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Collateral benefit of non-pharmacological interventions against COVID-19 to prevent community-acquired pneumonia in Jin-Shan, New Taipei, April to December 2020

KEYWORDS

COVID-19;
Respiratory infection;
Pneumonia;
Chronic disease;
Collateral benefit

To the editor,

Since the end of December 2019, a novel coronavirus disease 2019 (COVID-19) has engendered a tremendous health burden worldwide. The COVID-19 pandemic can place extraordinary demands on healthcare systems and lead to collateral damage by delaying medical care of non-COVID conditions.¹ On the other hand, implementation of non-pharmaceutical interventions (NPIs) against COVID-19 had been shown collateral benefit to prevent other infectious diseases transmitted by droplets or direct contact.^{2,3} Data from a closed community not affected by significant population migration may provide further data to clarify the interplay between collateral benefit and damage.

Shortly after the first confirmed case identified in Taiwan, the Central Epidemic Command Center (CECC) recommended several preventive measures for the general population, including face mask use, hand hygiene, and social distancing (Supplementary Figure 1).^{4,5} We conducted a retrospective study at the National Taiwan University Hospital Jin-Shan Branch from 2017 to 2020. Patients were included if they visited the hospital for the target infectious diseases (respiration infection, skin and soft tissue infection, and urinary tract infection) and chronic diseases (hypertension and diabetes mellitus). The

number of patient visits was compared between the baseline period (2017–2019), epidemic period (2020), and predictions in the epidemic period from the trends in the baseline period. While the outpatient visits in 2020 increased compared with that in 2017–2019 (6448 vs. 6001 patient visits per month; percent change, 7.5%), the emergency department visits in 2020 decreased (749 vs. 888 patient visits per month; percent change, –15.7%) (Supplementary Table 1). The rising trends were also observed in the number of patients visiting for hypertension (percent change, 9.2%), diabetes mellitus (11.2%), urinary tract infection (30.3%), and skin and soft tissue infection (20.0%) (Supplementary Tables 1 and 2). Among target chronic and infectious diseases, respiratory infections were the only diseases with a declining trend (Fig. 1). Overall, the number of patients with respiratory infections decreased from 863 patients per month in 2017–2019 to 822 in 2020 (percent change, –4.8%). In 2020, the number initially increased during January–March (percent change, 11.3%) and then decreased by 15.4% during April–June, 6.0% during July–September, and 10.2% during October–December. Furthermore, the observed number in the epidemic period was lower than 70% of the predicted number since April 2020 (Supplementary Table 2). Among respiratory infections, the decrease in the incidence of

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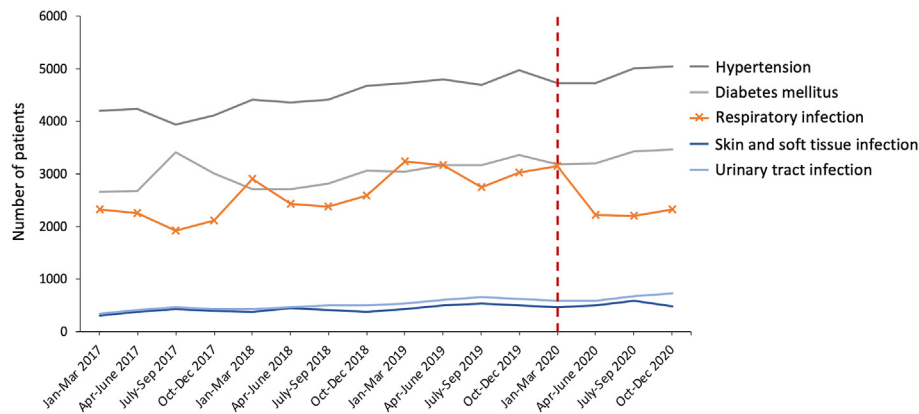


Fig. 1 The trends of patients with target infectious diseases (respiration infections, skin and soft tissue infection, and urinary tract infection) and chronic diseases (hypertension and diabetes mellitus) from 2017 to 2020.

upper respiratory infection was more prominent than pneumonia. The incidence of upper respiratory infection dropped shortly after the COVID-19 epidemic and declined to the largest extent in May 2020 (54.4% of the predicted number; 95% CI, 45.4–67.7%). A slightly downward temporal trend was observed in the incidence of pneumonia, with the largest reduction in August 2020 (56.9% of the predicted number; 95% CI, 50.7–64.7%) (Supplementary Figure 2).

In conclusion, we found that continuous adherence to population-based NPIs contributed to both successful COVID-19 control and collateral benefits on other infectious diseases transmitted through droplets or contact routes. Our findings support incorporating personal NPIs, such as mask wearing and hand hygiene, into our daily routine.

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Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jfma.2021.08.004>.

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