The novel coronavirus is rapidly spreading across Europe. Healthcare professionals, such as hospital pharmacists, need to be provided with up-to-date information to adequately manage the situation. EAHP has collected resources that can be used by hospital pharmacists and other healthcare professionals. These range from information provided by specialised agencies, such as the World Health Organisation (WHO) or the European Centre for Disease Prevention and Control (ECDC), to information shared by governments and professional societies in different countries.

Useful resources can be submitted to EAHP via the following email address: covid19[at]eahp[dot]eu

Materials in native languages can be submitted. They should, however, be accompanied by a short English description and a translation of the name of the document into English.

Advice for healthcare professionals and scientists provided by specialised agencies

World Health Organisation (WHO)

WHO has published an array of information about COVID-19 on its WEBSITE. Information about the outbreak includes but is not limited to country & technical guidance, advice for the public, situation reports and details on global research efforts.

For healthcare professionals the following was made available:

- **Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected** [Interim guidance](#)
  
  This document is intended for clinicians involved in the care of adult, pregnant, and paediatric patients with or at risk for severe acute respiratory infection (SARI) when infection with the COVID-19 virus is suspected. Considerations for paediatric patients and pregnant women are highlighted throughout the text. The document is not meant to replace clinical judgment or specialist consultation but rather to strengthen clinical management of these patients and to provide up-to-date guidance. Best practices for infection prevention and control, triage and optimized supportive care are included.

- **NEW! Guidance on how to use personal protective equipment (PPE)** [NEW]

[1] Materials in native languages can be submitted. They should, however, be accompanied by a short English description and a translation of the name of the document into English.

[2] WHO has published an array of information about COVID-19 on its WEBSITE. Information about the outbreak includes but is not limited to country & technical guidance, advice for the public, situation reports and details on global research efforts.

[3] For healthcare professionals the following was made available:

- **Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected** [Interim guidance]

  This document is intended for clinicians involved in the care of adult, pregnant, and paediatric patients with or at risk for severe acute respiratory infection (SARI) when infection with the COVID-19 virus is suspected. Considerations for paediatric patients and pregnant women are highlighted throughout the text. The document is not meant to replace clinical judgment or specialist consultation but rather to strengthen clinical management of these patients and to provide up-to-date guidance. Best practices for infection prevention and control, triage and optimized supportive care are included.

- **NEW! Guidance on how to use personal protective equipment (PPE)** [NEW]
- **NEW!** Interim Guidance - Water, sanitation, hygiene, and waste management for the COVID-19 virus [5]
- **NEW!** Rights, roles and responsibilities of health workers, including key considerations for occupational safety and health [6]

**European Centre for Disease Prevention and Control (ECDC)**

ECDC is monitoring the rapidly evolving COVID-19 pandemic. Risk assessments, public health guidance and advice on response activities have been provided by the agency. Situation updates, including information on the epidemiological curve and the global distribution, are made available daily via the following [LINK](#).

The following materials have been shared by ECDC on its website:

- Considerations relating to social distancing measures in response to the COVID-19 epidemic [9]
- Novel coronavirus (SARS-CoV-2) - Discharge criteria for confirmed COVID-19 cases [11]
- Scientific advice on coronavirus [12]
- Guidance for health system contingency planning during widespread transmission of SARS-CoV-2 with high impact on healthcare services [15]
- Questions and answers on COVID-19 [16]

The following infographics and brochures can be downloaded from ECDC’s website for distribution:

- Poster: Effective hand-washing | Outlining how to wash [17]
- Infographic containing basic information about the virus, symptoms, prevent and transmission [18]
- Brochure: Information leaflet template on COVID-19 [20]
- Leaflet: information on COVID-19 for people with chronic diseases [21]
- Leaflet: information on COVID-19 for people with immunocompromising condition [22]
- Leaflet: information on COVID-19 for pregnant women [23]
- Leaflet: information on self-isolation and quarantine after exposure to COVID-19 [24]

A series of micro learning activities related to COVID-19 have been made available. The first five sessions are covering non-pharmaceutical countermeasures (NPC) focusing on an introduction to the topic, personal protection, environmental countermeasures, social distancing countermeasures and travel related countermeasures. The micro learning activities can be accessed via the following [LINK](#).
European Directorate for the Quality of Medicines & HealthCare (EDQM)

- **NEW!** Information on licensed products as well as extemporaneous preparations which may be suitable for treatment of paediatric patients with COVID-19 [26]

  The European Paediatric Formulary Working Party at the EDQM compiled existing knowledge on paediatric formulations for active substances which are under investigation for the treatment of COVID-19 as well as known authorised medicinal products. This information might also be useful for other patient groups. Information on Chloroquine, Hydroxychloroquine and Lopinavir/Ritonavir is currently available.

Advice from the International Pharmaceutical Federation (FIP)

- **NEW!** FIP has divided our guidance into four sections, which assist the workforce as a whole. Guidance specifically for community, hospital and clinical biology sectors can be found in Section 2 ?Guidelines for pharmacists and the pharmacy workforce?. The FIP guidance is based on the available evidence and the recommendations of reputable organisations such as the World Health Organization, the United States and the European Centres for Disease Control and Prevention, and others, as cited at the time of publishing. The available knowledge about COVID-19 is rapidly changing and such recommendations may change accordingly. Although FIP will strive to keep these guidelines up to date, they recommend consulting the websites of these organisations and any newly available evidence for the most recent updates.

  - Clinical information and treatment guidelines[27]
  - Guidelines for pharmacists and the pharmacy workforce[28]
  - Frequently asked questions and myth busting[29]
  - COVID-19 Additional resources[30]

NOTE: FIP is collaborating with its member organisations and other partners to make this guidance available in different languages, for maximal dissemination and use. FIP will notify their networks via their social media channels as translations are released.

FIP guidance summarised

- COVID-19 transmission and incubation[31]
- Community pharmacy interventions and patient counselling[32]
- Pharmacy operations and facilities: ensuring safety for all and continuity of service[33]
- Community pharmacy procedures[34]
- Community pharmacy contingency plans[35]
- Patient isolation and referral[36]
- Cleaning and disinfection management[37]
- Treatment guidelines and medicines to be stocked[38]
- Use of masks[39]
- Notice to community pharmacy patients and customers [40]

NOTE: FIP is sharing guidance and examples from our member organisations and others below. Please note, however, that this sharing is not an endorsement of these materials and
they can take no responsibility for their accuracy or their being up-to-date.

You can find more resources from FIP members [HERE](#)[41]

Other FIP resources

- Position statement of the International Pharmaceutical Federation (FIP) on the association between the use of non-steroidal anti-inflammatory medicines (including ibuprofen), ACE inhibitors, angiotensin receptor blockers (ARBs) and corticosteroids, and an increased risk of coronavirus/COVID-19 infection or disease severity.[42]
- FIP Young Pharmacists Group[43]
- PowerPoint Slides for the webinar (10/02/2020): "Coronavirus SARS-CoV-2: How can pharmacists help control the outbreak?"[44]

Advice for healthcare professionals and scientists provided by different European countries

Finland

  The Finnish Institute for Health and Welfare has shared information about the spread of COVID-19 in Finland and the disease itself. In addition, the website contains guidelines for healthcare professionals, workplace instructions, hygiene and cough instructions as well as information for travellers and citizens.
- Coronavirus COVID-19 ? Latest Updates [46]
  Limited information has been made available by the Finnish Institute for Health and Welfare in English on the situation in Finland, Europe and the rest of the world.

France

- !NEW! Provisional advice: Recommendations for the prevention and management of COVID-19 in patients at risk of severe forms | Avis provisoire: Recommandations relatives à la prévention et à la prise en charge du COVID-19 chez les patients à risque de formes sévère [47]
  The French High Council for Public Health shared recommendations for patients at risk. These recommendations cover the elderly as well as patients with cardiovascular history and insulin-dependent diabetics. Also, information on the protection of patients with cancer against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, while maintaining the possibility of cancer treatment, was made available.
- !NEW! Management of wastes from healthcare activities during the Covid-19 epidemic, particularly in diffuse environments | Gestion des déchets d'activités de soins (DAS) produits au cours de l'épidémie de Covid-19, en particulier en milieu diffuse [48]
  Procedures for the management of healthcare activity waste produced during the COVID-19 pandemic have been made available by the French High Council for Public Health
Greece

  The National Public Health Organisation of Greece has put together detailed information on COVID-19. Most information is only available in Greek.

- **COVID-19 Guidelines on home isolation of suspect cases** [50]
  The National Public Health Organisation of Greece has made available guidance on home isolation in English. People who have been in contact with a suspect or confirmed COVID-19 case (i.e. family members, friends, acquaintances, healthcare workers) are advised to monitor their health condition (temperature check twice a day) for 14 days from the last exposure. It is wise to keep daily contact with healthcare professionals throughout the entire monitoring period.

- **Novel Coronavirus COVID-19 ? Advice for travellers** [51]
  The travel advice presented by the National Public Health Organisation of Greece provides recommendations for travelling to or coming back from areas with local transmission of COVID-19. The information shared is available in English.

Italy

- **Sicilian Region - Department of Health: COVID-19 pneumonia indications related to the medicinal product RoActemra (tocilizumab) | Regione Siciliana - Assessorato della Salute** [52]: Polmonite da COVID-19 indicazioni relative alla specialità medicinale RoActemra (tocilizumab)
  The letter from the Department of Health of Sicily contains indications for treating a pneumonia caused by COVID-19 with tocilizumab.

- **Interim indications for a rational use of protection equipment against SARS-CoV-2 infections for sanitary and social health activities - ISS infection prevention and control working group | Istituto Superiore di Sanità: indicazioni ad interim per un utilizzo razionale delle protezioni per infezione da SARS-CoV-2 nelle attività sanitarie e sociosanitarie - Gruppo di lavoro ISS prevenzione e controllo delle infezioni** [53]
  The Italian National Institute of Health (ISS) provides information on the exposure risk for healthcare professionals as well as prevention and protection measures. Detailed instructions are included on the use of protective equipment in the different healthcare settings.

Spain

- **Official communication from the Ministry of Health on the COVID-19 measures | Información oficial del Ministerio de Sanidad dirigida a los profesionales sanitarios y a la ciudadanía en relación a recomendaciones sanitarias y de salud pública de interés general** [54]
  The official information from the Spanish Ministry of Health is addressed to health professionals and citizens regarding public health and health recommendations of general interest. It contains measures of general interest, information for citizens and technical documents for healthcare professionals and information for journalist.

- **Technical documents for healthcare professionals on COVID-19 | Documentos técnicos para profesionales** [55]
The Spanish Ministry of Health has made available technical documents for healthcare professionals linked with the COVID-19 outbreak including proceedings for the assessment of COVID-19 patients and guidelines for healthcare professionals exposes to the COVID-19.

- **NEW!** Available treatments for the management of respiratory infection by SARS-CoV-2 | Tratamientos disponibles para el manejo de la infección respiratoria por SARS-CoV-2 [56]
The Ministry of Health has developed a protocol for the management and treatment of patients with SARS-CoV-2 infection that is permanently updated. This document complements this protocol and updates the medications available for SARS-CoV-2 infection.

- **NEW!** Recommendations of the AEMPS for the management of medications for the management of patients with end-stage or palliative diseases in the current health situation | Recomendaciones de la AEMPS para la gestión de medicamentos para el manejo de pacientes con enfermedades en fase terminal o paliativa en la situación sanitaria actual [57]
Recommendations for the therapeutic management of terminally ill patients using a combined treatment with opiates and benzodiazepines/neuroleptics, in which palliative sedation is necessary, whether or not they are affected by COVID-19.

**The Netherlands**

- **NEW!** Drug treatment options for patients admitted with COVID-19 | Medicamenteuze behandelopties bij opgenomen patiënten met COVID-19 [58]
The National Institute for Health and the Environment of the Netherlands has published information on treatment options. In relation to these options it has been clarified that there are currently no registered medicines for the treatment of COVID-19, because no treatment results from therapeutic research have been published. Therapy advice for COVID-19 cannot (yet) be scientifically substantiated. Based on currently available data, the options presented are for patients admitted with COVID-19 due to severe disease symptoms.

**United Kingdom**

- **NEW!** COVID-19 rapid guideline: delivery of systemic anticancer treatments [59]
The purpose of this guideline from the National Institute for Health and Care Excellence (NICE) is to increase the safety of patients with cancer and make the best use of the National Health Service (NHS) resources, while protecting staff from infection. It will also enable services to match the capacity for cancer treatment to patient needs if services become limited because of the COVID-19 pandemic.

- **NEW!** COVID-19 rapid guideline: dialysis service delivery [60]
NICE has made available a guidelines which seeks to maximise the safety of patients on dialysis, while protecting staff from infection.

- **NEW!** COVID-19 rapid guideline: delivery of radiotherapy [61]
This NICE guideline aims at improving the safety of patients who need radiotherapy and make the best use of NHS resources, while protecting staff from infection. It will also enable services to match the capacity for radiotherapy to patient needs if services become limited because of the COVID-19 pandemic.
Advice/information provided by healthcare professional organisations, individual hospital pharmacists and other related distribution channels

American Society for Parenteral and Enteral Nutrition (ASPEN)

- **Resources on enteral nutrition** [62]
  ASPEN has made available general information on enteral nutrition.
- **Resources on parenteral nutrition** [63]
  ASPEN has made available general information on parenteral nutrition.
- **NEW! Nutrition Therapy in the Patient with COVID-19 Disease Requiring ICU Care** [64]
  The nutrition therapy guidance was updated by ASPEN on 1 April.

American Society of Health-System Pharmacist (ASHP)

- **Assessment of Evidence for COVID-19-Related Treatments** [65]
  The information contained in this evidence table is emerging and rapidly evolving because of ongoing research and is subject to the professional judgment and interpretation of the practitioner due to the uniqueness of each medical facility’s approach to the care of patients with COVID-19 and the needs of individual patients

Canadian Pharmacists Association

- **Suggested Best Practices for Pharmacies During the COVID-19 Pandemic** [66]
  CPhA has developed suggested best practices on the use of personal protective equipment (PPE) for pharmacy staff during the COVID-19 pandemic.
- **Daily COVID-19 information for pharmacists** [67]

Chinese Pharmaceutical Association

- **Novel Coronavirus (COVID-19) outbreak prevention and control: Guidance and management strategies for pharmacists and the pharmacy workforce** [68]
- **Expert consensus to guide the prevention and control of the COVID-19 epidemic for retail pharmacy staff** [69]

China Law Translate

- **Novel Coronavirus Pneumonia Diagnosis and Treatment Plan (Provisional 7th Edition)** [70] | An unofficial translation of the Chinese guidelines
  The content outlines the Chinese guidelines for COVID-19 including pathogenic and epidemiological characteristics, pathological changes and clinical characteristics. The webpage also includes the diagnostic criteria and the clinical classifications for the mild form, regular form, severe form and critical form in adults and children and the clinical warning signs. Furthermore, the guideline includes recommendations for treatment and the criteria for discharge and discharge notes as well as infection control.
Dutch Association of Hospital Pharmacists (NVZA)

- **Preparation of disinfectant for hand hygiene** [71]
  Paul Le Brun and Kirsten Schimmel, two Dutch hospital pharmacists, have put together information on the preparation of disinfectant for hand hygiene. The formulation was defined by the Dutch Laboratory of Pharmacists and has been translated into English.

European Psychiatric Association

- **NEW! Management of Psychiatric Patients with Suspected COVID-19** [72]
  EUROSPY has put together information on the management of psychiatric patients that have been infected with the coronavirus.

European Society of Cardiology (ESC)

- **Position Statement of the ESC Council on Hypertension on ACE-Inhibitors and Angiotensin Receptor Blockers** [73]
  The statement declares that recent rumours in the media and on social media that ACE-I or ARB medications might increase the risk of a severe form of COVID-19 is not based on sound scientific basis. And that some studies (done on animals) suggest that such medications might have protective capabilities against lung complications in patients with COVID-19. The Council on Hypertension strongly recommends that patients continue their usual anti-hypertensive therapy.

French Resuscitation Society (SRLF)

- **Expert recommendations for the resuscitative management of patients during an outbreak of CoV2-CoVRSA | Recommandations d'experts portant sur la prise en charge en réanimation des patients en période d'épidémie à SARS-CoV2** [74]
  SRLF has made available recommendations for the resuscitative management of patients. Page 11 of the document lists specific treatment options for COVID-19, including recommendations for Remdesivir, Lopinavir/ritonavir; Chloroquine, Anticorps monoclonaux and Umifenovir. Molecules under evaluation include: Favipiravir, Nitazoxanide, Niclosamide, Prulifloxacin, Bictegravir, Nelfinavir, Tegobuvi and Atazanavir.

French Society of Clinical Pharmacy (SFPC)

- **NEW! Useful Resources to Fight COVID-19 | Documents utiles à la prise en charge du COVID-19** [75]
  The French Society of Clinical Pharmacy (SFPC) has made available information linked to the good use of medicines and therapeutic care in their resource centre. The information is only available in French.

French Society of Pharmacology and Therapeutics

- **NEW! Q&A | Questions & Réponses** [76]
  Regularly updated question and answers on drug interactions.
- NEW! Recommendations for Pharmacological Therapeutic Monitoring of lopinavir/r and hydroxychloroquine in patients treated for SARS-CoV-2 infection (COVID-19) | Recommandations pour le Suivi Thérapeutique Pharmacologique du lopinavir/r et de l'hydroxychloroquine chez les patients traités pour une infection à SARS-CoV-2 (COVID-19) [77]

Discussion on the methods of monitoring and pharmacological management of patients infected with SARS-CoV-2 treated with lopinavir/ritonavir and/or hydroxychloroquine outside the clinical research protocol.

IDstewardship.com

- Coronavirus (COVID-19) Resources For Pharmacists [78]
  IDstewardship.com has created a webpage to provide insights and resources for pharmacists to help them manage the COVID-19 pandemic. The webpage lists general resources, treatment guidelines, including information on Remdesivir, Lopinavir/ritonavir (Kaletra, LPV/r), Chloroquine, Hydroxychloroquine (Plaquenil) and Tocilizumab (Actemra).

Italian Hospital Pharmacists

  The UPMC bulletin contains links to official information sources and details on how UPMC Italy is managing the situation.

- COVID-19 treatment guideline | COVID-19 linee guida trattamento [80]
  The diagram contains information on treatment options for COVID-19 taking also into account the severity index and the different therapies for the pneumonia associated with COVID-19.

  This guideline recommends that only patients with a high interleukin-6 value should be treated with Tocilizumab. The recommended treatment of cytokine release syndrome by intravenous infusion lasting 60 minutes and is equal to 4-8 mg/kg in patients weighing more than 30kg. Doses above 800mg per infusion are not recommended.

Italian Society of Hospital Pharmacy (SIFO)

- Operating instruction for the preparation of master preparations based on antiretrovirals to be administered to patients who are unable to swallow solid whole forms | Istruzione Operativa per l’allestimento di preparati magistrali a base di antiretrovirali da somministrare a pazienti non in grado di deglutire forme solide intere [82]
  SIFO and the Italian Society of Pharmacists Responsible for Preparing Medicines (SIFAP) have put together information on pharmacy preparations. In anticipation of an increase in the need to administer tablets in different forms to patients and the lack of pharmaceuticals suitable for the administration by tube both healthcare professional organisations have shared information on this subject based on available literature.

The Italian Society of Hospital Pharmacy has made available resources for its members to help them address the COVID-19 pandemic. The information is only available in Italian.

**Italian Society of Infectious and Tropical Diseases (SIMIT)**

- **Guidelines on therapeutic and supportive management for patients with COVID-19 coronavirus infection | Linee guida sulla gestione terapeutica e di supporto per pazienti con infezione da coronavirus COVID-19** [84]
  The guideline details information on the therapeutic treatment for patients infected by COVID-19 including pharmacologic treatments.

- **Guide for the treatment of persons with COVID-19 | Vademecum per la cura delle persone con malattia da COVI-19** [85]
  The guidance document of SIMIT on treatment options and includes a simplified therapeutic scheme summarising treatment possibility for specific symptoms shown by patients with COVID-19.

**Italian Society of Pharmacists Responsible for Preparing Medicines (SIFAP)**

- **SIFAP Newsletter of 26 February 2020 | SIFAP Newsletter 26 Febbraio 2020** [86]
  The newsletter of SIFAP contains considerations on the preparation of hand disinfectants.

**Liverpool Drug Interaction Group of the University of Liverpool, UK**

- **Prescription resources and interactions of drugs with COVID-19** [87]
  The Liverpool Drug Interaction Group, in collaboration with the University Hospital of Basel (Switzerland) and the Radboud UMC (Netherlands), has produced various materials in PDF format to aid the use of experimental agents in the treatment of COVID-19. The site is regularly updated.

**National Health Service (NHS) Specialist Pharmacy Service**

- **NEW! COVID-19 Resources for Pharmacists** [88]
  The SPS of the NHS makes available and regularly updates information to support pharmacists working across the UK health system during COVID-19.

**Royal College of Obstetricians and Gynaecologists**

- **NEW! Coronavirus (COVID-19) infection and pregnancy** [89]
  The Royal College of Obstetricians and Gynaecologists has made available information, including guidance for healthcare professionals on COVID-19 infection in pregnancy, published by the RCOG, Royal College of Midwives, Royal College of Paediatrics and Child Health, Public Health England and Health Protection Scotland.

**Royal College Of Psychiatrists**

- **NEW! Guidance for clinicians** [90]
  RCPSYCH has made available several guidance documents for psychiatrists.
Sciensano

- !NEW! Interim clinical guidance for adults with suspected or confirmed COVID-19 in Belgium (Version 6) [91]
  Sciensano has published a guideline that summarises the selected investigational drugs to consider for clinical use at this moment in Belgium, with information on in vitro/in vivo efficacy; the current therapeutic recommendations for each category of COVID-19 patients, with indications and precautions; and the treatment protocols that are in use in some other European countries, as obtained at the beginning of March 2020.

Society of Surgical Oncology

- !NEW! SSO has made available a number of different cancer treatment recommendations during the coronavirus pandemic. These include:
  - Resource for Management Options of Breast Cancer During COVID-19 [92]
  - Resource for Management Options of Colorectal Cancer During COVID-19 [93]
  - Resource for Management Options of Endocrine/Head and Neck Cancer During COVID-19 [94]
  - Resource for Management Options of GI and HPB Cancers During COVID-19 [95]
  - Resource for Management Options of Melanoma During COVID-19 [96]
  - Resource for Management Options of Peritoneal Surface Malignancies During COVID-19 [97]
  - Resource for Management Options of Sarcoma During COVID-19 [98]

Spanish Society of Geriatrics and Gerontology (SEGG)

- !NEW! Pharmacological management of psychotic disorders in older people with treatment of COVID19: interactions and therapeutic recommendations | Documento de consenso de ocho sociedades sobre el manejo farmacológico de trastornos psicóticos en personas mayores en tratamiento por COVID-19 [99]
  Eight reference societies in the approach and follow-up of patients with multiple pathologies and/or with chronic pathologies present the document aimed at summarizing the main interactions that occur between the drugs prescribed for the treatment of psychotic disorders and the drugs that are being using to treat patients with COVID-19.

Spanish Society of Hospital Pharmacy (SEFH)

- !NEW! Hospital pharmacy procedures for the management of antiviral treatment in the new coronavirus SARS-CoV-2 disease (COVID-19) [100]
  Given the current situation caused by infection with the SARS-CoV-2 coronavirus (COVID-19), the hospital pharmacy is an essential link in the health system. With the final aim of contributing in the best possible way to the management of antiviral treatment, the Spanish Society of Hospital Pharmacy (SEFH) has issued treatment recommendations.
- !NEW! SUMMARY OF INTERACTIONS: COVID19 drugs + asthma drugs | RESUMEN DE INTERACCIONES: fármacos COVID19 + fármacos asma [101]
  The pneumonology working group of SEFH has put together information on the
interaction of medicines used for the treatment of COVID-19 patients with asthma medication.

UMC Utrecht

- COVID-19: What do we know about the treatment options | COVID-19: Wat weten we van de therapeutische opties? [102] [103]
  The presentation prepared by hospital pharmacists Emilie Gieling, in collaboration with Prof Dr David Burger from the Radboud UMC details known information about the treatment options of COVID-19. The document is only available in Dutch.

VASCERN - European Reference Network for rare vascular diseases

- !NEW! COVID-19 recommendations from VASCERN's Rare Disease Working Groups [104]
  The experts from the Rare Disease Working Groups of VASCERN have prepared consensus statements for patients with rare vascular diseases. These statements will be updated as necessary.

Information published by journals

- Cochrane Special Collections ? Coronavirus (COVID-19): evidence relevant to critical care [105]
  This Special Collection is one of two collections on COVID-19, and it focuses on evidence relevant to critical care. See also the companion Special Collection: Coronavirus (COVID-19): infection control and prevention measures [106].

- Cochrane France ? Dossier spécial COVID-19 [107]
  This Special Collection provides information on COVID-19 in French.

- Oxford University Press for the Infectious Diseases Society of America | In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydroxychloroquine for the Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) [108]
  The study examined whether hydroxychloroquine may be useful in controlling the cytokine storm that occurs late-phase in critically ill SARS-CoV-2 infected patients. The pharmacological activity of chloroquine and hydroxychloroquine was tested using SARS-CoV-2 infected Vero cells and Hydroxychloroquine (EC50=0.72 \mu M) was found to be more potent than chloroquine (EC50 =5.47 \mu M) in vitro. A loading dose of 400 mg twice daily of hydroxychloroquine sulphate given orally, followed by a maintenance dose of 200 mg given twice daily for 4 days is recommended for SARS-CoV2 infection.

- Science Translational Medicine | Broad-spectrum antiviral GS-5734 inhibits both epidemic and zoonotic coronaviruses [109]
  The study shows that a nucleotide prodrug GS-5734, which is currently in clinical development for the treatment of Ebola, can inhibit SARS-CoV and MERS CoV replication. GS-5734 was also effective against bat-CoVs, prepandemic bat-CoVs and circulating contemporary human CoV in primary human lung cells. Studies done on cells and mice provide substantive evidence that GS-5734 may prove effective against endemic MERS-CoV in the Middle East, circulating human CoV and possibly emerging CoV of the future.

- Journal of Hospital Infection | Persistence of coronaviruses on inanimate surfaces
and their inactivation with biocidal agents? Journal of Hospital Infection | Persistenza di coronavirus su superfici inanimate e loro inattivazione con agenti biocidi [110]

The article summarises the findings of a literature review looking at the persistence of severe acute respiratory syndrome coronavirus (SARS), Middle East respiratory syndrome coronavirus (MERS) or endemic human coronaviruses (HCoV) on inanimate surfaces. Surface disinfection procedures with 62 and 71% ethanol, 0.5% hydrogen peroxide or 0.1% sodium hypochlorite have shown that these viruses can be efficiently inactivated within 1 minute.

**NEW!** The Lancet - What are the risks of COVID-19 infection in pregnant women? [111]

The research provides some insight into the clinical characteristics, pregnancy outcomes, and vertical transmission potential of COVID-19 infection in pregnant women.

**Links to other useful resources**

- ASHP ? Resources for pharmacists: Coronavirus Disease 2019 (COVID-19) [112]
- European Commission - the coronavirus response team [114]
- **NEW!** Frontiers Coronavirus Knowledge Hub [115]
- Guidance on effective hand washing [116]

Last update: 6 April 2020

**Links**

[1] https://www.eahp.eu/contact/covid-19/eahp.eu