than supportive care alone [2.34 (95% CI: 1.63, 3.34); I^2 = 0%]. A pooled analysis of recently published studies suggests no additional benefit for reducing mortality in COVID-19 patients when Hydroxychloroquine is given as add-on to the standard care. Graphical Abstract.

Systematic review and meta-analysis

COVID-19 evidence

Meta-Analysis › CMAJ. 2020 Jul 6;192(27):E734-E744. doi: 10.1503/cmaj.200647. Epub 2020 Jun 3.

Efficacy and safety of antiviral treatment for COVID-19 from evidence in studies of SARS-CoV-2 and other acute viral infections: a systematic review and meta-analysis

Wei Liu [1], Pengxiang Zhou [1], Ken Chen [1], Zhikang Ye [1], Fang Liu [1], Xiaotong Li [1], Na He [1], Ziyang Wu [1], Qi Zhang [1], Xuepeng Gong [1], Qiyu Tang [1], Xin Du [1], Yingqiu Ying [1], Xiaohan Xu [1], Yahui Zhang [1], Jinyu Liu [1], Yun Li [1], Ning Shen [1], Rachel J Couban [1], Quazi I Ibrahim [1], Gordon Guyatt [1], Suodi Zhai [2]

Affiliations + expand

PMID: 32493740 DOI: 10.1503/cmaj.200647

› Am J Infect Control. 2020 Jul 10;S0196-6553(20)30693-3. doi: 10.1016/j.ajic.2020.07.011. Online ahead of print.

Systematic review with meta-analysis of the accuracy of diagnostic tests for COVID-19

Beatriz Böger [1], Mariana M Fachi [2], Raquel O Vilhena [3], Alexandre de Fátima Cobre [4], Fernanda S Tonin [5], Roberto Pontarolo [6]

Affiliations + expand

PMID: 32659413 PMCID: PMC7350782 DOI: 10.1016/j.ajic.2020.07.011

Meta-Analysis › Lancet. 2020 Jun 27;395(10242):1973-1987. doi: 10.1016/S0140-6736(20)31142-9. Epub 2020 Jun 1.

Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis

Derek K Chu [1], Elie A Akl [2], Stephanie Duda [3], Karla Solo [3], Sally Yaacoub [4], Holger J Schünemann [5], COVID-19 Systematic Urgent Review Group Effort (SURGE) study authors

Collaborators, Affiliations + expand

PMID: 32497510 PMCID: PMC7263814 DOI: 10.1016/S0140-6736(20)31142-9

› Rev Assoc Med Bras (1992). 2020 Jun;66(6):771-777. doi: 10.1590/1806-9282.66.6.771. Epub 2020 Jul 20.

Effects of four types of integrated Chinese and Western medicines for the treatment of COVID-19 in China: a network meta-analysis

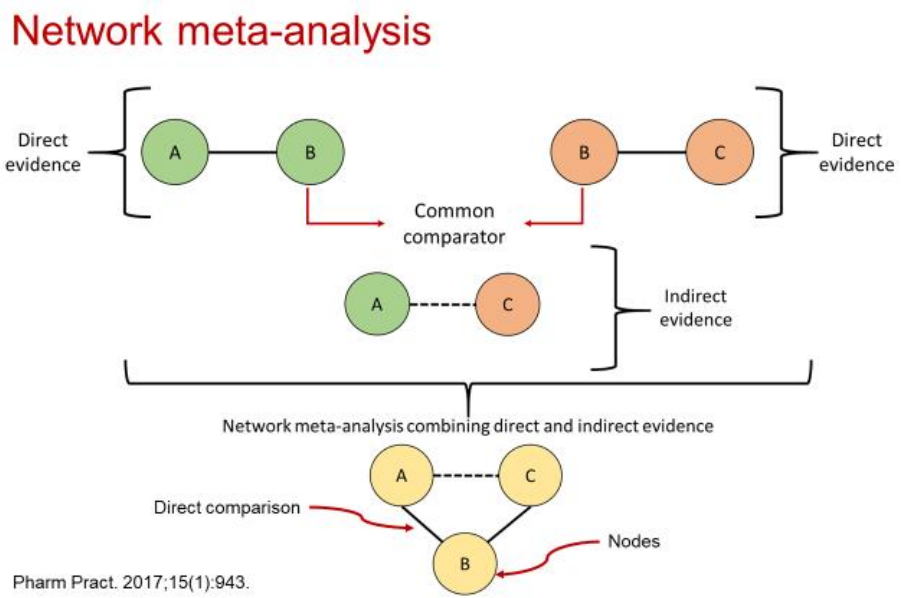
Lairun Jin [1], Yan Xu [1], Hui Yuan [2]

Affiliations + expand

PMID: 32696884 DOI: 10.1590/1806-9282.66.6.771

Systematic review and meta-analysis

COVID-19 evidence



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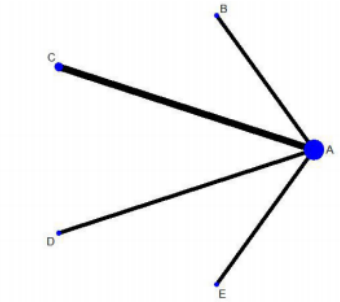
Rev Assoc Med Bras (1992). 2020 Jun;66(6):771-777



Network plot: multiple comparisons of interventions

Ranking analysis

Treatment	SUCRA	Pr Best	Mean rank
A	0.0	0.0	4.9
B	50.5	1.2	3.0
C	28.8	0.1	3.8
D	85.7	54.0	1.6
E	82.1	44.7	1.7

Notes: A, Symptomatic and supportive care; B, Symptomatic and supportive care + Qingfei Touxie Fuzheng Recipe; C, Symptomatic and supportive care + Lianhua Qingwen Granule; D, Symptomatic and supportive care + Lianhua Qingke Granule; E, Symptomatic and supportive care + Xuebijing Injection.

GRADE

Grading of Recommendations Assessment, Development and Evaluation

- Provides a transparent and structured approach to making **judgments** about the certainty of the evidence
- Offers a transparent process to **making recommendations and decisions**
- Currently used by over 100 organizations globally, including the World Health Organization
- Ideally applied to rate the certainty of a body of evidence in a well-conducted and up-to-date evidence synthesis (e.g. setting, population, intervention, comparator, outcomes) with summary tables
- Although appropriately sophisticated in its full execution, it can answer questions and be relayed to decision-makers by breaking its components down into straightforward questions about:
    - the certainty of evidence
    - the criteria for making decisions or recommendations

GRADE

Grading of Recommendations Assessment, Development and Evaluation

Box 3: Definitions of grades of evidence

High = Further research is unlikely to change our confidence in the estimate of effect.
Moderate = Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low = Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low = Any estimate of effect is very uncertain.

- Study Design
- Quality
- Inconsistency
- Indirectness
- Imprecision
- Other factors

Box 2: Criteria for assigning grade of evidence

Type of evidence
Randomised trial = high
Observational study = low
Any other evidence = very low

Decrease grade if:
- Serious (−1) or very serious (−2) limitation to study quality
- Important inconsistency (−1)
- Some (−1) or major (−2) uncertainty about directness
- Imprecise or sparse data (−1)
- High probability of reporting bias (−1)

Increase grade if:
- Strong evidence of association—significant relative risk of >2 (<0.5) based on consistent evidence from two or more observational studies, with no plausible confounders (+1)[46]
- Very strong evidence of association—significant relative risk of >5 (<0.2) based on direct evidence with no major threats to validity (+2)[46]
- Evidence of a dose response gradient (+1)
- All plausible confounders would have reduced the effect (+1)

Quality of a body of evidence
High (four plus: ⊕⊕⊕⊕)
Moderate (three plus: ⊕⊕⊕◯)
Low (two plus: ⊕⊕◯◯)
Very low (one plus: ⊕◯◯◯)

Guide recommendations

Strong/Weak
Favors/Against

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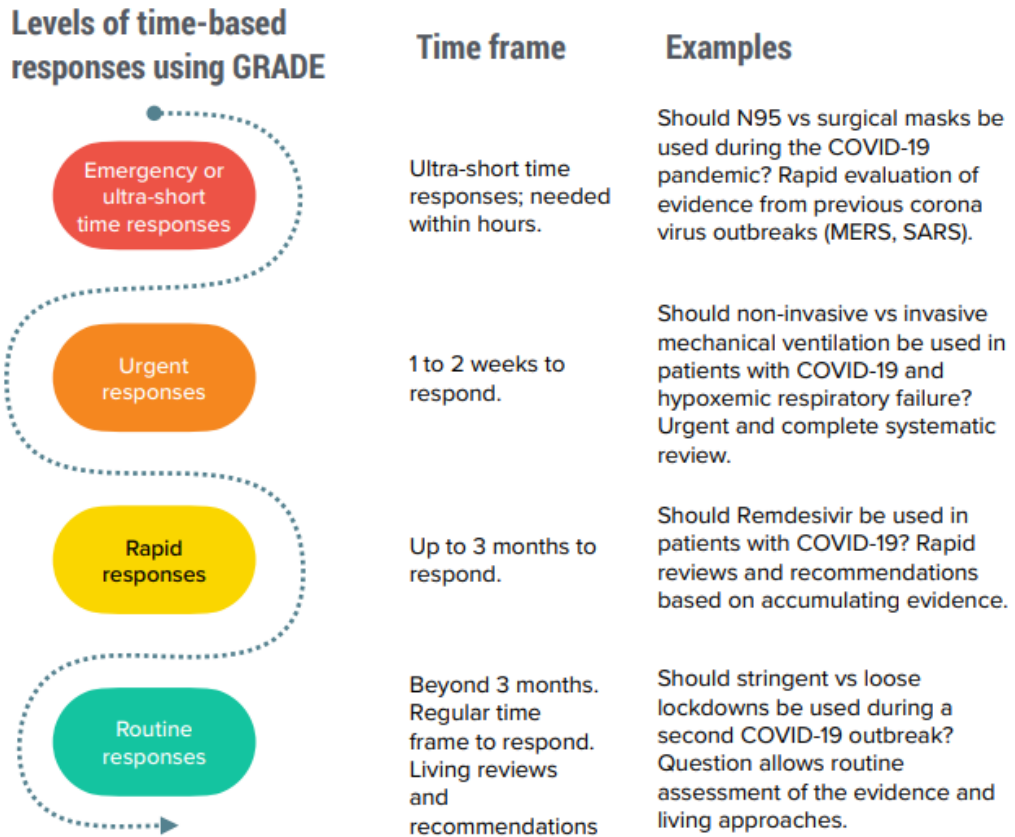
www.gradeworkinggroup.org

J Clin Epidemiol. 2020 Jun 6
doi: 10.1016/j.jclinepi.2020.05.030 [Epub ahead of print]
PMCID: PMC7274969
PMID: 32512187

Using GRADE in situations of emergencies and urgencies: Certainty in evidence and recommendations matters during the COVID-19 pandemic, now more than ever and no matter what

Holger J. Schünemann,[1,2,*] Nancy Santesso,[1] Gunn E. Vist,[3] Carlos Cuello,[1] Tamara Lotfi,[1] Signe Flottorp,[3] Marina Davoli,[4] Reem Mustafa,[5] Joerg J. Meerpohl,[6] Pablo Alonso-Coello,[7] and Elie A. Akl[8]

- In situations of emergencies and urgencies, such as the COVID-19 pandemic, GRADE can similarly be used to express and convey certainty in intervention effects, test accuracy, risk and prognostic factors, consequences of public health measures, and qualitative bodies of evidence
- Requirements for emergency, urgency, rapid and routine GRADE assessment may differ but should transition from one to another



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Schünemann HJ et al. J Clin Epidemiol. 2020 Jun 5:S0895-4356(20)30425-X

Implications & Take-home messages

To effectively practice as an evidence-based practice provider

- We should get used to always evaluate the provenance and quality of information
- Critical appraisal looks at the way a study is conducted and evaluates factors such as internal validity, generalizability and relevance
- Evidence and recommendations generation need high quality studies (data confidence)
- Decisions related to patient value and care are carefully made following an essential process of integration of the best existing evidence, clinical experience and patient preference
- GRADEing the certainty of the available evidence is more important than ever because of the unprecedented pressure for action and the large number of people affected by decisions

Speaker 3

Dalia Dawoud, PhD

Associate Editor,

Pharmacoeconomics and Outcomes Research,

Research in Social and Administrative Pharmacy (RSAP) and Value in Health, Elsevier, UK

&

Associate Professor,

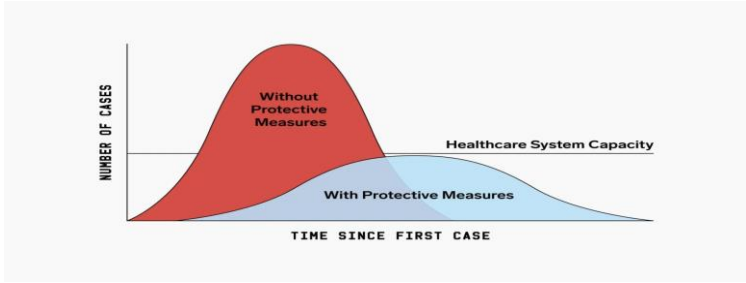
Faculty of Pharmacy, Cairo University, Egypt

Email: ddawoud@hotmail.com @drddawoud

Economic Evidence: The Missing Piece

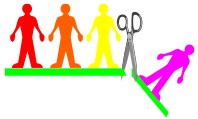
Why?

- No health care system in the world can provide every effective intervention. **Resources** are **limited** and **wants** are **limitless** (**Scarcity**)



https://antiwarwarvet.com/flattening-the-curve/

- If you provide more of one service, you will have to provide less of another. (**Opportunity cost**)



- **Choices** and **trade-offs** must be made.

Articles

The impact of the COVID-19 pandemic on cancer deaths due to delays in diagnosis in England, UK: a national, population-based, modelling study

Camille Maringe, James Spicer, Melanie Morris, Arnie Purushotham, Ellen Nolte, Richard Sullivan, Bernard Rachet*, Ajay Aggarwal*

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Economic Evidence: The Missing Piece

How?

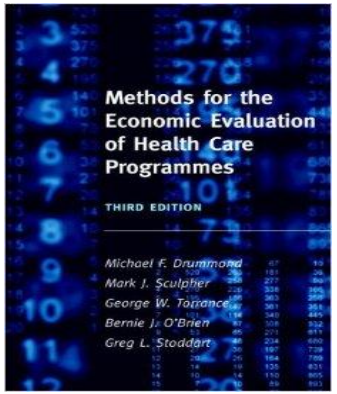
Health economics utilises economic analysis methods to inform decision making regarding the allocation of the scarce resources available by identifying interventions that most likely to provide the best value for every £/$/€ spent (i.e. cost-effective)

Economic Evidence: The Missing Piece

How?

Economic Evaluation:

"**The comparative analysis of alternative courses of action in terms of both their costs and consequences**." (Drummond et al. 2015)



- The type of an economic evaluation is largely determined by:
  - *The nature and measure of the outcomes considered*
  - *The presence of evidence (or assumptions made) regarding (non-) equivalence of outcomes*
  - *How the analysis results are presented*

Economic Evidence: The Missing Piece

How?

- **Cost-consequences analysis (CCA)**
  - *Includes all outcomes*
  - *Reports costs and outcomes separately*
- **Cost-effectiveness analysis (CEA)**
  - *Focuses on one primary outcome*
  - *Disease specific expressed in natural units (e.g. number of strokes avoided)*
- **Cost-utility analysis (CUA)**
  - *Focuses on one primary outcome*
  - *Generis outcome e.g. Quality Adjusted Life Years (QALYs) or Disability Adjusted Life Years (DALYs)*
- **Cost-benefit analysis (CBA)**
  - *Measures both benefits and costs in monetary terms*

1. Are both costs (inputs) and consequences (outputs) examined?

2. Are at least 2 alternatives compared?

	NO		YES
	Examines only consequences	**Examines only costs**	
NO	**1A PARTIAL EVALUATION** • Outcome description.	**1B PARTIAL EVALUATION** • Cost description.	**2 PARTIAL EVALUATION** • Cost-outcome description.
YES	**3A PARTIAL EVALUATION** • Efficacy or effectiveness evaluation.	**3B PARTIAL EVALUATION** • Cost analysis. • Cost-minimisation analysis.	**4 FULL ECONOMIC EVALUATION** • Cost consequences analysis • Cost-effectiveness analysis. • Cost-utility analysis. • Cost-benefit analysis.

Drummond et al. 2015

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Economic Evidence: The Missing Piece

When?

- **Economic Evaluation** is most useful after the following:
  - ***Efficacy studies:*** *which aim to answer the question* ***"Can the intervention work?***
  - ***Safety studies****: which aim to answer the question* ***"Does it do more good than harm?"***
  - ***Effectiveness studies:*** *which answer the question* ***"Does the intervention work when applied?"***

The bottom line is that if an intervention is **not effective**, it is **not cost-effective**

Economic Evidence: The Missing Piece

Approaches

A. Alongside a clinical study

Collecting data on both costs and consequences simultaneously from a single study (mostly phase III RCT)

B. Using Economic Modelling

Mathematical simulation of the costs and consequences attached to using each alternative using data from various sources(e.g. Systematic reviews and meta-analysis, epidemiological studies, RCTs, observational studies)

The following are broadly the main steps of conducting a full economic evaluation:

1. *Identifying, measuring and valuing **outcomes***
2. *Identifying, measuring and valuing **costs***
3. *Combining **costs** and **outcomes***
4. *Assessing **uncertainty** and drawing conclusions to inform **decision-making***
5. *Optional: Assessing **Value of Information** to **inform future research investment***

Economic Evidence: The Missing Piece

Critical Appraisal

- Critical appraisal of published economic evaluation studies allows us to assess the **methodological quality** and **applicability** of these studies and their results to current clinical practice.

- The **Critical Appraisal Skills Program (CASP)** proposed a simple checklist to appraise published economic evaluations in terms of quality, usefulness and applicability

- This **checklist** prompts the reviewer to answer the following questions:
  - *Is the economic evaluation valid?*
  - *How were costs and consequences assessed and compared?*
  - *Will the results help in purchasing services for local people?*

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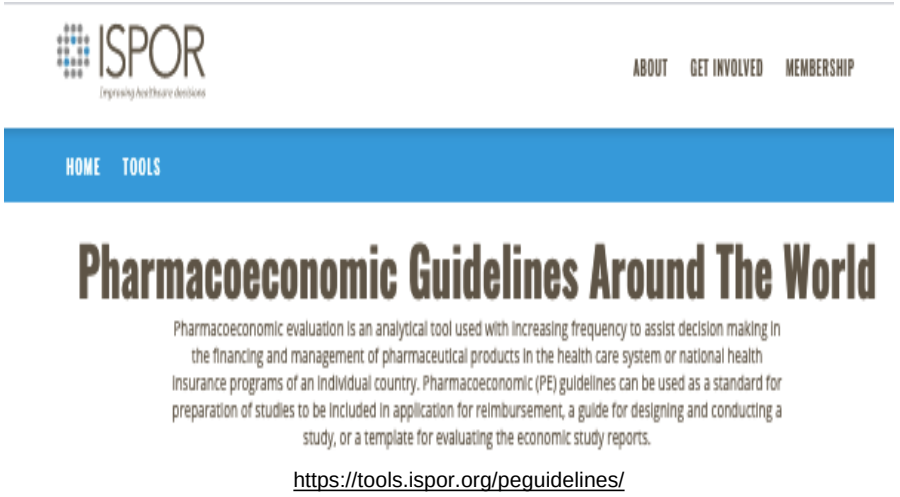
1.CASP Checklist for economic evaluation studies.http://media.wix.com/ugd/dded87_3b2bd5743feb4b1aaac6ebdd68771d3f.pdf

Economic Evidence: The Missing Piece

Critical Appraisal

- Guidelines for conducting economic evaluations also exist to provide a set of methodological standards that should be followed.
- These guidelines are usually proposed by the decision makers who are going to use the results of these studies in their decision making to ensure **applicability** of the results to their jurisdictions
  - *An example of these guidelines is the "Guide to the Methods of Technology Appraisal" published by NICE in April 2013.*[1]



1. NICE. Guide to the methods of technology appraisal 2013 https://www.nice.org.uk/article/pmg9/chapter/the-reference-case

Economic Evidence: The Missing Piece

Reporting Standards

- The **British Medical Journal, Value in Health, RSAP** and other peer-reviewed journals publishing economic evaluations adopted a 24 item “checklist” for reporting of economic evaluations developed by ISPOR Health Economic Evaluation Publication Guidelines Good Reporting Practices Task Force

VALUE IN HEALTH 16 (2013) 231–250

Available online at www.sciencedirect.com

SciVerse ScienceDirect

ELSEVIER

journal homepage: www.elsevier.com/locate/jval

ISPOR TASK FORCE REPORT

Consolidated Health Economic Evaluation Reporting Standards (CHEERS)—Explanation and Elaboration: A Report of the ISPOR Health Economic Evaluation Publication Guidelines Good Reporting Practices Task Force

Don Husereau, BScPharm, MSc[1,2,3,], Michael Drummond, PhD[4], Stavros Petrou, MPhil, PhD[5], Chris Carswell, MSc, MRPharmS[6], David Moher, PhD[7], Dan Greenberg, PhD[8,9], Federico Augustovski, MD, MSc, PhD[10,11], Andrew H. Briggs, MSc (York), MSc (Oxon), DPhil (Oxon)[12], Josephine Mauskopf, PhD[13], Elizabeth Loder, MD, MPH[14,15], on behalf of the ISPOR Health Economic Evaluation Publication Guidelines - CHEERS Good Reporting Practices Task Force*

[1]Institute of Health Economics, Edmonton, Canada; [2]Department of Epidemiology and Community Medicine. University of Ottawa, Ottawa, ON, Canada; [3]University for Health Sciences, Medical Informatics and Technology, Hall in Tirol, Austria; [4]Centre for Health Economics, University of York, Heslington, York, UK; [5]Warwick Medical School, University of Warwick, Coventry, UK; [6]Pharmacoeconomics, Adis International, Auckland, New Zealand; [7]Clinical Epidemiology Program, Ottawa Hospital Research Institute, Ottawa, ON, Canada; [8]Faculty of Health Sciences, Department of Health Systems Management, Ben-Gurion University of the Negev, Beer-Sheva, Israel; [9]Center for the Evaluation of Value and Risk in Health, Tufts Medical Center, Boston, MA, USA; [10]Health Economic Evaluation and Technology Assessment, Institute for Clinical Effectiveness and Health Policy (IECS), Buenos Aires, Argentina; [11]Universidad de Buenos Aires, Buenos Aires, Argentina; [12]Institute of Health & Wellbeing, University of Glasgow, Glasgow, Scotland; [13]RTI Health Solutions, Research Triangle Park, NC, USA; [14]Brigham and Women's/Faulkner Neurology, Faulkner Hospital, Boston, MA, USA; [15]Clinical Epidemiology Editor, BMJ, London, UK

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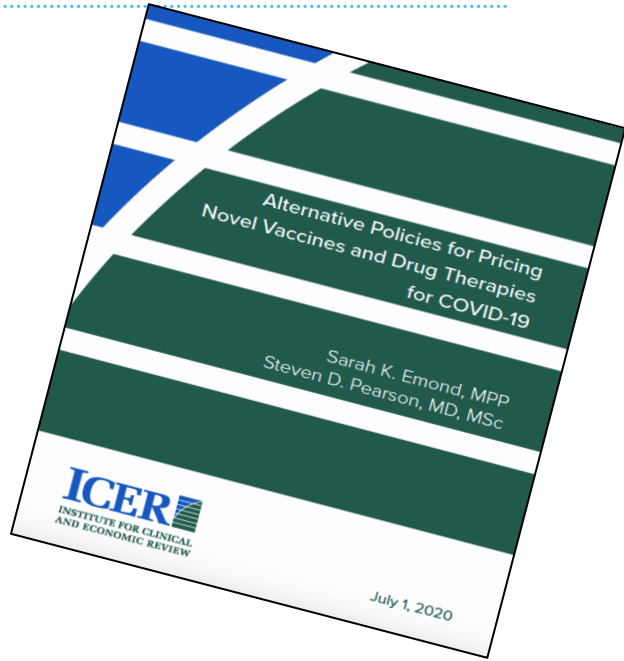
1. Husereau D. et al. (2013) ISPOR TASK FORCE REPORT Consolidated Health Economic Evaluation Reporting Standards (CHEERS)—Explanation and Elaboration: A Report of the ISPOR Health Economic Evaluation Publication Guidelines Good Reporting Practices Task Force. Value in Health. https://www.valueinhealthjournal.com/article/S1098-3015(13)00022-3/pdf

Economic Evidence: The Missing Piece

Examples

- No economic evaluation of COVID-19 related interventions or strategies published so far.
- One report from USA ICER used economic modeling to establish the value-based price benchmark of remdesivir using economic evaluation (CUA)
- But, a number identified in the literature focused on a large number of mitigation strategies used in previous outbreaks such as H1N1



https://icer-review.org/

Economic Evidence: The Missing Piece

Examples

- Screening
- Disease surveillance networks
- Contact tracing
- Face masks
- Hand washing
- Social distancing
- Self-isolation
- Antiviral prophylaxis
- Antiviral treatment
- Antiviral stockpiling
- Vaccination
- Border control
- School closure

ELSEVIER

Journal of Theoretical Biology
Volume 300, 7 May 2012, Pages 161-172

Economic analysis of the use of facemasks during pandemic (H1N1) 2009

Samantha M. Tracht [a, b], Sara Y. Del Valle [a], Brian K. Edwards [a]

Show more

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PLoS one

Cost-Effective Strategies for Mitigating a Future Influenza Pandemic with H1N1 2009 Characteristics

Nilimesh Halder, Joel K. Kelso*, George J. Milne

School of Computer Science and Software Engineering, University of Western Australia, Crawley, Western Australia, Australia

"this study estimates that the use of facemasks by 10%, 25%, and 50% of the population could reduce economic losses by $478 billion, $570 billion, and $573 billion, respectively"

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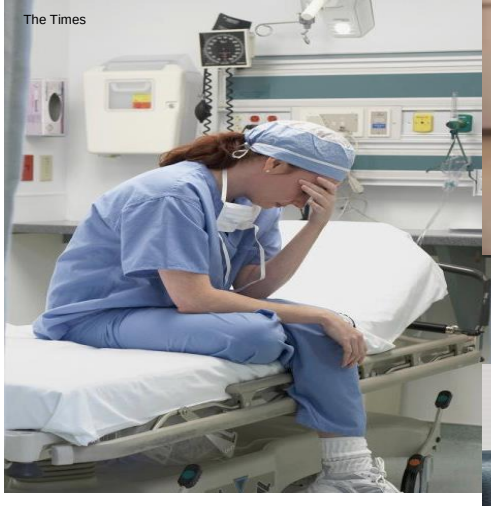
Coronavirus: Doctors collapse from exhaustion as virus spreads through South Korea

Stricken Koreans are dying at home while waiting for hospital beds as the government struggles to deploy enough medical staff

The Times



The Guardian

Daily Express

Birmingham medical news

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Putting evidence into action

The role of clinical guidance

Evidence-based Practice

- Teaching clinicians how to find the evidence to answer clinical questions
- Individual clinicians
- Bottom-up approach

Clinical Guidelines and HTA

- Advising clinicians how to practice based on evidence
- Health systems
- Top-down approach

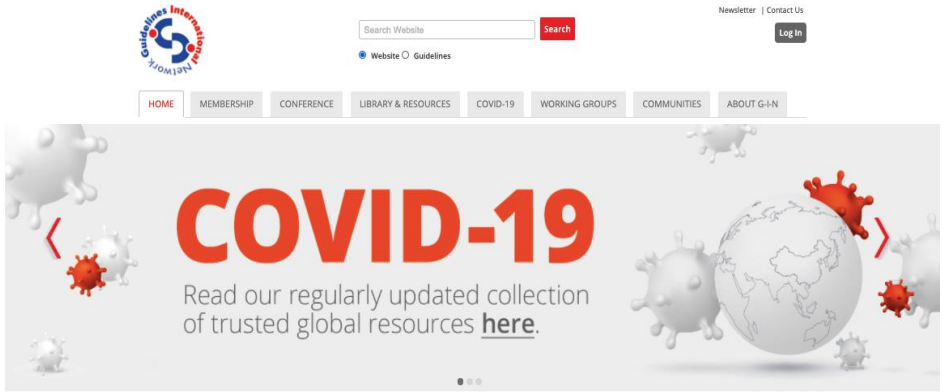
Putting evidence into action

Clinical (Practice) Guidelines

"Statements that include recommendations, intended to optimize patient outcomes, that are informed by a **systematic review of evidence** and an assessment of the **benefits and harms** of **alternative care options**"[1]

NICE National Institute for Health and Care Excellence

World Health Organization



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1. Committee on Standards for Developing Trustworthy CPGs. (IOM-AHRQ 2011)

Putting Evidence Into Action

Rapid Guidelines

NICE National Institute for Health and Care Excellence

Rapid guidelines

Managing symptoms and complications

- Acute kidney injury in hospital - NG175
- Acute myocardial injury - NG171
- Antibiotics for pneumonia in adults in hospital - NG173
- Critical care in adults - NG159
- Managing suspected or confirmed pneumonia in adults in the community - NG165
- Managing symptoms (including at the end of life) in the community - NG163.

Managing conditions that increase risk

- Children and young people who are immunocompromised - NG174
- Chronic kidney disease - NG176
- Community-based care of patients with chronic obstructive pulmonary disease (COPD) - NG168
- Cystic fibrosis - NG170
- Dermatological conditions treated with drugs affecting the immune response - NG169
- Gastrointestinal and liver conditions treated with drugs affecting the immune response - NG172
- Interstitial lung disease - NG177
- Rheumatological autoimmune, inflammatory and metabolic bone disorders - NG167
- Severe asthma - NG166.

Providing services during the pandemic

- Delivery of radiotherapy - NG162
- Delivery of systemic anticancer treatments - NG161
- Dialysis service delivery - NG160
- Haematopoietic stem cell transplantation - NG164
- Renal transplantation - NG178.

Rapid evidence summaries

These summaries cover:

- Acute use of non-steroidal anti-inflammatory drugs (NSAIDs) for people with or at risk of COVID-19 - ES23.
- Anakinra for COVID-19 associated secondary haemophagocytic lymphohistiocytosis - ES26
- Angiotensin-converting enzyme inhibitors (ACEIs) or angiotensin receptor blockers (ARBs) in people with or at risk of COVID-19 - ES24
- Long-term use of non-steroidal anti-inflammatory drugs (NSAIDs) for people with or at risk of COVID-19 - ES25
- Remdesivir for treating hospitalised patients with suspected or confirmed COVID-19 - ES27
- Vitamin D for COVID-19 - ES28.

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Putting evidence into action

Health Technology Assessment (HTA)

"A multidisciplinary process that uses explicit methods to determine the value of a health technology at different points in its lifecycle. The purpose is to inform decision-making in order to promote an equitable, efficient, and high-quality health system." O'Rourke et al. 2020

NICE National Institute for Health and Care Excellence

CADTH Evidence Driven.

IQWiG Institute for Quality and Efficiency in Health Care

ICER INSTITUTE FOR CLINICAL AND ECONOMIC REVIEW

Healthcare Improvement Scotland | Scottish Medicines Consortium

All Wales Medicines Strategy Group
Grŵp Strategaeth Meddyginiaethau Cymru Gyfan

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eunethta EUROPEAN NETWORK FOR HEALTH TECHNOLOGY ASSESSMENT

ISPOR Improving healthcare decisions

INAHTA

Putting Evidence Into Action

Uncertainty

Decision-making under uncertainty and an evolving evidence-base!

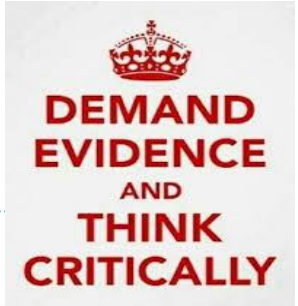
Managing uncertainty in a pandemic: five simple rules

1. Most data will be flawed or incomplete. Be honest and transparent about this.
2. For some questions, certainty may never be reached. Consider carefully whether to wait for definitive evidence or act on the evidence you have.
3. Make sense of complex situations by acknowledging the complexity, admitting ignorance, exploring paradoxes and reflecting collectively.
4. Different people (and different stakeholder groups) interpret data differently. Deliberation among stakeholders may generate multifaceted solutions.
5. Pragmatic interventions, carefully observed and compared in real-world settings, can generate useful data to complement the findings of controlled trials and other forms of evidence.

Rutter et al. Managing uncertainty in the covid-19 era. BMJ Opinion. July 2020 https://blogs.bmj.com/bmj/2020/07/22/managing-uncertainty-in-the-covid-19-era/

Putting Evidence Into Action

Clinical judgment



- "Guidelines not tramlines!" Sir David Haslam

Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

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Thank You!

Question Time

Please use the chat board to log your questions & comments.

Thank you for participating!

Please provide your feedback through the 4-question survey that will appear to you at the end of the event