

## DIGITAL POSTER PRESENTATIONS

### Theme 1: Health services response to Covid-19

#### PREVALENCE OF BACTERIAL COINFECTION AND PATTERNS OF ANTIBIOTICS PRESCRIBING IN PATIENTS WITH COVID-19: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Introduction:** Evidence on prevalence of bacterial coinfection in Coronavirus Disease 2019 (COVID-19) is controversial; previous global viral respiratory pandemics reported high prevalence of bacterial coinfection, which was associated with increased risk of morbidity and mortality (1). Data on Prevalence of antibiotic prescribing in COVID-19 indicates high antibiotic prescribing, causing a potential setback in antimicrobial stewardship and potential increase in antimicrobial resistance (2). The study protocol was registered in the international register of systematic reviews, PROSPERO, under the following ID: CRD42021261734

**Aim:** to determine the prevalence of bacterial coinfection and antibiotic prescribing in COVID-19 patients

**Methods:** Systematic review and meta-analysis was conducted using Covidence. Data were extracted by one reviewer. Proportion data was pooled using random effects meta-analysis approach using STATA 17; and stratified based on region and study design. *Data Source:* OVID MEDLINE, OVID EMBASE, Cochrane and MedRxiv between January 2020 and June 2021. *Study Eligibility:* English language studies of laboratory-confirmed COVID-19 patients which reported (a) prevalence of bacterial coinfection and/or (b) prevalence of antibiotic prescribing with no restrictions to study designs or healthcare setting. *Participants:* Adults with RT-PCR confirmed diagnosis of COVID-19

**Results:** a total of 1058 studies were screened, of which 22 studies were eligible. Retrospective cohort studies accounted for the majority of the studies involved (n = 18, 81%), whilst prospective cohort studies accounted for the remaining (n=4, 18%). Of the 22 studies included, 3 (13%) studies were pre-prints whilst the remaining (n=19, 86%) were peer-reviewed. A total of 13 (59%) studies were conducted in multicentre settings, whilst the remaining (n=9, 40%) were conducted in single centre settings. All of the studies included were conducted in hospital setting, whether it be in a normal, isolation or an intensive care ward. Twenty-one out of 22 studies have been rated “Good” rating during the quality assessment process. Pooled estimates for the prevalence of bacterial co-infection and antibiotic use were 5.62% (95% CI 2.26 – 10.31) and 61.77% (CI 50.95 – 70.90), respectively.

**Conclusion:** The prevalence of bacterial coinfection amongst COVID-19 patients is low (5.62%) when compared with previous pandemics, yet antibiotic prescribing in COVID-19 patients was high (61.77%) indicating the need for stronger antimicrobial stewardship to reduce the global

threat of AMR. Prescribing of antibiotics in COVID-19 should be based on clinical and/or laboratory evidence of bacterial coinfection. Key strengths of this review, is that it included a comprehensive search strategy spanning over several databases, including both pre-prints and peer-reviewed studies. Limitations in this review was that during the screening process, a significant number of studies have been excluded due to not meeting the inclusion criteria, therefore, bacterial coinfection and antibiotic use may be under- or over-reported. In addition, disproportionate representation from North America and failure to include studies from regions other than Europe and Asia, can limit the generalizability of the results to other regions impacted by COVID-19

#### References

- (1) Morris DE, Cleary DW, Clarke SC. Secondary bacterial infections associated with influenza pandemics. *Front Microbiol.* 2017;8:1041.
- (2) International Severe Acute Respiratory and Emerging Infections Consortium (ISARIC). COVID-19 Clinical data report. 19May 2020.

#### CHANGES TO COMMUNITY PHARMACY PRACTICE DURING THE COVID-19 PANDEMIC: A CROSS-COUNTRY DOCUMENTARY ANALYSIS

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**Introduction:** Community pharmacy has played a frontline role during the COVID-19 pandemic (1,2). Governments and professional organisations in the United Kingdom and Republic of Ireland (RoI) have acknowledged the need to support and maximise community pharmacy to maintain delivery of patient care. However, the pandemic's impact on day-to-day changes to community pharmacy practice has not been comprehensively examined across the island of Ireland.

**Aim:** To identify changes as communicated by policy and professional bodies to community pharmacy practice across the island of Ireland in preparation for and/or response to the COVID-19 pandemic, and to compare identified changes in Northern Ireland (NI) and RoI.

**Methods:** Government, health service, regulatory and professional organisation websites in both NI and RoI were searched using relevant search terms (e.g. pharmacist, COVID-19). Any document (e.g. official publications/reports, website pages, circulars) containing information relating to changes to community pharmacy-related infrastructure, funding/resourcing, legislation, guidelines or policies in preparation for, and/or response to, COVID-19, published between 1<sup>st</sup> January and 31<sup>st</sup> October 2020 was included. Guidelines on clinical use of medicines were excluded as this was considered a separate topic. Initial screening of each website was undertaken by one reviewer. Brief details of potentially relevant documents were collated in a spreadsheet. Following removal of duplicates, full-texts of identified documents were assessed for inclusion by two reviewers independently, with discrepancies resolved through discussion. A content analysis was undertaken.

**Results:** In total, 253 documents were identified. Following removal of duplicates and screening, 98 documents were included in the analysis. Most documents were published in the first three months of the pandemic (March-May 2020). A key theme related to medication prescribing and supply, with changes implemented to ensure continued access to medicines. In both NI and RoI, significant changes were made to emergency supply arrangements (e.g. increase in allowable duration of supply at the request of patients). In RoI, legislative changes were made to recognise Healthmail as the national electronic prescription transfer system and to temporarily extend prescription validity. In NI, many community pharmacy services (e.g. Minor Ailments Service, Medicines Use Review) were 'stood down' during initial months of the pandemic. Much of the communication in NI and RoI related to operational changes to ensure business continuity. In both jurisdictions a temporary register of pharmacists was introduced to allow previously registered pharmacists to contribute to the health service response. Additionally, in NI, General Dental Practitioners were redeployed to assist with community pharmacy response. Other areas of focus across both jurisdictions included infection control within a workplace setting, dealing with situations where staff were affected by COVID-19, and the use of personal protective equipment during pharmacy service provision.

**Conclusion:** This study examined changes in community pharmacy practice across two jurisdictions during the COVID-19 pandemic. Whilst our searches were limited to publicly accessible documents only, the overlap in identified changes reflects the similarities in challenges faced by community pharmacists in adapting and responding to COVID-19. The cross-country comparison may help pharmacists and policy-makers to identify optimal approaches for responding to any future public health crises.

## References

- (1) Cadogan CA, Hughes CM. On the frontline against COVID-19: community pharmacists' contribution during a public health crisis. *Res Soc Adm Pharm.* 2021; 17(1): 2032-2035.
- (2) Maidment I, Young E, MacPhee M, Booth A, Zaman H, Breen J, Hilton A, Kelly T, Wong G. Rapid realist review of the role of community pharmacy in the public health response to COVID-19. *BMJ Open.* 2021; 11(6): e0500043

## MPHARM STUDENTS' RESPONSE TO PHARMACY STAFF SHORTAGES DURING LOCKDOWN

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**Introduction:** During the first lockdown period of the COVID-19 pandemic, pharmacy students, particularly those with previous experience, were encouraged to help address staff shortages in pharmacy practice (1).

**Aim:** This study investigated the response of pharmacy students at Keele University to the request for help to address staff shortages in practice during lockdown.

**Methods:** An online survey using Google Forms was developed based on addressing the aim of the study and a working knowledge of pharmacy practice. The survey was piloted on academic pharmacists, and after minor amendments, was disseminated to all students in years 2, 3 and 4 of the MPharm course, along with a participant information

sheet. Questions regarding consent were incorporated into the Google Form. The survey consisted of a range of question types: tick-box, Likert scale, multiple-choice and free text. A reminder email was sent out to increase response rate. The data were analysed using descriptive and inferential statistics, using Microsoft Excel and SPSS version 24.0.

**Results:** The online survey was distributed to 352 students. A total of 106 responses were collected; providing a response rate of 30.1%. Fifty-nine (55.7%) of these students did not undertake paid employment in a pharmacy during lockdown, compared to 47 (44.3%) who did. Of the 47 who did, most obtained paid employment in a community pharmacy (n=42; 89%), the rest in hospital. Seventy percent of respondents (n = 74) had undertaken work experience in a community pharmacy prior to lockdown. A number of reasons were given for choosing not to work in a pharmacy, including needing time to study for exams or living with a vulnerable family member, but the most frequent reason reported (40.7%) was that students found it difficult to find work. For those students who did work in a pharmacy during lockdown, the reported reasons varied, with the most frequent being to gain experience (n = 35; 74.5%), followed by a sense of duty to help the community (n=31; 66.0%). The time spent working ranged from 8 to 40 hours per week. The majority of students reported working in the dispensary and on the medicines counter, undertaking a wide range of activities. Final year students and those who had previously undertaken work experience in a pharmacy were statistically more likely to obtain paid employment during lockdown. Perceived advantages to working during lockdown included the opportunity to improve communication and clinical skills and apply theory to practice, as well as being able to 'give back' to the community. 97.9% (n= 46) reported feeling under pressure whilst working, although 72.3% (n=34) reported that they enjoyed working despite this.

**Conclusion:** Pharmacy students had various reasons for choosing to work in practice or not during lockdown. Those who did work reported benefiting from the experience in a number of ways. This suggests that pharmacy students with prior experience of pharmacy working, should be encouraged to offer their support in times of staff shortages if future lockdowns occur.

## Reference

- (1) Supporting the COVID-19 response: Joint Guidance: Facilitating deployment of pharmacy undergraduate students to support the pharmacy workforce. Health Education England, NHS Education for Scotland, Health Education and Improvement Wales, Pharmacy Schools Council, Royal Pharmaceutical Society and the British Pharmaceutical Students' Association. 09 April 2020, pp.1-9. Available at: <https://www.hee.nhs.uk/sites/default/files/documents/MPharm%20student%20deployment%20joint%20guidance%20FINAL.pdf> [Accessed 14 October 2021].

## PROVIDING PHARMACY SUPPORT TO HOUSEBOUND PATIENTS: LEARNING FROM THE COVID-19 PANDEMIC

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