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Changes to Pediatric Gastroenterology Practice During the COVID-19 Pandemic and Lessons Learned: An International Survey of Division and Group Heads

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The COVID-19 pandemic has caused unprecedented disruptions to medical services and presented numerous challenges for gastroenterology division and group leaders. They have had to respond and adapt rapidly as the pandemic evolves to implement changes to care delivery while maintaining clinical practice, patients' health, and the physical and mental health of staff. The scope of practice change across inpatient and outpatient services and its financial implications, as well as leaders' priorities during reopening and the lessons learned, remain largely unexplored. To address this gap, we aimed to conduct a survey of pediatric gastroenterology division and group heads (DGHS) about their response to the pandemic to understand its impact on pediatric gastroenterology practice and inform future strategies during periods of resurgence. This is the first study, to our knowledge, to provide a comprehensive, international view of the pandemic from the perspective of physician leaders.

Methods

A web-based survey, administered using Qualtrics, was distributed to pediatric gastroenterology DGHS in July and August 2020 by the European and North American Societies for Pediatric Gastroenterology, Hepatology and Nutrition and through an electronic mailing list targeting pediatric gastroenterologists worldwide. The pretested anonymous survey consisted of 45 questions encompassing division/group demographics, pandemic-related changes to practice and care delivery, financial implications and mitigating solutions, priorities during reopening, and lessons learned. [Supplementary Appendix 1](#) provides detailed methodology.

Results

Respondent Characteristics

A total of 116 DGHS representing 20 countries responded; 67.2% (n = 78) were from North America

(91.8% response rate, n = 78/85), 25.9% (n = 30) were from Europe, and 6.9% (n = 8) were from other continents. Most DGHS were from academic institutions (91.4%, n = 106) in an urban setting (85.3%, n = 99), with 52.6% (n = 61) situated in a free-standing children's hospital. Responses represented a variety of division/group sizes (<10 full-time equivalent providers: 65.5%, n = 76; 11–30 providers: 21.6%, n = 25; and >30 providers: 12.9%, n = 15). A stay-at-home order was reported by 95.7% (n = 111), with 75.0% (n = 87) noting that the order had terminated at the time of survey completion.

Clinical and Research Activity

Clinical productivity was affected across multiple areas. At the peak of the pandemic, as compared to the year prior, endoscopy saw the largest decrease, with 77.4% (89/115) reporting a >75% reduction in activity, whereas >75% reductions in ambulatory and inpatient services were reported by 48.7% (56/115) and 47.0% (54/115) of DGHS, respectively. Suspension of all research activities was reported by 46.5% (53/114); COVID-19-related and nonclinical research activities were most often allowed to continue (27.1% continued, 13/48). Responses of DGHS in countries with statutory health insurance compared to those without are detailed in [Supplementary Table 1](#).

Care Delivery

Changes to care delivery were varied and widespread ([Figure 1](#)). The most to least affected were ambulatory services (98.3%, n = 114), endoscopy (97.4%, n = 113), nonendoscopic procedures (84.5%, n = 98), inpatient

Abbreviation used in this paper: DGH, division and group head.

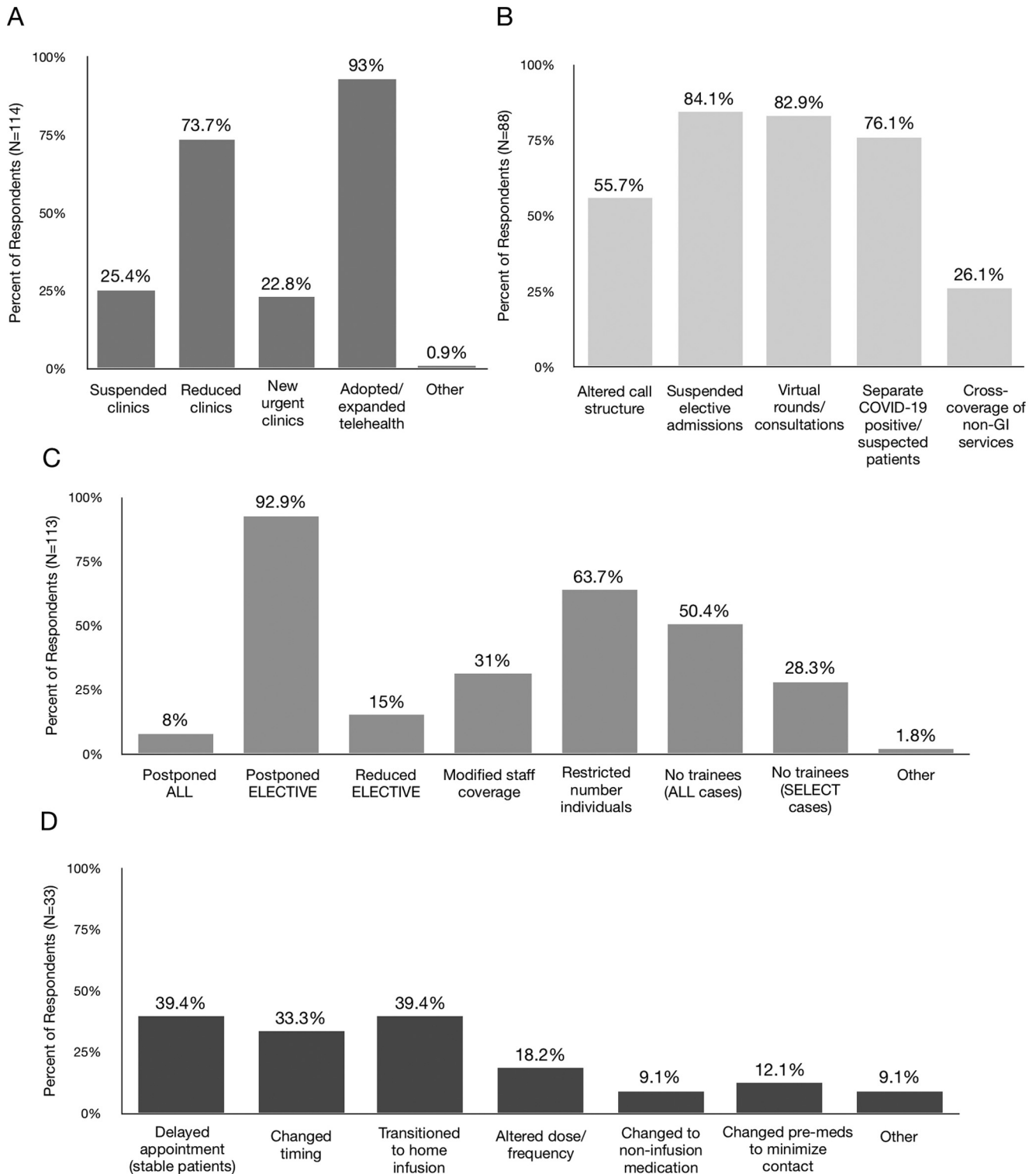


Figure 1. Reported changes to clinical care delivery during the peak of the COVID-19 pandemic in 4 major services: (A) ambulatory, (B) inpatient, (C) endoscopy, and (D) infusions. GI, gastroenterology.

service (75.9%, $n = 88$), and infusions (28.4%, $n = 33$). For nonendoscopic procedures, those requiring intubation (83.7%, 82/98) and pH/impedance studies (80.6%, 79/98) were most frequently postponed.

Unexpected Consequences

Although 50.0% (54/108) of DGHs surveyed reported no compromise in their group's ability to diagnose and manage patients despite care restrictions, 36.1% (39/108) noted

more severe presentations of typical diseases from delays in diagnosis. Twenty percent (22/108) reported increased accidental ingestions.

Financial Implications

Nearly all DGHs reported decreased revenue (98.9%, 87/88). However, estimated losses varied widely, with 75.0% (66/88) reporting a >25% revenue loss. Mitigating strategies included cuts to bonuses, benefits, and salaries, which most frequently affected physicians, and mandatory paid and unpaid leaves, which mainly affected ancillary clinical and administrative staff. Permanent termination was rare. The financial burden weighed significantly less on divisions/groups in countries with statutory health insurance¹ compared to those without (Supplementary Table 1).

Reopening Priorities

The top-rated priorities for the reopening of ambulatory services were management of patient flow and space capacity to maintain safety (59.5%, n = 69), triage of postponed and new patients (55.2%, n = 64), and continued access to telehealth (54.3%, n = 63). Endoscopy-related priorities included triage of postponed procedures (81.0%, n = 94), availability of preprocedural SARS-CoV-2 testing (64.7%, n = 75), and an ability to maintain safe patient flow and space capacity (47.4%, n = 55).

Lessons Learned

DGHs reported on several successful pandemic-related implementations, including those related to virtual care (89.3%), patient triage and flow (38.7%), and virtual work environments (32.0%), as well as ongoing challenges (eg, burnout) and recommended strategies to prepare for re-surges and/or another future pandemic (Supplementary Table 2).

Discussion

Our results show that COVID-19 has had a significant impact on pediatric gastroenterology practice worldwide, with a drastic decrease in reported clinical and research productivity. Although ambulatory and endoscopy-related clinical activities were most affected, practice changes were evident across services. Innovative and adaptive measures were used to minimize transmission risk to both patients and providers while ensuring continuity of care (eg, virtual rounds and modified staffing).

Many DGHs credited telehealth as a crucial enabler for supporting the continuation of care. However, suboptimal technology, equitable access, lack of centralized infrastructure, reimbursement concerns, and scheduling issues were commonly reported challenges. There was strong endorsement that institutional investment in robust telehealth infrastructure is required and, in agreement with previous studies,^{2,3} most DGHs foresee a valuable role for telehealth moving forward.

Given pandemic-related capacity and resource limitations, patient triage protocols emerged as a priority to

balance the need to curtail viral spread with the ramifications of potentially delayed diagnosis, particularly for procedures. Triage protocols may have broad future applications. Recently published guidelines outlining a risk stratification of pediatric endoscopic procedures during the pandemic begin to address this need.⁴

The economic impact of the pandemic was felt worldwide. However, the financial burden weighed more heavily on divisions/groups from countries without centrally regulated statutory health coverage, with significantly more frequent reports of cuts to bonus and salaries as well as furloughs. This may be due to governments providing greater financial protection related to health care in countries with centrally regulated statutory health coverage. A study limitation was that all institutions without statutory insurance were from the United States; other factors inherent to the United States may have contributed to observed differences. As the pandemic persists, the financial resilience of health care systems is important to preserve essential health services and combat widening health inequalities.⁵

Top reopening priorities centered on maintaining safe capacity, appropriate patient triage, personal protective equipment availability, and continued accessibility to telehealth. The long-term management of disruptions to education and provider well-being are also considerations essential to maintaining a healthy and productive health care workforce. Childcare and mental fatigue were cited as major impediments to staff productivity by DGHs. Institutional support for sick coverage and childcare is critical for preventing provider burnout, particularly for female physicians, who assume more household and childcare responsibilities than their male counterparts⁶ and who have been disproportionately affected by pandemic-related disruptions to home and family life.^{7,8} The lessons learned reported by DGHs emphasize the importance of preparation and the establishment of systems to lessen the impact of future pandemics and resurgences.

This study is limited in that an overall response rate is unknown, individuals were required to self-identify as DGHs, and respondents may not reflect the full breadth of practice settings and locations. Additionally, responses reflect practices at the time of the survey completion and may not reflect changes implemented as divisions and groups adapt to the evolving pandemic.

Although children have been less affected by the pandemic than adults, the disruption and stress to health systems has nonetheless created new challenges for the pediatric gastroenterology community and affected care at multiple levels with significant unforeseen effects. These results will be useful to help guide preparations for future pandemics and resurgences.

Supplementary Material

Note: To access the supplementary material accompanying this article, visit the online version of *Gastroenterology* at www.gastrojournal.org, and at <https://doi.org/10.1053/j.gastro.2021.02.064>.

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Conflicts of interest

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