

SCIENTIFIC JOURNALS

- **Cochrane Special Collections – Coronavirus (COVID-19): evidence relevant to critical care** ^[1]

^[1]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** ^[2].

- **Cochrane France – Dossier spécial COVID-19** ^[3]

^[4]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)** ^[5]

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 μM) was found to be more potent than chloroquine (EC₅₀ =5.47 μM) 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** ^[6]

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 [7]

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.

- **The Lancet - What are the risks of COVID-19 infection in pregnant women?** [8]

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

- **The New England Journal of Medicine - Report on Renin–Angiotensin–Aldosterone System Inhibitors in Patients with Covid-19** [9]

The report discusses the uncertain effects of RAAS blockers on ACE2 levels and activity in humans and proposes an alternative hypothesis that ACE2 may be beneficial rather than harmful in patients with lung injury.

- **The New England Journal of Medicine - Compassionate Use of Remdesivir for Patients with Severe Covid-19** [10]

Remdesivir, a nucleotide analogue prodrug that inhibits viral RNA polymerases, has shown in vitro activity against SARS-CoV-2. In the cohort of patients hospitalized for severe Covid-19 who were treated with compassionate-use remdesivir, clinical improvement was observed in 36 of 53 patients (68%).

- **Open Forum Infectious Disease - Coronavirus Disease 2019 Treatment: A Review of Early and Emerging Options** [11]

The article summarizes the current evidence and provides guidance on potential COVID-19 treatment options on behalf of the Society of Infectious Diseases Pharmacists.

- **JAMA Network - Pharmacologic Treatments for Coronavirus Disease 2019 (COVID-19)** [12]

Given the rapid pace of scientific discovery and clinical data generated by the large number of people rapidly infected by SARS-CoV-2, clinicians need accurate evidence regarding effective medical treatments for this infection. The review tries to shed light on the current pharmacologic treatment options.

- **American Heart Association Journals - COVID-19, Arrhythmic Risk and Inflammation: Mind the Gap!** [13]

- **American Heart Association Journals - Effect of Dapagliflozin on Atrial Fibrillation in Patients with Type 2 Diabetes Mellitus** [14]

The article investigates whether sodium-glucose cotransporter 2 (SGLT2) inhibitors could also reduce the risk of atrial fibrillation (AF) and atrial flutter (AFL).

- **American Heart Association Journals - Antiplatelet Therapy Following Percutaneous Coronary Intervention in Patients Complicated by COVID-19: Implications from Clinical Features to Pathological Findings** [15]

- **Research in Social & Administrative Pharmacy - Hospital pharmacists' pharmaceutical care for hospitalized patients with COVID-19: Recommendations and guidance from clinical experience** [16]

The article discusses the hospital pharmacists' role in providing pharmaceutical care for hospitalized patients with COVID-19 to promote patient care and management during the pandemic.

- **Kidney International reports - Management of Patients on Dialysis and With Kidney Transplantation During the SARS-CoV-2 (COVID-19) Pandemic in Brescia, Italy** [17]

The article describes the experience of practitioners with managing patients with kidney disease during the current COVID-19 pandemic in Brescia City in the Lombardy region of Italy, with particular attention to patients undergoing dialysis and patients with renal transplantation.

- **Journal of Intensive Care Medicine - Guidelines on the Management of Critically Ill Adults with COVID-19** [18]

The scope of the guidelines is to provide recommendations to support hospital clinicians managing critically ill adults with COVID-19 in the ICU.

- **REC: International Cardiology - Consideraciones sobre el abordaje invasivo de la cardiopatía isquémica y estructural durante el brote de coronavirus COVID-19** [19]

(Considerations on the invasive management of ischemic and structural heart disease during the COVID-19 coronavirus outbreak)

Consensus statement of the Interventional Cardiology Association and the Ischemic Heart Disease and Acute Cardiac Care Association of the Spanish Society of Cardiology

- **Intensive Care Medicine - COVID-19 pneumonia: different respiratory treatments for different phenotypes?** [20]

The article puts forward hypotheses on the different respiratory treatments for different phenotypes.

- **Méditerranée Infection Foundation - Combination of hydroxychloroquine plus azithromycin as potential treatment for COVID 19 patients: pharmacology, safety profile, drug interactions and management of toxicity** [21]

The article aims at sharing pharmacology considerations contributing to the rational of this combination, and to provide safety information in order to prevent toxicity and drug-drug interactions, based on available evidence.

- **Drug Safety - Evidence of Clinically Meaningful Drug-Drug Interaction With Concomitant Use of Colchicine and Clarithromycin** [22]

The study examines the evidence and clinical implications of concomitant use of colchicine and clarithromycin.

- **The Lancet – COVID-19 in patients with HIV: clinical case series** [23]

The article contains a description of the first single-centre experience of COVID-19 in patients infected with HIV-1, including clinical characteristics, antiviral and antiretroviral treatment, and outcomes.

- **The Lancet - Remdesivir in adults with severe COVID-19: a randomised, double-blind, placebo-controlled, multicentre trial** [24]

The article shares results from a multicenter trial carried out between 6 February and 12 March 2020.

- **Nature – A SARS-CoV-2 protein interaction map reveals targets for drug repurposing** [25]

The report shares information on an analysis of SARS-CoV-2 proteins in human cells.

- **Farmacia Hospitalaria - Patients in Nursing Homes: type 2 diabetes mellitus prevalence and its pharmacologic therapy | Prevalencia de diabetes mellitus tipo 2 y su tratamiento farmacológico en personas institucionalizadas en centros residenciales** [26]

The article determines type 2 diabetes mellitus prevalence, clinical features, specific pharmacologic treatment and problems faced in nursing home patients.

- **The New England Journal of Medicine - Observational Study of Hydroxychloroquine in Hospitalized Patients with Covid-19** [27]

This article examines the association between hydroxychloroquine use and intubation or death at a large medical center in New York

- **SSRN - Usefulness of Ivermectin in COVID-19 Illness** [28]

The article studies the usefulness of Ivermectin, an antimicrobial therapy, in COVID-19 outcomes.

- **Medicina Intensiva - Recomendaciones de «hacer» y «no hacer» en el tratamiento de los pacientes críticos ante la pandemia por coronavirus causante de COVID-19 de los Grupos de Trabajo de la Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias (SEMICYUC)** [29]

The article puts forward recommendations of the Working Groups from the Spanish Society of Intensive and Critical Care Medicine and Coronary Units (SEMICYUC) for the management of adult critically ill patients in the coronavirus disease (COVID-19).

- **The Lancet - Management of patients with multiple myeloma during the COVID-19 pandemic** [30]

The article summarises some recommendations to help with the management of patients with multiple myeloma during the COVID-19 pandemic

- **JAMA Pediatrics - Characteristics and Outcomes of Children with Coronavirus Disease 2019 (COVID-19) Infection Admitted to US and Canadian Pediatric Intensive Care Units** [31]

This article provides an early description and characterization of COVID-19 infection in North American in in paediatric intensive care units (PICUs), focusing on mode of presentation, presence of comorbidities, severity of disease, therapeutic interventions, clinical trajectory, and early outcomes.

- **European Heart Journal - Cardiac safety of off-label COVID-19 drug therapy: a review and proposed monitoring protocol** [32]

This review summarizes evidenced-based data regarding potential cardiac adverse effects due to off-label and investigational drugs including chloroquine and hydroxychloroquine, antiviral therapy, monoclonal antibodies, as well as common antibiotics used for the treatment of COVID-19.

- **American Journal of Health-System Pharmacy - Use of telemedicine to provide clinical pharmacy services during the SARS-CoV-2 pandemic** [33]

The article looks at the provision of clinical services by pharmacists a from remote locations.

- **The New England Journal of Medicines - Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19** [34]

This study analyses the associated risk of cardiovascular disease with an increased risk of in-hospital death among patients hospitalized with COVID-19.

- **Wiley Online Library - In-hospital management of persons with haemophilia and COVID-19: practical guidance** [35]

The article is a practical guidance for persons with haemophilia (PWH) diagnosed with COVID-19, admitted in hospital and possibility transferred to intensive care unit (ICU).

- **The Journal of Thrombosis and Thrombolysis - Thromboembolism and Anticoagulant Therapy During the COVID-19 Pandemic: Interim Clinical Guidance from the Anticoagulation Forum** [36]

This guidance document addresses key issues pertaining to prevention or treatment of thrombotic events in hospitalized patients with COVID-19 with the overarching purpose of striking a balance between risks and benefits of anticoagulation therapies.

- **Diabetologia - Phenotypic characteristics and prognosis of inpatients with COVID-19 and diabetes: the CORONADO study** [37]

Study in people with diabetes hospitalized for COVID-19.

- **Drug and Therapeutics Bulletin - Deprescribing in the time of COVID-19** [38]
The editorial examines task of deprescribing and adjusting patients' medicines who are at high risk of, or who have developed symptoms suggestive of COVID-19.
- **Springer - Thromboembolism and anticoagulant therapy during the COVID-19 pandemic: interim clinical guidance from the anticoagulation forum** [39]
The article provides guidance on the use of anticoagulant therapies in patients with COVID-19.
- **NEJM Catalyst - A Paradigm for the Pandemic: A Covid-19 Recovery Unit** [40]
The article reviews the convenience of a dedicated multidisciplinary post-ICU recovery unit for Covid-19 patients.
- **BMJ - British society of Gastroenterology guidance for management of inflammatory bowel disease during the covid-19 pandemic** [41]
The article provides information on the treatment of people with of inflammatory bowel disease (IBD).
- **Journal of Clinical Oncology Practice - Providing oncology pharmacy services during the coronavirus pandemic: French Society for Oncology Pharmacy (Société Française de Pharmacie Oncologique-SFPO) guidelines** [42]
These recommendations seek to adapt oncology pharmacy activities to ensure safe oncology care and to limit the risk of transmission of CoV-2-SARS for cancer patients.
- **European Journal of Hospital Pharmacy - Epinephrine use in COVID-19: friend or foe?** [43]
The study evaluates the use of epinephrine in COVID-19 patients with cytokine storms.
- **European Journal of Hospital Pharmacy - Involvement of interleukin 6 in SARS-CoV-2 infection: siltuximab as a therapeutic option against COVID-19** [44]
The short report explores the involvement of interleukin 6 in SARS-CoV-2 infection and positions the drug siltuximab in the management of severe forms of COVID-19.
- **MedRxiv - Tocilizumab in COVID-19 patients on mechanical ventilation** [45]
The study investigates if cytokine inhibitor tocilizumab could have a favorable effect on survival in the most severely infected patients who require mechanical ventilation.
- **The Pharmaceutical Journal - Managing dental emergencies in response to COVID-19** [46]
The article contains recommendations for pharmacists and their teams which can be used to counsel patients on interim management for common dental emergencies during the COVID-19 pandemic.
- **Journal of Neurosurgical Anesthesiology - Anesthetic Management of Endovascular Treatment of Acute Ischemic Stroke During COVID-19 Pandemic: Consensus Statement From Society for Neuroscience in Anesthesiology & Critical Care (SNACC)** [47]
Recommendations for the safe and effective anesthetic management of endovascular therapy for acute ischemic stroke during the COVID-19 pandemic.
- **Recovery - Low-cost dexamethasone reduces death by up to one third in hospitalised patients with severe respiratory complications of COVID-19** [48]
Statement from the Chief Investigators of the Randomised Evaluation of COvid-19 thERapY (RECOVERY) Trial on dexamethasone.
- **Revista Colombiana de Gastroenterología - Management of patients with inflammatory bowel disease during the COVID-19 pandemic** [49]
Review on the interaction of the SARS-CoV-2 virus with the gastrointestinal tract and the potential mechanisms whereby a patient with inflammatory bowel disease could have an increased risk of COVID-19 infection.

- **The Journal of Bone & Joint Surgery - A Review of State Guidelines for Elective Orthopaedic Procedures During the COVID-19 Outbreak**
[50]The article discusses the impact of guidelines on orthopaedic surgery and provides the general framework used to determine which procedures have been postponed.
- **AHA Journals - Guidance for Cardiac Electrophysiology During the COVID-19 Pandemic from the Heart Rhythm Society COVID-19 Task Force; Electrophysiology Section of the American College of Cardiology; and the Electrocardiography and Arrhythmias Committee of the Council on Clinical Cardiology, American Heart Association**
[51]The article includes guidance for managing invasive and noninvasive electrophysiology procedures, clinic visits, and cardiac device interrogations.
- **Cochrane Library - Personal protective equipment for preventing highly infectious diseases due to exposure to contaminated body fluids in healthcare staff** [52]
The systemic review evaluates which type of full-body personal protective equipment (PPE) and which method of donning or doffing PPE have the least risk of contamination or infection for healthcare workers.
- **The Lancet - Interleukin-1 blockade with high-dose anakinra in patients with COVID-19, acute respiratory distress syndrome, and hyperinflammation: a retrospective cohort study** [53]
The retrospective study looked at the benefits of anakinra for patients with non-invasive ventilation outside of the ICU.
- **Journal of Pharmaceutical Analysis - Use of subcutaneous tocilizumab to prepare intravenous solutions for COVID-19 emergency shortage: Comparative analytical study of physicochemical quality attributes** [54]
The study evaluated the use of tocilizumab in its intravenous form of administration for treatment of severe cytokine release syndrome patients.
- **Journal of the American Geriatrics Society - COVID-19 SAFER : Deprescribing Guidance for Hydroxychloroquine Drug Interactions in Older Adults** [55]
The study quantifies the degree of polypharmacy and burden of potentially inappropriate medications (PIMs) that older hospitalized adults are taking that would interact with hydroxychloroquine.
- **Journal of the American Geriatrics Society - Optimizing Medication Management During the COVID-19 Pandemic: An Implementation Guide for Post-Acute and Long-Term Care** [56]
The article provides a practical guidance on strategies to improve medication management and support the efforts of frontline staff within these care settings.
- **Critical Care Medicine (CCM) and Intensive Care Medicine (ICM) - Surviving Sepsis Campaign: Guidelines on the Management of Critically Ill Adults with Coronavirus Disease 2019(COVID-19)** [57]
This guideline provides recommendations to support hospital clinicians managing critically ill adults with COVID-19 in the intensive care unit (ICU).
- **Critical Care - Prevention of thrombotic risk in hospitalized patients with COVID-19 and hemostasis monitoring** [58]
The study aims to assist clinicians in the therapy and monitoring of anticoagulation to prevent thrombosis in hospitalized patients with COVID-19.
- **Farmacia Hospitalaria - Hospital Pharmacist Experience in a Multidisciplinary Team in Special Care Settings** [59]
This article provides a description of the hospital pharmacist experience of two public hospitals located in the Autonomous Community of Madrid, Spain during the COVID-19

pandemic.

- **American Journal of Health-System Pharmacy - Perspectives from the frontline: A pharmacy department's response to the COVID-19 pandemic** [60]

The report describe the institution's strategy to deploy pharmacy resources and standardize pharmacy processes to optimize the management of patients with COVID-19.

- **Cancer Treatment Reviews - Cancer, immune suppression and Coronavirus Disease-19 (COVID-19): Need to manage drug safety** [61]

The aim of the present guidelines is to review and report a summary of the various recommendations/expert consensus for the management of cancer patients in the context of the COVID-19 pandemic.

- **Nature Medicine - Extrapulmonary manifestations of COVID-19** [62]

The article reviews extrapulmonary organ-specific pathophysiology, presentations and management considerations for patients with COVID-19 to aid clinicians and scientists in recognizing and monitoring the spectrum of manifestations.

- **Farmacia Hospitalaria - Survey on the situation of telepharmacy as applied to the outpatient care in hospital pharmacy departments in Spain during the COVID-19 pandemic** [63]

The study analyses the status of the implementation and development of telepharmacy as applied to the pharmaceutical care of outpatients treated at hospital pharmacy services in Spain during the COVID-19 pandemic.

- **Journal of Affective Disorders - Impact of coronavirus syndromes on physical and mental health of health care workers: Systematic review and meta-analysis** [64]

The article identifies physical and mental health outcomes in healthcare workers infected or exposed to coronavirus syndromes, monitors their course and implements preventive/treatment measures to mitigate their effect in this vulnerable population.

- **American Journal of Infection Control - Prevalence of Comorbidities Among Individuals With COVID-19: A Rapid Review of current Literature** [65]

The aim of the review is to explore the prevalence of top global comorbidities (CVD, Diabetes, COPD, Cancer, and CKD) among individuals with COVID-19, as well as investigate any significant associations.

- **Dermatologic Therapy - Psoriasis and COVID ?19: A narrative review with treatment considerations** [66]

The article summarises different treatments for psoriasis during the COVID-19 pandemic.

- **MedRxiv - The Possible Role of Vitamin D in Suppressing Cytokine Storm and Associated Mortality in COVID-19 Patients** [67]

This article investigates the possible role of Vitamin D deficiency via unregulated inflammation in COVID-19 complications and associated mortality.

- **The New England Journal of Medicine - Multisystem Inflammatory Syndrome in U.S. Children and Adolescents** [68]

The article reports on the emergence of a life-threatening hyperinflammatory syndrome across the United States that involves damage to multiple organ systems in predominantly previously healthy children and adolescents during the COVID-19 pandemic.

- **Research in Social and Administrative Pharmacy - Drive-thru pharmacy services: A way forward to combat COVID-19 pandemic** [69]

The article shares an overview of opportunities and challenges related to the implementation of "drive-thru pharmacy services" and their role in improving public health during this crisis.

- MedRxiv - Renin-angiotensin-aldosterone system inhibitors and COVID-19 infection or hospitalization: a cohort study** ^[70]
 Cohort study that examines the association between angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs) and COVID-19 infection or hospitalisation.
- Clinical Microbiology and Infection – COVID-19: don't neglect antimicrobial stewardship principles!** ^[71]
 Recommendations regarding the use of antibiotics in patients with COVID-19.
- European Journal of Hospital Pharmacy – Informing critical care drug requirements in response to the COVID-19 pandemic** ^[72]
 The article shares insights on the development a process to estimate critical care drug requirements to robustly inform regional procurement planning and preparedness in response to the COVID-19 pandemic.
- Journal of Interprofessional Care - Development of an interprofessional rotation for pharmacy and medical students to perform telehealth outreach to vulnerable patients in the COVID-19 pandemic** ^[73]
 This report describes an interprofessional rotation for pharmacy and medical students focused on telehealth outreach to patients at high risk for delays in care due to the COVID-19 pandemic.
- Supply Chain Forum: An International Journal - Automated hospital pharmacy supply chain and the evaluation of organisational impacts and costs** ^[74]
 This article aims at demonstrating to what extent taking into account organisational impacts (and more particularly HR impacts) can significantly affect the outcome of economic evaluations and the decision to invest in the intra-hospital supply chain.
- Research in Social and Administrative Pharmacy - Pharmacy practice research priorities during the COVID-19 pandemic: Recommendations of a panel of experts convened by FIP Pharmacy Practice Research Special Interest Group** ^[75]
 The article covers a discussion about the current status of COVID-19 related research, provides recommendations, and identifies focal points for pharmacy practice, social pharmacy, and education research moving forward.
- American Journal of Health-System Pharmacy - Considerations for development of pharmacy support models for COVID-19 alternate care sites** ^[76]
 Guidance on alternate care site planning based on the experience of a health-system pharmacy department in preparing for an expected surge in coronavirus disease 2019 (COVID-19) cases is provided.
- MedRxiv - Interactions between SARS-CoV-2 and influenza and the impact of coinfection on disease severity: a test negative design** ^[77]
 The study aims at assessing whether infection with influenza is associated with a reduced risk of SARS-CoV-2 infection and assessing whether coinfection with influenza is associated with a more severe SARS-CoV-2 outcome such as death, being admitted to hospital, admitted to ICU or requiring ventilatory support.
- Farmacia Hospitalaria - Hospital Pharmacy Compounding against COVID-19 pandemic** ^[78]
 This article highlights the challenges encountered and the impact that COVID-19 has had on hospital pharmacy compounding.
- Journal of Pharmaceutical Policy and Practice - Pharmacists and COVID-19** ^[79]
 The article analyses the role that pharmacists have played in supporting the healthcare system during COVID-19.

- **Journal of Pharmaceutical Policy and Practice - Mental health issues impacting pharmacists during COVID-19** [80]
This article seeks to address the specific implications of COVID-19 on the mental health of pharmacists.
- **The Lancet - Lopinavir–ritonavir in patients admitted to hospital with COVID-19 (RECOVERY): a randomised, controlled, open-label, platform trial** [81]
This article reports results of a randomised trial to assess whether lopinavir–ritonavir improves outcomes in patients admitted to hospital with COVID-19.
- **Intensive Care Medicine - The ten reasons why corticosteroid therapy reduces mortality in severe COVID-19** [82]
The article highlights the current understanding of the effect of corticosteroid therapy in severe COVID-19.
- **Journal of Antimicrobial Chemotherapy - Antimicrobial stewardship challenges and innovative initiatives in the acute hospital setting during the COVID-19 pandemic** [83]
A guidance documents on the antiviral treatment of COVID-19 based on rapid evidence reviews as well as AMS strategies during the pandemic to assist clinicians nationally.
- **Farmacia Hospitalaria - The pharmacist facing the logistics of safely dispensing, storing and preserving drugs in healthcare units | El farmacéutico frente a la logística de dispensación, almacenamiento y conservación segura de medicamentos en unidades asistenciales** [84]
The article describes how the pharmacy service has quickly adapted to respond to a critical situation.
- **Journal of Oncology Pharmacy Practice - Global oncology pharmacy response to COVID-19 pandemic: Medication access and safety** [85]
The article highlights challenges related to safe handling of hazardous drugs and maintaining high-quality medication safety standards that have impacted various stakeholders.
- **International Journal of Pharmaceutical Research - Knowledge, attitude and perception of COVID infections among elders with respiratory diseases** [86]
The study aims to determine the perception, attitude, and knowledge of COVID-19 infections among elders with respiratory diseases.
- **BMJ - Living risk prediction algorithm (QCOVID) for risk of hospital admission and mortality from coronavirus 19 in adults: national derivation and validation cohort study** [87]
The article aims at deriving and validating a risk prediction algorithm to estimate hospital admission and mortality outcomes from coronavirus disease 2019 (COVID-19) in adults.
- **Infection Control & Hospital Epidemiology - Environmental contamination in a COVID-19 intensive care unit (ICU) – what is the risk?** [88]
Observational study that evaluates the extent of environmental contamination in the ICU and correlates this with patient and disease factors, including the impact of different ventilatory modalities.
- **Cochrane Systematic Review - Prophylactic anticoagulants for people hospitalised with COVID?19** [89]
The research aims to assess the effects of prophylactic anticoagulants versus active comparator, placebo or no intervention, on mortality and the need for respiratory support in people hospitalised with COVID?19.
- **The Lancet Diabetes & Endocrinology - Practical recommendations for the management of diabetes in patients with COVID-19** [90]

The article provides insight into potential mechanistic links between the novel coronavirus infection and diabetes, presents practical management recommendations and elaborates on the differential needs of several patient groups.

- **Journal of the Faculty of Medicine and Dentistry of the Université catholique de Louvain (UCL) - COVID-19 and diabetes | COVID-19 et diabète** [91]

The article summarises current information available on the clinical presentation and risks associated with COVID-19 in diabetic patients. The authors propose several recommendations for the management of COVID-19-infected diabetes patients.

- **Australian and New Zealand Journal of Obstetrics and Gynaecology - Clinical care of pregnant and postpartum women with COVID-19: Living recommendations from the National COVID-19 Clinical Evidence Taskforce** [92]

The article describes the Taskforce recommendations for the care of pregnant and postpartum women with COVID-19.

- **British Journal of Clinical Pharmacology - Challenges of drug development during the COVID-19 pandemic: key considerations for clinical trial designs** [93]

This article reviews translational science principles and strategies for conducting clinical trials in a pandemic and evaluates recent trials for different drug candidates.

- **BMC Medicine - Adapting hospital capacity to meet changing demands during the COVID-19 pandemic** [94]

The research article aims to estimate hospital care capacity before the pandemic and to quantify the impact of interventions for treatment of adult COVID-19 patients, focusing on general and acute (G&A) and critical care (CC) beds, staff and ventilators.

- **The bmj - Clinical manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: living systematic review and meta-analysis** [95]

The article determines the clinical manifestations, risk factors, and maternal and perinatal outcomes in pregnant and recently pregnant women with suspected or confirmed coronavirus disease.

- **British Pharmacological Society - Unfractionated heparin inhibits live wild-type SARS-CoV-2 cell infectivity at therapeutically relevant concentrations** [96]

The research aims at comparing the potential antiviral effect of various heparin preparations on live wild-type SARS-CoV-2, in vitro.

- **European Heart Journal Quality of Care and Clinical Outcomes - Cardiovascular comorbidities as predictors for severe COVID-19 infection or death** [97]

The article analyses if patients with pre-existing cardiovascular diseases are at higher risk of adverse COVID-19 outcomes.

- **The Journal of Clinical Endocrinology & Metabolism - Thyroid Dysfunction in Relation to Immune Profile, Disease Status and Outcome in 191 Patients with COVID-19** [98]

The article evaluates the thyroid function of a cohort of COVID-19 patients, in relation to their clinical features, biochemical, immunological and inflammatory markers.

- **Nature - Identification of SARS-CoV-2 Inhibitors using Lung and Colonic Organoids** [99]

Through the development of a lung organoid model using human pluripotent stem cells, the authors of this article performed a high throughput screen of FDA-approved drugs and identified entry inhibitors of SARS-CoV-2.

- **Research in Social and Administrative Pharmacy - The impact of COVID-19 on pharmacy transitions of care service** [100]

This paper highlights the important role pharmacists can play in providing effective

communication, supporting continuity of care, and advocating for patient engagement and empowerment during transitions of care in the COVID-19 pandemic.

- **Dermatologic Therapy - Does therapy with biological drugs influence COVID-19 infection? Observational, monocentric prevalence study on the clinical and epidemiological data of psoriatic patients treated with biological drugs or with topical drugs alone.** [101]

The study compares the prevalence and disease course of COVID-19 in psoriatic patients under treatment with biologic drugs with psoriatic patients using only topical therapies.

- **The Journal of Hospital Infections - Clinical characteristics and humoral immune response in healthcare workers with COVID-19 in a teaching hospital in Belgium**

[102]

The study analyses the clinical characteristics, humoral immune response, sources of contamination, and outcomes among HCWs with COVID-19.

- **Le Pharmacien Hospitalier et Clinicien - Virological cure, clinical efficacy and safety of Remdesivir supplementation against SARS-CoV 2 infection; evidence from human studies | Cure virologique, efficacité clinique et sécurité de la supplémentation en Remdesivir contre l'infection par le SRAS-CoV 2 ; preuves issues d'études sur l'homme** [103]

The aim of the study is to assess the clinical efficacy and safety of Remdesivir in the treatment of COVID-19 patients, using human studies.

- **Le Pharmacien Hospitalier et Clinicien - Beneficial effect of the hydroxychloroquine/azithromycin combination in elderly patients with COVID-19: Results of an observational study | Effet bénéfique de l'association hydroxychloroquine/azithromycine dans le traitement des patients âgés atteints de la COVID-19 : résultats d'une étude observationnelle** [104]

The study evaluates the efficacy of the hydroxychloroquine/azithromycin combination in elderly subjects with COVID-19.

- **The Journal of Hospital Infections - Incidence and outcomes of healthcare-associated COVID-19 infections: significance of delayed diagnosis and correlation with staff absence** [105]

This study was performed to evaluate the prevalence and clinical outcomes of healthcare-associated COVID-19 infections (HA-COVID-19) during the 2020 epidemic and study factors which may promote or correlate with its incidence and transmission in a Teaching Hospital NHS Trust in London, UK.

- **Clinical Pharmacology & Therapeutics - COVIDOSE: A phase 2 clinical trial of low?dose tocilizumab in the treatment of non?critical COVID?19 pneumonia** [106]

The article aims to assess the relationship of dose to fever resolution and CRP response

- **The New England Journal of Medicine - Remdesivir for the Treatment of Covid-19 — Final Report** [107]

The study evaluates the clinical efficacy and safety of putative investigational therapeutic agents among hospitalised adults with laboratory-confirmed COVID-19

- **Disaster Medicine and Public Health Preparedness - Symptoms associated with personal protective equipment among frontline healthcare professionals during the COVID-19 pandemic** [108]

The article investigates risk factors related with new-onset symptoms. In addition, the effects of new-onset symptoms on working performance were evaluated.

- **The Lancet Respiratory Medicine - Human recombinant soluble ACE2 in severe COVID-19** [109]

This case report describes the first course of treatment with human recombinant soluble ACE2 of a patient with severe COVID-19.

- **Cambridge University Press - Symptoms associated with personal protective equipment among frontline healthcare professionals during the COVID-19 pandemic** ^[108]

This article hypothesized that new-onset symptoms among healthcare professionals may be associated with extended use of PPE and aimed to investigate risk factors related with new-onset symptoms.

- **JAMA - Diagnosis, Management, and Pathophysiology of Arterial and Venous Thrombosis in COVID-19** ^[110]

The article analyses the recommendations for venous thromboembolism prevention in hospitalised patients with coronavirus disease 2019.

- **Research in Social and Administrative Pharmacy - The impact of COVID-19 on pharmacy transitions of care services** ^[100]

This paper discusses how COVID-19 has impacted the delivery of pharmacy transitions of care services with real world examples from Sharp Grossmont Hospital and Hoag Memorial Hospital Presbyterian.

- **European Journal of Hospital Pharmacy - Lopinavir/ritonavir, a new galenic oral formulation from commercial solid form, fine-tuned by nuclear magnetic resonance spectroscopy** ^[111]

This article analyses a galenic oral formulation prepared in the hospital pharmacy from lopinavir/ritonavir tablets was fine-tuned, evaluating the content of the active pharmaceutical ingredient (API) and stability of the formulation.

- **European Journal of Hospital Pharmacy - Implementation of a novel home delivery service during pandemic** ^[112]

The article analyses the role that hospital pharmacists develop during the COVID-19 pandemic.

- **European Journal of Hospital Pharmacy - Investigating the challenges and opportunities for medicines management in an NHS field hospital during the COVID-19 pandemic** ^[113]

The article describes the development of a framework to convert the large non-hospital setting into a functioning NHS field hospital with standardised MM processes adjusted appropriately to cope with operational constraints in the pandemic situation.

- **American Journal of Health-System Pharmacy - Rising to the challenge: Pharmacy residents on the front lines during COVID-19 pandemic** ^[114]

The article provides the pharmacy residents' perspective on how the department of pharmacy at a large academic medical center prepared and managed the surge in admissions of patients with coronavirus disease 2019 (COVID-19).

- **Lancet Health Longevity - Metformin and risk of mortality in patients hospitalised with COVID-19: a retrospective cohort analysis** ^[115]

The article aims to identify whether metformin reduced COVID-19-related mortality and whether sex-specific interactions exist.

- **European Journal of Pharmacology - Drug designing against NSP15 of SARS-COV2 via high throughput computational screening and structural dynamics approach** ^[116]

The article study integrates the high throughput computational screening and dynamic simulation approach to identify the most promising candidate lead compound against NSP15.

- **Research in Social and Administrative Pharmacy - Provision of clinical pharmacy services during the COVID-19 pandemic: Experiences of pharmacists from 16 European countries**

^[117] This study sought to explore the views and experiences of clinical pharmacists in relation to the provision of clinical pharmacy services during COVID-19.

- **Journal of Pharmaceutical and Biomedical Analysis - Challenges and stepwise fit-for-purpose optimization for bioanalyses of remdesivir metabolites nucleotide monophosphate and triphosphate in mouse tissues using LC–MS/MS** ^[116]

The research develops a method suitable to monitor remdesivir nucleotide monophosphate and remdesivir nucleotide triphosphate and provides a useful approach for exploring more detailed effects of remdesivir in treating diseases.

- **JACCP: Journal of the American College of Clinical Pharmacy - Adapting Clinical Pharmacy Staffing Models During the COVID-19 Pandemic: Lessons Learned and Considerations for Future Disaster Planning** ^[118]

The article aims to elucidate how pharmacy departments adapted their staffing models and the impact on frontline staff satisfaction.

- **American Journal of Health-System Pharmacy - COVID-19 preparedness: Clinical pharmacy services remote staffing in a quaternary, level I trauma and comprehensive stroke center** ^[119]

The article identifies strategies to allow clinical pharmacists to continue to participate in daily rounds, provide consultations under collaborative practice agreements, verify medication orders, collect medication histories, provide antimicrobial stewardship, and deliver medication education to patients from off-site locations.

- **Framacia Hospitalaria - COVID-19 Pandemic. New challenge for hospital pharmacy services** ^[120]

The editorial examines how hospital pharmacy services respond to the emergency of the COVID-19 pandemic in Spain.

- **Journal of Medical Internet Research - Implementation of A Remote Oncology Pharmacy Service Platform During the COVID-19 Pandemic: The Sun Yat-sen University Cancer Center Experience** ^[121]

The aim of this study is to investigate the characteristics, acceptance, and initial impact of Cloud SYSUCC during the outbreak of COVID-19 in a tertiary cancer hospital in China.

- **Frontiers in Public Health - Multilevel Engagements of Pharmacists During the COVID-19 Pandemic: The Way Forward** ^[122]

The article analyses the role of pharmacists, including those working in hospitals, during the ongoing COVID-19 crisis.

- **BMJ - Comparative evaluation of clinical manifestations and risk of death in patients admitted to hospital with covid-19 and seasonal influenza: cohort study**

^[123] The research comparatively examines differences in risk of clinical manifestations and death among people admitted to hospital with coronavirus disease 2019 (COVID-19) and seasonal influenza.

- **JAMA network - Assessment of Air Contamination by SARS-CoV-2 in Hospital Settings** ^[124]

The investigation reviews current evidence on air contamination with SARS-CoV-2 in hospital settings and the factors associated with contamination, including viral load and particle size.

- **The Lancet - The European Medicines Agency's EU conditional marketing authorisations for COVID-19 vaccines** ^[125]
The article describe in detail EMA's evaluation process that led to the recommendation of the first EU conditional marketing authorisation for a COVID-19 vaccine.
- **BMC - Treatment of COVID-19 pneumonia with glucocorticoids (CORTIVID): a structured summary of a study protocol for a randomised controlled trial** ^[126]
The aim of this study is to assess the effectiveness and safety of glucocorticoid infusion pulse therapy to improve the clinical outcomes of patients with COVID-19 pneumonia with elevated inflammatory biomarkers.
- **The Journal of Pediatric Pharmacology and Therapeutics - Drug Shortage and Critical Medication Inventory Management at a Children's Hospital During the COVID-19 Pandemic** ^[127]
The article provides information on a framework for modeling drug inventory management at a freestanding children's hospital during a global pandemic.
- **Journal of the American Pharmacists Association - Summary of Adverse Drug Events for Hydroxychloroquine, Azithromycin, and Chloroquine During the COVID-19 Pandemic** ^[128]
The objective of the study was to summarize the adverse drug events (ADEs) associated with HCQ, CQ, and AZM use during the COVID-19 national emergency declaration and compare the results to known adverse reactions listed in the drugs' package inserts.
- **Journal of Oncology Pharmacy Practice - Global oncology pharmacy response to COVID-19 pandemic: Medication access and safety** ^[85]
The document aims to provide a global oncology pharmacy perspective (including both developed and developing nations) on how COVID-19 has impacted access to and delivery of cancer therapies.
- **Antibiotics - Multidrug-Resistant Bacterial Infections in Geriatric Hospitalized Patients before and after the COVID-19 Outbreak: Results from a Retrospective Observational Study in Two Geriatric Wards** ^[129]
The observational study aimed to assess if the COVID-19 pandemic led to an increase of the infections sustained by multidrug-resistant in hospitalized older patients.
- **British Journal of Clinical Pharmacology - INHALED nebulised unfractionated HEParin for the treatment of hospitalised patients with COVID-19 (INHALED-HEP): Protocol and statistical analysis plan for an investigator-initiated international metatrial of randomised studies** ^[130]
Through the metatrial study, the authors aimed to examine the efficacy of inhaled nebulised unfractionated heparin in patients with COVID-19.
- **British Journal of Clinical Phamacology - Using in silico viral kinetic models to guide therapeutic strategies during a pandemic: An example in SARS-CoV-2** ^[131]
The article proposes the use of in silico mathematical models to provide insights that optimize therapeutic interventions designed to effectively treat respiratory infection during a pandemic.
- **bioRxiv - Hydroxyzine inhibits SARS-CoV-2 Spike protein binding to ACE2 in a qualitative in vitro assay** ^[132]
The article reports the benefits of hydroxyzine on COVID-19 patients, raising the need for further investigation into its effectiveness in the treatment of COVID-19 given its well-characterized medical properties and affordable cost.
- **Clinical Laboratory - Molecular Testing of SARS-CoV-2 Infection from Blood Samples in Disseminated Intravascular Coagulation (DIC) and Elevated D-Dimer**

Levels ^[133]

The study presents the first case of post-mortem SARS-CoV-2 molecular testing in the Western part of Romania in a deceased with disseminated intravascular coagulation (DIC) and elevated D-dimer levels.

- **American Journal of Health -System Pharmacy - Advancing ambulatory pharmacy practice through a crisis: Objectives and strategies used in an ambulatory care action team's response to the COVID-19 pandemic** ^[134]

The article shares discussions around the objectives and strategies used by an ambulatory care pharmacy team operating within a large health system's pharmacy incident command structure during the initial response to the coronavirus disease.

- **Journal of Medical Internet Research - Use of a Remote Oncology Pharmacy Service Platform for Patients With Cancer During the COVID-19 Pandemic: Implementation and User Acceptance Evaluation** ^[135]

The study investigates the characteristics, acceptance, and initial impact of the Cloud SYSUCC app during a COVID-19 outbreak in a tertiary cancer hospital in China.

- **Journal of the American Pharmacists Association - A Medication Therapy Management Residency Rotation Adjusts to COVID-19 Constraints** ^[136]

The article presents a summary of adjustments made to the Johns Hopkins Home Care Group's rotation after the onset of the COVID-19 pandemic.

- **Journal of the European Academy of Dermatology and Venerology - Expert recommendations for the management of autoimmune bullous diseases (AIBDs) during the COVID?19 pandemic** ^[137]

The guideline provides recommendations to healthcare professionals for the management of AIBD patients treated with immunomodulating therapy during the SARS-CoV-2 pandemic.

- **European Journal of Hospital Pharmacy - Is sitagliptin effective for the treatment of COVID-19** ^[138]

The study analyses the whether sitagliptin could have beneficial effects in patients with COVID-19.

- **Cell Metabolism - Diabetes, obesity, metabolism, and SARS-CoV-2 infection: the end of the beginning** ^[139]

The study analyses how metabolic disorders and their co-morbidities modify the susceptibility to, natural history, and potential treatment of SARS-CoV-2 infection, with a focus on human biology.

- **MedRxiv - Rates of serious clinical outcomes in survivors of hospitalisation with COVID-19: a descriptive cohort study within the OpenSAFELY platform** ^[140]

The study describes the overall burden of cardiometabolic and pulmonary complications in survivors of severe COVID-19.

- **Kidney360 - Niacinamide May Be Associated with Improved Outcomes in COVID-19-Related Acute Kidney Injury: An Observational Study** ^[141]

The study evaluates the association between niacinamide therapy and outcomes in patients with COVID-19-related AKI.

- **Alternative Therapies, Health and Medicine - Repurposing Drugs for COVID-19: An Approach for Treatment in the Pandemic** ^[142]

The review intends to examine the current status of drugs being repurposed for COVID-19 treatment.

- **Annales Pharmaceutiques Françaises - Contribution of a hospital pharmacy team to critical care of patients infected with SARS-CoV-2 | Contribution d'une équipe de pharmacie hospitalière à la prise en charge en réanimation des patients**

infectés par le SARS-CoV-2

^[143]The objective of this article is to describe the contribution of a hospital pharmacy team from a university hospital establishment to the intensive care of patients infected with SARS-CoV-2.

- **Pharmacia - Opportunities of information communication technologies for providing pharmaceutical care in the COVID-19 pandemic** ^[144]

This article discusses the opportunities of information and communication technologies for providing pharmaceutical care in the context of the COVID-19 pandemic.

- **Journal of Oncology Pharmacy Practice - Development of a process map for the delivery of virtual clinical pharmacy services at Odette Cancer Centre during the COVID-19 pandemic** ^[145]

The purpose of this paper is to describe, in a process map, the process changes that were made to the delivery of clinical pharmacy services to ambulatory cancer patients prescribed intravenous anticancer therapies at Odette Cancer Centre.

- **Pharmacy - Use of concept mapping to identify expectations of pharmacy students selecting elective courses** ^[146]

The objective of this study was to demonstrate the use of concept mapping as a method for analyzing pharmacy students' qualitative perceptions of their expectations of elective courses and to thus help guide delivery methods and course content.

- **Research Square - Evidence on the Stability of Nanoparticles of Comirnaty® in Syringes** ^[147]

The article provides an evaluation of the physical stability of lipid nanoparticles in "real-world" conditions.

- **American Journal of Health-System Pharmacy - Accuracy and safety of medication histories obtained at the time of intensive care unit admission of delirious or mechanically ventilated patients** ^[148]

The project assess the accuracy of alternate-source medication histories obtained for critically ill patients who were delirious or mechanically ventilated at the time of intensive care unit admission.

- **European Review for Medical and Pharmacological Sciences - Impact of the COVID-19 pandemic on clinical research in hospitals: observational study in the first epicenter of the epidemic during the general lockdown in France** ^[149]

This study aims to assess the impact of the strict COVID-19 lockdown on non-COVID-19 clinical research in the French University Hospital of Strasbourg.

- **American Journal of Health-System Pharmacy - Tackling the challenges of nanomedicines: are we ready?** ^[150]

The article is centered on the on reasons underlying the current complex regulatory landscape for nanomedicines and their follow-on products (referred to as nanosimilars) and the pivotal role of hospital pharmacists in selecting, handling, and guiding usage of nanomedicines and nanosimilars.

- **American Journal of Health-System Pharmacy - Health-system implementation of a collaborative core curriculum for advanced pharmacy experiential education during the COVID-19 pandemic** ^[151]

The article provides a description of a collaborative advanced pharmacy practice experience (APPE) education model established within a healthcare institution during the coronavirus disease 2019 (COVID-19) pandemic.

- **European Journal of Hospital Pharmacy - An odyssey across Europe** ^[152]

The letter shares some considerations on the recognition of hospital pharmacy qualifications in Europe in the current context of the COVID-19 crisis.

- **Thrombosis and Haemostasis - Pharmacologic Thromboprophylaxis and Thrombosis in Hospitalized Patients with COVID-19: A Pooled Analysis** ^[153]
The article aims to determine the pooled incidence of thrombosis/bleeding in hospitalized patients with COVID-19 for standard-dose, intermediate-dose, therapeutic anticoagulation, and no pharmacologic thromboprophylaxis.
- **American Journal of Health -System Pharmacy - Emergency preparation and mitigation for COVID-19 response in an integrated pharmacy practice model** ^[154]
The article looks at crisis response planning and risk mitigation at a university health system department of pharmacy with an integrated clinical practice model in the early months of the coronavirus disease 2019 (COVID-19) pandemic.
- **The New England Journal of Medicines - Dexamethasone in Hospitalized Patients with Covid-19** ^[155]
The aim of the research is to assess the use of dexamethasone in hospitalized patients with COVID-19.
- **Journal of Pharmaceutical Policy and Practice - Sterilization plan of the used metered dose inhalers (MDI) to avoid wastage amid COVID-19 pandemic drug shortage** ^[156]
Research that reports a safe and creative strategy to cope with the shortage of salbutamol MDI.
- **Farmacia hospitalaria - Pharmaceutical care to hospital outpatients during the COVID-19 pandemic. Telepharmacy** ^[157]
The purpose of this article is to describe and analyze the experience of hospital pharmacy services with out- patient telepharmacy during the COVID-19 pandemic and expose the les- sons learned.
- **Journal of Pharmaceutical Policy and Practice - New missions of a hospital pharmaceutical technology unit during the COVID-19 pandemic** ^[158]
The article offers a description of the new roles that the hospital pharmacist has acquired during the pandemic.
- **Journal of Pharmacy and Pharmacology - Propolis antiviral and immunomodulatory activity: a review and perspectives for COVID-19 treatment** ^[159]
The article offers an overview of viruses, antiviral immunity, propolis safety and its immunomodulatory and antiviral action as well as the perspectives for coronavirus disease 2019 (COVID-19) treatment.
- **Journal of Pharmaceutical Health Services Research - Development of a multivariable model to predict medication non-adherence risk factor for patients with acute coronary syndrome** ^[160]
The aim of this study was to develop a risk prediction model for non-adherence to prescribed medication based on self-reported risk factors in patients with the acute coronary syndrome (ACS).
- **Chinese Pharmaceutical Journal - The Practice and Exploration of the Pharmacy Counseling Services on Internet-based Medicine Model during the Period of Coronavirus Disease 2019** ^[161]
The article explores the novel models of internet-based pharmacy services during the period of coronavirus disease 2019 (COVID-19)
- **The Permanente Journal - Telehealth in Pediatric Gastroenterology Can Be a Sustainable Long-Term Option: A Single-Center Experience** ^[162]
The report presents a single-center experience from the past year where virtual care was already an integral part of clinical practice in pediatric gastroenterology and review satisfaction data and quality measures from the COVID-19 era.

- **JAMA Internal Medicine - Association of SARS-CoV-2 Seropositive Antibody Test With Risk of Future Infection** ^[163]
The study purpose was to evaluate evidence of SARS-CoV-2 infection based on diagnostic nucleic acid amplification test (NAAT) among patients with positive vs negative test results for antibodies.
- **Pharmacy Education - Redesigning the advanced pharmacy practice experiential education from hospital to home: A COVID-19 scenario** ^[164]
Summary of the action taken to move pharmacy students experiential training to a virtual platform without compromising learning outcomes.
- **Biochemical Society Transactions - Type-2 diabetes, a co-morbidity in Covid-19: does insulin signaling matter?** ^[165]
The research aims to urge the scientific community to explore the possibility of determining whether derangement of insulin signaling could be one of the possible causes of the patients with type-2 diabetes being co-morbid due to SARS-Cov2 infection.
- **eLife - Convalescent COVID-19 patients are susceptible to endothelial dysfunction due to persistent immune activation** ^[166]
This study aims to understand the state of vascular health in convalescent COVID-19 patients and to evaluate subclinical endothelial dysfunction through the phenotyping of circulating endothelial cells (CECs).
- **Critical Care Explorations - New Decade, Old Debate: Blocking the Cytokine Pathways in Infection-Induced Cytokine Cascade** ^[167]
This review summarises the existing literature evaluating the efficacy and safety of anticytokine therapy to tackle the dysregulated immune response to infectious pathogens, discusses potential reasons for failure, applicability to coronavirus disease 2019, and future direction.
- **CMAJ Open - Adoption, feasibility and safety of a family medicine-led remote monitoring program for patients with COVID-19: a descriptive study** ^[168]
The descriptive analysis assesses the initial adoption, feasibility and safety of a family medicine-led remote monitoring program, COVIDCare@Home ^[169], which manages the care of patients with COVID-19 in the community.
- **European Journal of Hospital Pharmacy - Managing the risk of shortages and medication errors with curares during the COVID-19 pandemic: a hospital pharmacy experience** ^[170]
The research aims to assess the use of curares during the COVID-19 crisis and to highlight the lessons to be learnt from this overuse.
- **La revue de l'infirmière - COVID-19, drugs and hospital pharmacy - Évolution des traitements médicamenteux en cas de Covid-19** ^[171]
The article highlights how the pandemic is changing hospital services and stresses the need for healthcare professionals to be reactive, while requiring prescribers to keep themselves informed and pharmacists to be as mobilized as possible to respond to requests from the field as quickly as possible.
- **Farmacia Hospitalaria - How COVID-19 has impacted the role of pharmacists around the world** ^[172]
The article describes how pharmacy has stepped up during the COVID-19 crisis by giving examples from several countries.
- **Journal of the National Comprehensive Cancer Network - Safety at the Time of the COVID-19 Pandemic: How to Keep our Oncology Patients and Healthcare Workers Safe** ^[173]
Review of the strategies on how to mitigate transmission of COVID-19 in an effort to

reduce morbidity and mortality associated with the disease for patients with cancer without infection, for patients with cancer with COVID-19 infection, and for the healthcare workers.

- **European Respiratory Review - Current evidence for COVID-19 therapies: a systematic literature review** [174]

This review highlights the need for well-designed clinical trials of therapeutic interventions for COVID-19 to increase the quality of available evidence.

- **Pharmacy Education - A study on the effectiveness of online teaching in pharmacy education from teacher and student perspectives during the COVID-19 pandemic** [175]

The research assess teacher/student experiences of the effectiveness of online teaching over traditional classroom, looks at the possible ways to improve the teaching and learning experiences and seeks to find innovative ways and means that can make online teaching more effective.

- **European Journal of Hospital Pharmacy - Electronic monitoring of potential adverse drug events related to lopinavir/ritonavir and hydroxychloroquine during the first wave of COVID-19** [176]

The article provides a description of the use of the electronic PharmaCheck system to screen high-risk situations of adverse drug events, particularly targeting prescriptions of lopinavir/ritonavir and hydroxychloroquine in the presence of contraindications or prescriptions outside institutional guidelines.

- **European Journal of Hospital Pharmacy - Hospital pharmacy response to COVID-19 at two UK teaching hospitals: a departmental review of actions implemented to inform future strategy** [177]

The research determines the views of pharmacy staff on a departmental response to wave 1 of the UK COVID-19 pandemic in order to inform a strategy for a second wave at two large UK National Health Service hospitals.

- **Genes & Diseases - Pandemic COVID-19: Current status and challenges of antiviral therapies** [178]

The research summarises the mechanisms of antiviral therapies and the clinical findings from different countries.

- **BMJ - A living WHO guideline on drugs for covid-19** [179]

This living guideline responds to emerging evidence from randomised controlled trials (RCTs) on existing and new drug treatments for COVID-19.

- **Journal of Pharmaceutical Health Services Research - Pharmaceutical care services provided by pharmacists during COVID-19 pandemic: perspectives from around the World** [180]

This review aims to identify and describe the different pharmaceutical care services delivered by pharmacists during this ongoing COVID-19 pandemic.

- **Pharmacy - Alcohol-Based Hand Sanitizers in COVID-19 Prevention: A Multidimensional Perspective** [181]

This paper discusses the interplay between alcohol-based hand sanitizers input (formulation) factors and output (product performance) factors in the context of a multidimensional perspective using a novel representative paradigm.

- **European Review for Medical and Pharmacological Sciences - Dantrolene repurposed to treat sepsis or septic shock and COVID-19 patients** [182]

This review summarized the potential mechanisms of therapeutic effects of dantrolene in sepsis or septic shock at molecular, cell, and organ levels and provided suggestions and strategies for future clinical studies.

- **The International Journal of Clinical Practice - Evaluation of the role and usefulness of clinical pharmacists at the Fangcang Hospital during COVID-19 outbreak** ^[183]

This study was a retrospective study to evaluate the usefulness of clinical prevention and control measures of clinical pharmacists at Jiangnan Fangcang Hospital.

- **Pharmaceutical Sciences Asia - Optimized chloroquine phosphate dosage regimens for early virological clearance of severe acute respiratory syndrome coronavirus 2 using Monte Carlo simulation** ^[184]

This study explored the optimal chloroquine phosphate (CQP) dosage regimens for early achievement of virological clearance within 48-72 hours to diminish in-hospital transmission to front-line healthcare workers.

- **Le Pharmacien Hospitalier et Clinicien - The clinical pharmacist: A full member of the care team, serving the patient COVID patients | Le pharmacien clinicien : un membre à part entière de l'équipe de soins, au service du patient COVID** ^[185]

The article describes the experience of clinical pharmacists who joined one of the COVID ward of Valenciennes' general hospital.

- **Journal of Patient Safety and Risk Management - Implementation and effectiveness of drive-through medication pick-up and home delivery services. A patient safety initiative during COVID-19 pandemic** ^[186]

This article aims to describe the implementation processes and effectiveness of drive-through medication pick-up and home-delivery services as a patient safety initiative during the COVID-19 pandemic.

- **American Journal of health-System Pharmacy - Peripheral infiltration of remdesivir in 3 patients with COVID-19: Case series and discussion** ^[187]

This is a case series to describe remdesivir infiltration in 3 patients with COVID-19.

- **Environmental Chemistry Letters - History of cyclodextrin-based polymers in food and pharmacy: a review** ^[188]

This review presents crosslinking and grafting to prepare covalently-attached cyclodextrins, and applications in the food and pharmaceutical sectors, from an historical point of view.

- **Pharmacy - COVID the Catalyst for Evolving Professional Role Identity? A Scoping Review of Global Pharmacists' Roles and Services as a Response to the COVID-19 Pandemic** ^[189]

The research explores what is known about the roles and services performed by frontline pharmacists during the first year of the COVID-19 pandemic.

- **Journal of Pharmaceutical Analysis - Current diagnostic and therapeutic strategies for COVID-19** ^[190]

The article summarises the current diagnostic tools and therapeutic strategies for COVID-19.

- **British Journal of Pharmacology - Drug synergy of combinatory treatment with remdesivir and the repurposed drugs fluoxetine and itraconazole effectively impairs SARS-CoV-2 infection in vitro** ^[191]

The research investigates the therapeutic potential of targeting the interface of SARS CoV-2 with the host via repurposing of clinically licensed drugs and evaluated their use in combinatory treatments with virus- and host-directed drugs in vitro.

- **The Journal of Hospital Infection - Evaluation of procalcitonin as a contribution to antimicrobial stewardship in SARS-CoV-2 infection: a retrospective cohort study** ^[192]

This study evaluated the effectiveness of a guideline implemented at Sheffield Teaching

Hospitals NHS Foundation Trust that recommends withholding antibiotics in patients with low serum procalcitonin (PCT), defined as ≤ 0.25 ng/mL.

- **The Journal of Hospital Infection - SARS-CoV-2 viability on different surfaces after gaseous ozone treatment: a preliminary evaluation** [193]

The report shares information on an investigation into the use of gaseous ozone as a potentially effective sanitizing method against the new coronavirus.

- **American Journal of Health-System Pharmacy - Development, implementation, and evaluation of a clinical decision support tool to improve naloxone coprescription within military health system pharmacies** [194]

The research describes the development, implementation, and evaluation of a pharmacy clinical decision support tool designed to increase naloxone coprescription among people at risk for opioid overdose in a large healthcare system.

- **American Journal of Health-System Pharmacy - Providing essential clinical pharmacy services during a pandemic: Virtual video rounding and precepting** [195]

The research outlines the preparation for remote clinical services, the technology utilised, the perspectives of pharmacy preceptors and residents, and barriers encountered.

- **Clinical Microbiology and Infection - Intravenous immunoglobulin treatment for patients with severe COVID-19: a retrospective multi-center study** [196]

The study evaluated the effectiveness of Intravenous immunoglobulin (IVIG) treatment in severe COVID-19 patients.

- **Dermatologic Therapy - Recognition and Treatment of Devastating Vasculopathic Systemic Disorders: Coronavirus Disease 2019 (COVID-19) and Rickettsioses** [197]

The research reviews the Devastating Vasculopathic Systemic Disorders, emphasizing the importance of cutaneous involvement, while also discussing possible therapeutic interventions.

- **Medicina Intensiva - Primera y segunda oleada de enfermedad por coronavirus-19: un estudio comparativo en pacientes hospitalizados en una UCI de un hospital universitario de tercer nivel** [198] | **First and second wave of coronavirus-19 disease: A comparative study in patients hospitalized in an ICU of a third-level university hospital**

The research reveals differences in the therapies used in the two periods of time studied, without specifying significant differences in the mortalities analysed.

- **Journal of the American Pharmacists Association - Clinician burnout during the COVID-19 pandemic before vaccine administration** [199]

The study characterizes the impact of COVID-19 on pharmacists' employment status, workload, and feelings of burnout, as well as to examine emotional health concerns related to COVID-19.

- **ejHAEM - Models of care for chronic myeloid leukemia patients during the COVID-19 pandemic in the United Kingdom: Changes in patient attitudes to remote consultations and future implications** [200]

The study aims to investigate the experiences and opinions of chronic myeloid leukemia (CML) patients in the UK in relation to the different models of follow-up care that they have been receiving during the COVID-19 pandemic.

- **Nature Medicine - Post-acute COVID-19 syndrome** [201]

Comprehensive review of the current literature on post-acute COVID-19, its pathophysiology and its organ-specific sequelae.

- **The Journal of Obstetrics and Gynaecology Research - Severe coronavirus disease pneumonia in a pregnant woman at 25 weeks' gestation: A case report** [202]

Description of a case of a severe COVID-19 infection in a pregnant woman requiring tracheal intubation and artificial ventilation, as well as a cesarean section performed in the extremely preterm period.

- **American Journal of Health- System Pharmacy - Trust your gut: Effect of a pharmacist-driven pilot project to decrease alvimopan use post gastrointestinal recovery in postsurgical patients** [203]

Evaluation of the efficacy of a pilot alvimopan stewardship program aimed at intervening to discontinue alvimopan use following accelerate gastrointestinal (GI) recovery.

- **Journal of Hypertension - 33. Characteristics and Comorbidities of Hypertensive Patients in Sanglah General Hospital during COVID-19 Pandemic** [204]

The aim of this study is to define the characteristics and comorbidities among hypertensive patients in outpatient settings during pandemic era.

- **Pharmacien Hospitalier et Clinicien - Case report : contexte sanitaire Covid-19, un risque supplémentaire d'erreur médicamenteuse ?** [205] | **Case report: Covid-19 health context, an additional risk of medication error?**

The study aims to identify and analyse the causes of this adverse event.

- **Journal of Hypertension - Adherence to anti-hypertensive treatment on the COVID-19 pandemic** [206]

The study evaluates the adherence to antihypertensive treatment during the COVID-19 pandemic and associated variables.

- **BMJ Global Health - When technology precedes regulation: the challenges and opportunities of e-pharmacy in low-income and middle-income countries** [207]

The article shares an examination of the e-pharmacy regulatory systems in low-income and middle-income countries.

- **Endocrine - International Journal of Basic and Clinical Endocrinology - Clinical management of patients with genetic obesity during COVID-19 pandemic: position paper of the ESE Growth & Genetic Obesity COVID-19 Study Group and Rare Endo-ERN main thematic group on Growth and Obesity** [208]

This article aims to provide guidance on prevention and treatment of COVID-19 in patients with genetic obesity.

- **European Journal of Hospital Pharmacy - Treatment of high-risk bleeding with susoctocog alfa in a patient with acquired haemophilia A and a nosocomial severe acute respiratory syndrome coronavirus 2 infection** [209]

The article contains an analysis of the safest and most effective treatment in controlling severe acute acquired haemophilia A with susoctocog alfa.

- **American Journal of Health- System Pharmacy - Proposed guidance on cost-avoidance studies in pharmacy practice** [210]

The article contains guidance for conducting cost-avoidance studies pertaining to clinical pharmacy practice.

- **International Journal of Pharmacy Practice - Assessing the impact on pharmacists' time by introducing a technician screening process for clinical trial prescriptions** [211]

Evaluation of the amount of pharmacists' time saved by the introduction of technician screening of clinical trial prescriptions.

- **International Journal of Pharmacy Practice - Intra and Inter-professional working: how have pharmacists' working practices changed during the COVID-19 pandemic?** [212]

The project explores the impact of COVID-19 on working relationships within pharmacy and multidisciplinary teams.

- **The Journal of the American College of Clinical Pharmacy (JACCP) - Implementation and evaluation of a virtual objective structured clinical examination for pharmacy students** [213]

This article describes the implementation and evaluation of a two-station virtual OSCE (vOSCE) for first-year pharmacy students.

- **Pharmacotherapy - Use of Remdesivir in Myasthenia gravis and COVID-19** [214]

Description of the first reported clinical course of three patients with myasthenia gravis who safely received remdesivir in combination with dexamethasone for the management of COVID-19.

- **The Journal of the American College of Clinical Pharmacy (JACCP) - Pharmacists leadership in a medication shortage response: Illustrative examples from a health system response to the COVID-19 crisis** [215]

As medication experts, clinical pharmacists play an active and dynamic role in a medication shortage response. The profound, wide-reaching medication shortages that accompanied the coronavirus disease 2019 (COVID-19) pandemic are used to highlight coordinated but distinct practices and how they have been combined to expand the influence of the pharmacy enterprise.

- **American Journal of Health-System Pharmacy - Optimization of critical care pharmacy clinical services: A gap analysis approach** [216]

The article analysis critical care pharmacy clinical services and provides suggestions for optimization.

- **Hospital Pharmacy - In Vitro Assessment for Dose Preparation and Simulated Administration of Azithromycin Suspensions via Enteral Feeding Tubes** [217]

The aim of this study was an in vitro assessment for the dose preparation and simulated administration of azithromycin suspensions, prepared from tablets and capsules, via nasogastric feeding tubes (NGT).

- **International Journal of Pharmacy Practice - Assessing the impact on pharmacists' time by introducing a technician screening process for clinical trial prescriptions** [211]

The article contains an evaluation of the amount of pharmacists' time saved by the introduction of technician screening of clinical trial prescriptions.

- **Journal of Pharmaceutical Analysis - The potential of miRNA-based therapeutics in severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection: A review** [218]

This review systematically summarises the potential targets of miRNA-based therapies for SARS-CoV-2 infection and examines the viability of possible transfection methods.

- **Journal of Pharmaceutical Analysis - Accurate and sensitive determination of hydroxychloroquine sulfate used on COVID-19 patients in human urine, serum and saliva samples by GC-MS** [219]

The study assesses several liquid phase microextraction and solid phase extraction methods to determine the most efficient method for the preconcentration of hydroxychloroquine sulfate.

- **Journal of Pharmacy Practice - Hospital Pharmacy Response to COVID-19 Pandemic in Italy: What We Learned From the First Outbreak Wave** [220]

The aim of this study was to describe the impact of COVID-19 emergency on pharmaceutical care provided by pharmacists during the first wave of the pandemic.

- **Hospital Pharmacy - In Vitro Assessment for Dose Preparation and Simulated Administration of Azithromycin Suspensions via Enteral Feeding Tubes** [217]

The article provides the in vitro assessment for the dose preparation and simulated

administration of AZM suspensions, prepared from tablets and capsules, via nasogastric feeding tubes (NGT).

- **NEW! Hospital Pharmacy - Virtual Coaching Delivered by Pharmacists to Prevent COVID-19 Transmission** [221]

The article assess whether pharmacist-based virtual health coaching sessions could increase the proportion of people who practised healthy social behaviors, to test whether this model can increase the public acceptance of COVID-19 vaccines and to measure whether these behaviors could actually prevent contracting COVID-19.

- **NEW! Turkish Journal of Physiotherapy and Rehabilitation - Pharmacy students' perceptions on the use of online learning during the Covid-19 pandemic: Advantages, limitation and recommendations** [222]

This survey provides more information about online pharmacy education and learning in perception of students, including its advantages, limitations, and recommendations.

- **NEW! International Journal of Clinical Pharmacology and Therapeutics - Increased pharmacy purchases of cardiovascular drugs from wholesalers prior to the first and second COVID-19 lockdowns** [223]

The aim of this study was to examine the development of drug purchases over the course of the coronavirus crisis in Germany in 2020.

- **NEW! International Journal of Health Planning and Management - Kanban system applications in healthcare services: A literature review** [224]

A literature review focused on Kanban methodology applied to health care to improve hospital management in pandemic periods, such as the one currently lived on COVID-19.

The disclaimer for the EAHP COVID-19 Resource Centre can be found [here](#) [225]

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