

**Supplementary Table 1. Characteristics of sources of evidence**

	<b>Authors (Publication Year)</b>	<b>Type of study</b>	<b>Location</b>	<b>Study aim</b>	<b>Targets of eHealth pharmacy service</b>	<b>Types of pharmacists involved</b>
1	Abdallah et al. (2020) <sup>20</sup>	Descriptive study	Qatar	To share the experience and describe the measures adopted by the clinic as part of the Hamad Medical Corporation response to the emerging situation	Patients who were elderly or immunocompromised, and referred to the clinic or anticoagulation emergencies;	Hospital pharmacists
2	Do et al. (2021) <sup>23</sup>	Descriptive study	The United States	To discuss the objectives and strategies used by an ambulatory care action team operating within a large health system's pharmacy incident command structure during the initial response to the coronavirus disease 2019 (COVID-19) pandemic	Patients of the pulmonary clinic	Hospital pharmacists
3	Goff et al. (2020) <sup>24</sup>	Descriptive study	The United States	To described how pharmacists from high and low-middle income countries contributed to essential patient care and well-being of the public during the COVID-19 pandemic	General Public	Pharmacists specializing in infectious diseases (ID)
4	Liao et al. (2020) <sup>26</sup>	Descriptive study	China	To described the roles and contributions of pharmacists in Shanghai during the coronavirus disease 2019 (COVID-19) pandemic	Adult patients with COVID-19	Clinical pharmacists and pharmacists of traditional Chinese medicine (TCM)
5	Allison et al. (2021) <sup>21</sup>	Descriptive study	The United States	To evaluated how to balance the need to provide essential pharmacy services (both operational and clinical), develop telework strategies, and maintain a viable workforce for the duration of the COVID-19 pandemic	Inpatients and discharged patients	Hospital pharmacists

6	Margusino-Framiñán et al. (2020) <sup>28</sup>	Descriptive study	Spain	To describe and analyze the experience of HPSs with outpatient Telepharmacy during the COVID-19 pandemic and exposed the lessons learned	Outpatients	Primary care pharmacists; Community Pharmacists
7	Mohammad et al. (2020) <sup>29</sup>	Descriptive study	The United States	To emphasize clinical and experiential challenges that ambulatory care clinical pharmacists had been facing, generate discussion, and provide examples of potential solutions that could serve as a framework for COVID-19 ambulatory care practices and experiential sites	Patients on warfarin therapy	Hospital pharmacists
8	Reardon et al. (2020) <sup>30</sup>	Descriptive study	Canada	To describe the UBC Pharmacists Clinic's technical systems and lessons learned using enabling technology and the provision of virtual patient care by pharmacists	Patients who needed to visit the pharmacist clinic	Hospital pharmacists
9	Segal et al. (2020) <sup>31</sup>	Descriptive study	The United States	To describe an expedited process used to obtain telehealth privileges for pharmacists and highlighted the experience providing clinical services to patients with COVID-19	Patients with chronic conditions and cancer	Hospital pharmacists
10	Warda et al. (2021) <sup>32</sup>	Descriptive study	The United States	To describe the uptake and impact of pharmacist-led virtual medication tours during telehealth visits in the CF clinic setting	Patients with cystic fibrosis	Pharmacists specializing in cystic fibrosis
11	Yerram et al. (2021) <sup>33</sup>	Descriptive study	The United States	To present the approach of restructuring clinical pharmacy services and providing direct patient care in outpatient clinics during the pandemic	Outpatients; Inpatients	Hospital pharmacists
12	Adam et al. (2021) <sup>34</sup>	Case series	Canada	To share the experiences of the pharmacy department of the Centre hospitalier de l'Université de Montréal	COVID-19 patients; Oncology outpatient	Pharmacists in the oncology outpatient; PhT (the ones

				(CHUM) in response to the COVID-19 pandemic		responsible for prescription entry)
13	Al Mazrouei et al. (2021) <sup>35</sup>	Case series	United Arab Emirates (UAE)	To investigate the frequency, nature, and clinical significance of pharmacist interventions on over-the-counter (OTC) medicines with abuse potential across community pharmacies with and without virtual care	Patient who used over-the-counter medicines	Community pharmacists; Hospital pharmacists
14	Alhmod et al. (2021) <sup>36</sup>	Cross-sectional survey	Qatar	To evaluate the impact of transitioning from clinic-based anticoagulation management services to drive-up and phone-based services during COVID-19 pandemic in Qatar	Patients who attended anticoagulation clinic over 1-year period (6 months before and 6 months after service transition)	Pharmacists providing anticoagulation services
15	Chen et al. (2021) <sup>37</sup>	Cross-sectional survey	China	To investigate the characteristics, acceptance, and initial impact of the Cloud SYSUCC app during a COVID-19 outbreak in a tertiary cancer hospital in China	Patient with cancer treated with prescription medicines (such as breast cancer, liver cancer, and thyroid cancer) who needed to visit the cancer center	Hospital pharmacists
16	Li et al. (2021) <sup>38</sup>	Cross-sectional survey	China	To retrieve and investigate the prevention and control measures of clinical pharmacists during the outbreak of novel coronavirus, summarize the roles and responsibilities of clinical pharmacists, and to propose innovative strategies for developing pharmacy services under the epidemic	Patients in Fangcang shelter hospitals	Hospital pharmacists
17	Livet et al. (2021) <sup>39</sup>	Cross-sectional survey	The United States	To describe the feasibility of expanding a comprehensive medication management (CMM) telepharmacy service to include social determinants of health(SDOH) support expanded service, evaluated stakeholders'	Diabetic patients with HbA1c > 9, at least one additional comorbidity, five or more medications, and at least 18 years of age	Hospital pharmacists

				experience with the service, and assessed short-term impact on patients with diabetes		
18	Brown et al. (2021) <sup>40</sup>	Retrospective study	The United States and the United Kingdom	To offer a template for other centers to develop their own new Cardio-Oncology clinics with Virtual-Hybrid Approach during the pandemic	Patients with cancers (e.g., breast, prostate, leukemia, lung) or cardiovascular toxicities (e.g., cardiomyopathy, hypertension) who needed to visit Cardio-Oncology clinic	Hospital pharmacists
19	Cashman et al. (2020) <sup>22</sup>	Descriptive study	Australia	To integrate the electronic healthcare delivery systems at a metropolitan hospital and a rural outreach haematology clinic to facilitate streamlined and safe outpatient care	Hematology outpatients	Pharmacists specializing in hematology/oncology
20	Kjerengtroen et al. (2020) <sup>25</sup>	Descriptive study	The United States	To describe and share the plan developed by Intermountain Medical Center (IMED) in Murray, UT which provides remote clinical pharmacy services to protect the health of pharmacy caregivers while maintaining appropriate clinical pharmacy coverage to optimally care for patients	Hospitalized patients in a quaternary, level I trauma and comprehensive stroke center and patients from off-site locations	Hospital pharmacists; Pharmacists specializing in critical care, internal medicine or cardiology
21	Marchese et al. (2021) <sup>27</sup>	Descriptive study	Canada	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 in March–April 2020	Patients receiving systemic cancer treatment	Pharmacists specializing in oncology
22	Park et al. (2021) <sup>41</sup>	Retrospective study	The United States	To describe a quality assurance and performance improvement initiative of the implementation of comprehensive	Lung transplant providers (LTP)	Pharmacists specializing in

				medication management visits, pharmacists were able to assist LTP in the transition to telemedicine		cardiothoracic (CT) transplant
23	Falconer et al. (2021) <sup>42</sup>	Semi-structured interview	Australia	To determine the key opportunities for a pharmacist informatician to improve patient care and outcomes during the COVID-19 pandemic	Patients with COVID-19	Pharmacists specializing in informatics
24	Gona et al. (2020) <sup>43</sup>	Cross-sectional survey	India	To assess the clinical pharmacist-initiated telephone-based patient education and self-management support for patients with cardiovascular disease during the nationwide lockdown during COVID-19 pandemic	Patients with existing cardiovascular diseases	Hospital pharmacists
25	Koster et al. (2021) <sup>45</sup>	Cross-sectional survey	Netherlands	To describe the impact of the COVID-19 epidemic on the provision of pharmaceutical care in the Netherlands	Vulnerable patients	Community pharmacists
26	Muflih et al. (2021) <sup>46</sup>	Cross-sectional survey	Jordan	To examine pharmacists' attitudes towards clinical benefits and identify challenges regarding the use of telepharmacy during the COVID-19 pandemic in Jordan	Patients with COVID-19	Community pharmacists; Hospital pharmacists
27	Tortajada-Goitia et al. (2020) <sup>47</sup>	Cross-sectional survey	Spain	To analyze 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	Outpatients	Hospital pharmacists
28	Wang et al. (2021) <sup>48</sup>	Cross-sectional survey	China	To evaluate the usefulness of clinical prevention and control measures of clinical pharmacists at Jiangnan Fangcang Hospital	Patients with chronic diseases	Hospital pharmacists

29	Al Meslamani et al. (2021) <sup>49</sup>	Case series	Egypt	To describe the experience of six hospitals in the management of COVID-19 patients in rural areas through an assessment of proportions, types and clinical outcomes of remote clinical interventions	Patients with COVID-19 who lived in rural areas	Hospital pharmacists
30	Ibrahim et al. (2020) <sup>50</sup>	Case series	The United States	To examine differences in rates and types of pharmacist interventions related to COVID-19 and medication dispensing errors (MDEs) across community pharmacies with and without telepharmacy services	Patients with suspected or confirmed COVID-19 infection	Community pharmacists
31	Mohamed Ibrahim et al. (2021) <sup>51</sup>	Case series	United Arab Emirates (UAE)	To assess the predictors for effective telepharmacy services on increasing access of patients to care and reducing dispensing errors in community pharmacies	Patients with probable or confirmed COVID-19 infection	Community pharmacists
32	Cope et al. (2021) <sup>52</sup>	Retrospective study	The United States	To describe the care provided during the COVID-19 pandemic at a pharmacist-run anticoagulation clinic in the New York Metropolitan area and evaluates the impact on clinic outcomes	Outpatients with chronic diseases	Hospital pharmacists
33	Sorbera et al. (2021) <sup>53</sup>	Retrospective study	The United States	To measure the impact of pharmacy services including telehealth through the percentage of virologically suppressed patients (HIV ribonucleic acid [RNA] < 200 copies/mL) during the pre-COVID and post-COVID time periods	HIV-positive patients	Hospital pharmacists
34	Huibo Li et al. (2021) <sup>44</sup>	Cross-sectional survey	China	To establish and launch a telepharmacy framework to implement pharmaceutical care during the COVID-19 pandemic.	Patients with chronic diseases requiring long-term use of medications who were quarantined at home	Pharmacist volunteers

35	Ana Peláez Bejarano, et al. (2021) <sup>54</sup>	Cross-sectional survey	Spanish	To design a model that would facilitate access to hospital medication during home quarantine due to COVID-19, and ensure patient satisfaction with this process	Patients with acute illnesses or complex chronic conditions who were confined to home quarantine due to the pandemic	Community pharmacists; Hospital pharmacists
36	Anusha McNamara, et al. (2021) <sup>55</sup>	Retrospective study	The United States	To evaluate the impact of clinical pharmacist care via in-person and telehealth by comparing the average MRPs resolved during the visits	Patients and individuals regardless of insurance status	Hospital pharmacists
37	Najla J. Alhraiwil, et al.(2021) <sup>56</sup>	Descriptive study	Saudi Arabia	To understand the impact of the COVID-19 pandemic on Call Center services, specifically medical consultations, to suggest future recommendations for patient care optimization	Citizens, residents, and visitors	Pharmacists
38	Syed Iqbal Mohiuddin, et al. (2021) <sup>57</sup>	Descriptive study	Saudi Arabia	To emphasize the implementation of the pharmacist-led medication management clinic services in the Johns Hopkins Aramco Healthcare (JHAH) ambulatory pharmacy care setting using communication technologies	Geriatric patients with chronic conditions	Clinic pharmacists responsible for medication management
39	Zhiling Li, et al. (2021) <sup>58</sup>	Descriptive study	China	To share our strategies and efforts with peers who are fighting against COVID-19 in other countries and regions	Pediatric patients with COVID-19	Hospital pharmacists
40	Patrycja Grosman-Dziewiszek, et al. (2021) <sup>59</sup>	Cross-sectional survey	Poland	To investigate the new coronavirus disease 's effect on patients' health habits, access to healthcare, and attitude to vaccination	Patients in general	Hospital pharmacists
41	Rania Itani, et al. (2021) <sup>60</sup>	Cross-sectional survey	Lebanon	To identify the pharmaceutical care provided by community pharmacists to suspected high-risk COVID-19 patients using telehealth	Elderly individuals and those with underlying chronic medical conditions	Community pharmacists

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42	Maha Al Ammari, et al. (2021) <sup>61</sup>	Prospective study	Saudi Arabia	To assess the tele-pharmacy anticoagulation clinic's efficiency and patient satisfaction in Saudi Arabia during the COVID-19 pandemic	Patients with diabetes mellitus and hypertension	Hospital pharmacists
43	Milena Kovačević, et al. (2021) <sup>62</sup>	Descriptive study	Republic of Srpska, Bosnia and Herzegovina	To describe the remote pharmaceutical care service (telepharmacy) during the COVID-19 pandemic in the Republic of Srpska (RS), Bosnia and Herzegovina; To identify service users' needs and concerns and to describe community pharmacists' interventions	Patients with chronic or acute/subacute conditions	Community pharmacists

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