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- 4 Butler J, Finley C, Norell CH, et al. New approaches to cancer care in a COVID-19 world. *Lancet Oncol* 2020; **21**: e339–40.
- 5 Andall-Brereton G, Bromfield B, Smith S, Spence D. Cancer care in the Commonwealth Caribbean in COVID times. *Lancet Oncol* 2020; **21**: 1007–09.
- 6 Maida M. Screening of gastrointestinal cancers during COVID-19: a new emergency. *Lancet Oncol* 2020; **21**: e338.
- 7 Hanna TP, Evans GA, Booth CM. Cancer, COVID-19 and the precautionary principle: prioritizing treatment during a global pandemic. *Nat Rev Clin Oncol* 2020; **17**: 268–70.
- 8 Radbruch L, Knaul FM, de Lima L, de Joncheere C, Bhadelia A. The key role of palliative care in response to the COVID-19 tsunami of suffering. *Lancet* 2020; **395**: 1467–69.
- 9 Pastrana T, De Lima L, Sánchez-Cárdenas M, et al. Atlas de cuidados paliativos en Latinoamérica 2020. Houston, TX: IAHP Press, 2021.
- 10 Dalton M, Holzman E, Erwin E, et al. Patient navigation services for cancer care in low-and middle-income countries: a scoping review. *PLoS One* 2019; **14**: e0223537.



Importance of modelling for cancer management during COVID-19



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See [Articles](#) page 1427

Similar to most countries in Latin America, Chile has been greatly affected by the COVID-19 pandemic with very serious and devastating health and economic consequences. The first case of COVID-19 was detected in Chile on March 3, 2020, and since then the country has been implementing control measures (eg, mass testing, centralised intensive care bed management, and mandatory confinement) as recommended by national and international experts to suppress and mitigate the effect of its spread.¹ By July 31, 2021, Chile, which has a population of about 18 million, had more than 1.6 million confirmed COVID-19 cases, with approximately 36 700 deaths and more than 8900 new daily cases reported in June, but 700 new daily cases in August, 2021. Starting on Feb 3, 2021, Chile has been able to rapidly deploy an effective vaccination campaign and 80% of its target population has been fully vaccinated as of Aug 2, 2021.² Rapid scale up of vaccination has enabled a reduction in severe cases among the vaccinated population and we hope to complete full coverage of our population in the next few months.

However, COVID-19 has created major challenges for the health system in the management of other very important health problems, such as cancer. Most patients with cancer have not been able to access the health system because of capacity constraints (particularly bed shortages) and many have delayed contact with the health system even when they had symptoms because of fear of contracting COVID-19. The unprecedented rapid rise in demand for health services has created major capacity constraints with consequent delays in cancer screening, diagnosis, surgery, radiotherapy, and chemotherapy.^{3,4} The

health policy in Chile is focused on controlling the acute COVID-19 cases but also increasingly on the long-term consequences this pandemic will have on the management of chronic non-communicable diseases, such as cancer, to mitigate the adverse health, social, economic, and cultural consequences of the long physical and social confinements on the population in Chile. Understanding the magnitude of the adverse consequences of COVID-19 on the health system and the management of other conditions is crucial for estimating the true effect of COVID-19. This intelligence is also needed to efficiently and effectively manage non-COVID-19 conditions, to guide policy development, and to enable appropriate planning of services and surge capacity to ensure that the health system is responsive and resilient.

Cancer is the second biggest cause of death after cardiovascular disease in Chile, with around 60 000 new cases a year and approximately 30 000 deaths.⁵ A quarter of all deaths in the country are caused by cancer.⁵ Since 2018, the Chilean Ministry of Health has introduced very important changes for cancer control and care. In 2018, the 2018–28 National Cancer Plan was developed with the participation of civil society, including universities, scientific societies, foundations, and patient groups.⁶ The National Cancer Plan defines a comprehensive national strategy to address cancer in all its aspects, including prevention, early diagnosis, timely treatment, palliative care, and rehabilitation. One of the most important contributions of this plan is the implementation of a population-based cancer registry, which will allow Chile to have relevant information for decision making and public policies. In 2020,

the National Cancer Law was enacted.⁷ The National Cancer Law provides the legal basis for the implementation of the National Cancer Plan by establishing a National Fund for Cancer, creates tax incentives for the participation of private actors (eg, civil society groups, companies, and high-income families) in making available their resources to establish a joined-up approach to effectively finance the cancer response, and creates a National Cancer Law Commission to ensure participation of civil society in decision making and the implementation of the law.

The 2021 study by Zachary Ward and colleagues⁸ quantifies the large and worrisome effect of COVID-19 on Chile's health system, showing the reductions in cancer diagnoses since the beginning of the pandemic. The novel Chile COVID-19 Cancer Projections and Outcomes model developed by the study simulates the incidence and progression of cancer and the stage progression in cancer cases, to estimate the effect of diagnostic delay on excess cancer mortality and 5-year net survival. The model quantifies the very large number of excess cancer deaths in Chile until 2030, as a consequence of the delay in diagnosis. The numbers are likely to be much larger given the potential delay or difficulties in providing timely treatment. The study provides much needed real-time intelligence to the Ministry of Health of Chile to take appropriate action to augment capacity in the health system to more effectively manage cancer care now and in the future, but also to create sufficient surge capacity to ensure an appropriate and timely response to the changing demand for cancer care.

Considering the great effect that COVID-19 has had on cancer care, it is imperative that health authorities and systems have timely information on the effect on postponed, delayed, or foregone access to health care, especially the consequences for excess morbidity and deaths. It is particularly important to quantify the increases in demand that are rising and will continue to rise as the pressure of the pandemic decreases and patients with

cancer begin to access health services. The increase in cancer diagnoses that we expect in the coming months will produce unprecedented stress for the health system in Chile and globally. Therefore, strategic planning and real-time management based on objective data, ongoing analysis, and models are needed for nowcasting, forecasting, and real-time scenario planning to address the massive expected rise in demand. Although globally most countries still face great difficulties in managing COVID-19 and the ensuing demand on health services, we have to develop strategies that allow us to restart cancer screening programmes as soon as possible, reactivate early diagnosis for patients with cancer as stage progression to more advanced disease at presentation can result in worse outcomes, and augment the capacity of cancer services to be able to provide more surgery, chemotherapy, and radiotherapy than what our health system was previously capable of doing. Real-time data analytics and modelling are crucial to enable ministries of health to prepare and establish responsive and resilient health systems.

I declare no competing interests.

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- 1 Haas EJ, Angulo FJ, McLaughlin JM, et al. Impact and effectiveness of mRNA BNT162b2 vaccine against SARS-CoV-2 infections and COVID-19 cases, hospitalisations, and deaths following a nationwide vaccination campaign in Israel: an observational study using national surveillance data. *Lancet* 2021; **397**: 1819–29.
- 2 Shepherd A. COVID-19: Chile joins top five countries in world vaccination league. *BMJ* 2021; **372**: n718.
- 3 Villalobos Dintrans P, Castillo C, de la Fuente F, Maddaleno M. COVID-19 incidence and mortality in the Metropolitan Region, Chile: time, space, and structural factors. *PLoS One* 2021; **16**: e0250707.
- 4 Inzunza M, Besser N, Bellolio F. Decrease in operative volume in general surgery residents in Chile: effects of the COVID-19 pandemic. *Br J Surg* 2021; **108**: e226–27.
- 5 Parra-Soto S, Petermann-Rocha F, Martínez-Sanguinetti MA, et al. Cancer in Chile and worldwide: an overview of the current and future epidemiological context. *Rev Med Chil* 2020; **148**: 1489–95 (in Spanish).
- 6 Ministerio de Salud de Chile. Plan Nacional de Cáncer 2018–2028. 2018. <https://www.gob.cl/plannacionaldecancer/> (accessed Aug 8, 2021).
- 7 Biblioteca del Congreso Nacional de Chile. Ley del cáncer 2020. 2020. <https://www.bcn.cl/leyfacil/recurso/ley-del-cancer> (accessed Aug 8, 2021).
- 8 Ward ZJ, Walbaum M, Walbaum B, et al. Estimating the impact of the COVID-19 pandemic on diagnosis and survival of five cancers in Chile from 2020 to 2030: a simulation-based analysis. *Lancet Oncol* 2021; published online Sept 3. [https://doi.org/10.1016/S1470-2045\(21\)00426-5](https://doi.org/10.1016/S1470-2045(21)00426-5).

Understanding the new therapeutic options for mesothelioma



Since the US Food and Drug Administration (FDA) approved pemetrexed plus cisplatin for first-line treatment of mesothelioma in 2004,¹ there has been a

dearth of additional treatment options for this disease. Despite substantial effort, no other phase 3 study achieved a positive outcome for another 12 years,

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