
Fourth round of the global pulse survey on continuity of essential health services during the COVID-19 pandemic: November 2022–January 2023

Interim report
1 May 2023



World Health
Organization

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WHO reference number: WHO/2019-nCoV/EHS_continuity/survey/2023.1

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This work was made possible thanks to financial contributions from the government of Germany as part of WHO's broader Outbreak, Crisis Response & Scalable Operations (OCR) funding for the COVID-19 response.

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Introduction

At the end of 2022, approximately 732.9 million COVID-19 cases and 6.7 million COVID-19-related deaths had been reported cumulatively worldwide since the start of the pandemic, with the largest global peak in COVID-19 transmission in December 2022. (1) More than three years into the pandemic, countries worldwide continue to face many challenges responding to the evolving and recurring challenges of COVID-19 while maintaining other essential health services (EHS). Ensuring the continuity of essential health services is critical because disruptions – including services for health promotion, disease prevention, diagnosis, treatment, rehabilitation and palliation – may have even greater adverse health effects at population and individual level than the pandemic itself, especially in vulnerable populations.

To better understand the extent of disruptions to essential health services caused by COVID-19 worldwide, WHO has been regularly monitoring the global situation through multiple avenues, including a rapid key informant survey on the continuation of essential health services during the pandemic.¹ Between November 2022 and January 2023, WHO launched the fourth round of its global pulse survey in which 222 countries, territories and areas² were invited to respond to a standardized web-based survey. The fourth survey followed up on WHO's previous 2020 and 2021 pulse surveys: Round 1 (May–September 2020) (2), Round 2 (January–March 2021) (3), and Round 3 (November–December 2021) (4).

This survey builds on the following other surveys: rapid assessment on the impact of the COVID-19 pandemic on noncommunicable disease resources and services (May 2020) (5); rapid assessment on the impact of COVID-19 on mental, neurological and substance use services (June–August 2020) (6); and Round 1 (March–April 2020) (7) and Round 2 (June 2020) (8) pulse surveys on immunization. These early rapid assessments and the first round of the EHS Pulse Survey were conducted as separate standalone assessments but beginning with the second round of the EHS Pulse survey in Q1 2021, a single joint survey was developed with input from all relevant WHO programme areas and presented to countries in a modular format (i.e., each area is a separate module). Countries were encouraged to complete all relevant modules, but some countries completed only a subset of modules. For example, modules on malaria and neglected tropical diseases would not have been relevant in all countries. For more details on methodology and response rate please see the methodology section of this report.

The four WHO pulse survey rounds provide an opportunity to assess how the pandemic's impact has evolved over time concerning disruptions and rebounds in services, main health system bottlenecks, service delivery challenges and mitigation and response strategies.

The findings of the pulse surveys provide immediate insights from key informants into the current country experience, extent of disruptions to a set of tracer services within a rapidly changing context and main reasons for those disruptions.³ The survey also captures the challenges health systems are facing to ensure continued access to services and essential COVID-19 tools. These include COVID-19 diagnostics, COVID-19 therapeutics, COVID-19 vaccines and personal protective equipment (PPE) and how countries are responding to mitigate challenges and transition to recovery. The fourth survey round (November 2022–January 2023) presented in this report helps gauge the extent to which countries are investing in building more resilient systems and preparing for future health emergencies, including future pandemics of acute respiratory infections.

The findings have been used to inform various policy dialogues and roundtable discussions (in triangulation

¹ Other methods include health facility assessments, routine health facility data analyses and policy analyses.

² Throughout the full report, the term “countries” should be understood to mean “countries, territories, and areas”.

³ Countries provide a wide range of services for health protection, promotion, prevention, treatment and care, but it is possible to define a set of tracer indicators that provide a good picture of overall service coverage. See 2021 UHC monitoring report (16).

with other key country data sources) to identify critical bottlenecks and support evidence-informed planning and implementation of mitigation strategies in the COVID-19 context and health system resilience and preparedness planning for the long term.⁴ The results are also being used for monitoring progress of multiple response-related plans from WHO and other actors and to guide partner investments from global to local levels.⁵

This report presents the results of the fourth round of the pulse survey. It also includes an assessment of trends over time in the continuation of essential health services, where feasible.

⁴ See WHO's [Maintaining essential health services: operational guidance for the COVID-19 context \(18\)](#) and [Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic \(19\)](#).

⁵ WHO's [2021 COVID-19 strategic preparedness and response plan monitoring and evaluation framework](#) for Pillar 9: Maintaining essential health services and systems; Pillar 2: Risk communication, community engagement (RCCE) and infodemic; and Pillar 1: Coordination, planning, financing and monitoring (17). It also contributed to monitoring for the [Global humanitarian response plan \(15\)](#).

Summary of key findings

Essential health service disruptions and recovery

- A total of 125 countries provided information on current levels of disruption to essential health services in this survey round,⁶ reporting the first major signs of essential health service recovery since the start of the COVID-19 pandemic. There was a notable decrease in the magnitude of service disruptions compared to earlier reporting.
 - Overall, the 125 responding countries reported an average of 23% of tracer health services disrupted in Q4 2022.
 - In the 84 countries that participated in all four survey rounds, the average percentage of tracer services reported as disrupted within countries decreased from 56% in Q3 2020 to 23% in Q4 2022.
- Nonetheless, the extent of essential health service disruptions reported globally persisted widely, with the vast majority of countries (84%) participating in the fourth survey round reporting some extent of disruption to at least one essential health service during Q4 2022.
- All health care settings and service delivery platforms continue to be affected, although fewer countries (approximately one quarter of countries) reported COVID-19-related disruptions across most settings compared to previous 2020-21 reporting. Disruptions reported to primary care services decreased from 53% of 57 responding countries in Q4 2021 to 26% of 60 responding countries in Q4 2022. In addition, disruptions to potentially life-saving emergency care decreased from 35% of 54 countries in Q4 2021 to 16% of 59 countries in Q4 2022, following a concerning rise reported during 2021.
- Although disruptions persisted across all major programme- and condition-specific health service areas, countries reported partial signs of service recovery, including in services for sexual, reproductive, maternal, newborn, child and adolescent health; nutrition; immunization; communicable diseases; neglected tropical diseases; noncommunicable diseases; management of mental, neurological and substance use disorders; care for older people; and traditional and/or complementary health services (see Annex 1).
- Persisting service disruptions across health care settings and service delivery platforms were attributed to both demand- and supply-side factors, including persistently low levels of care-seeking and limited health-care resources (e.g. health workforce, medicines and health products).
- Almost a quarter of responding countries (23 of 93) indicated disruption to their national supply chain system in Q4 2022, down from nearly half of responding countries in Q4 2021. Countries reported medical supplies, medicines, and laboratory supplies supply chains as most often affected.
- About half of countries reported increased backlogs across many tracer essential health services compared to 2021, most frequently in services for screening, diagnosis and treatment of noncommunicable diseases.
- In 70% of responding countries (88 of 125), service volumes increased in at least one tracer service compared to pre-pandemic levels. On average, increases in service volumes were reported for 9% of tracer services.

⁶ The term “country” should be understood to include all countries, territories and areas.

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- Compared to previous survey rounds, fewer countries reported intentionally scaling back access across all service delivery platforms and essential public health functions, demonstrating a near return to pre-pandemic levels of health services delivery and broader system functioning.

Delivery of essential COVID-19 tools

- Tracer COVID-19 related services have been budgeted for and integrated into routine health service delivery in many countries. About three-quarters of countries had fully integrated COVID-19 vaccination (73% of 98 responding countries), diagnostic (73% of 99 responding countries) and case management (76% of 100 responding countries) services. Fewer countries (59% of 83 responding countries) reported fully budgeted and integrated post COVID-19 condition services.
- Most countries (80% of 83 responding countries) were still reporting at least one bottleneck to scaling up access to essential COVID-19 tools (e.g. COVID-19 diagnostics, therapeutics, vaccines and PPE), with health workforce issues and lack of funding representing the most common barriers.
- Demand-side challenges, including community acceptance and affordability, remained the most common bottleneck to scale up COVID-19 vaccination, as reported by 73% of 80 responding countries.
- Health worker recruitment, financial planning and risk communication and engagement strategies were the most frequently reported areas of technical assistance needs to scale up access to essential COVID-19 tools.

Policies, planning and investments

- Almost all countries were implementing WHO-recommended strategies to overcome service disruptions, with over 75% of 102 responding countries having integrated at least one strategy into their routine health system practices. The most frequently integrated approaches included those to scale up community communications, mitigate health workforce issues and support surge procurement of commodities.
- While most countries developed plans for continuity of essential health services in the COVID-19 context, fewer than half had developed plans for health service resilience and pandemic preparedness for future public health emergencies.
- Almost three-quarters of countries had allocated additional funding towards longer term system recovery, resilience and preparedness, with health workforce capacity strengthening representing the most common area of investment.
- Many countries reported being able to leverage capacities that were strengthened for the COVID-19 response for other health emergencies. Of 81% of countries that have had a non-COVID-19 health emergency since the start of the COVID-19 pandemic, all countries had leveraged institutionalized capacities strengthened in the COVID-19 context in their response.
- Countries also identified priority health capacity strengthening areas for future respiratory pathogen pandemic preparedness, including: surveillance, laboratories, and diagnostics; multi-sectoral coordination, governance and financing; and infodemic management, risk communication and community engagement.

Conclusions

- The key informant survey results indicate that while essential health service disruptions persist in almost all countries across the globe, health systems are showing the first notable signs of recovery and transition beyond the acute phases of the pandemic.
- As countries have intensified actions to mitigate the consequences of the COVID-19 pandemic and promote service recovery, the magnitude and extent of disruptions reported by countries have decreased across all service delivery settings.
- Many countries have started to plan for and invest in longer-term post-pandemic recovery related to broader health system and essential health service resilience and future acute respiratory pandemic preparedness.
- Countries also reported important progress in institutionalizing COVID-19-related advances, system capacities and service delivery innovations into routine health system operations.
- Countries are still facing challenges to catch up with respect to essential health services, address service backlogs and deliver essential COVID-19 tools (vaccines, diagnostics, case management and personal protective equipment). Countries identified key technical support needed from WHO to address remaining challenges in the COVID-19 context and beyond. The most frequently cited needs related to health workforce strengthening, building health services monitoring capacities, designing models of care, governance, policy and planning support and financial planning and funding support.

Methods

Instrument

The pulse survey consisted of multiple-choice and open-ended questions related to current national policies, plans and structures, disruptions to health services, reasons for disruptions, mitigation approaches, information tracking and priority needs. It included sections that targeted different key informants in the country, including a section on cross-cutting health system functions and services and focused sections on disruptions to service-specific areas.

In some cases, countries were also asked to upload or link to national plans and documents outlining the national package of essential health services and/or list of essential health services to be maintained during the pandemic, if available.

The full questionnaire and recommended key informants are available in Annex 2.

Across all survey sections, a total of 79 services were assessed. Across service delivery settings and platforms, the survey included services for primary, emergency, critical and operative care; rehabilitative and palliative care; and community care. Across health service areas, the survey included services for sexual, reproductive, maternal, newborn, child and adolescent health (SRMNCAH); nutrition; immunization; communicable diseases; neglected tropical diseases (NTDs); noncommunicable diseases (NCDs); mental, neurological and substance use (MNS) disorders; care for older people; and traditional and/or complementary health services. A list of these services is included in Annex 3.

Questions related to specific service disruptions were modified based on the lessons learnt from previous rounds. The number of services expanded from 44 in round 1 to 63 in round 2, 66 in round 3 and 79 in round 4. (Note that the round 3 survey did not include a section on NCDs because a separate WHO survey with comparable data had recently been conducted.) The ordinal response categories for the questions on service disruptions increased from a three-point ordinal scale in round 1 (more than 50% of users not served as usual; 5-50% of users not served as usual; and less than 5% of users not served as usual) to a four-point scale in rounds 2 and 3 (more than 50%, 26–50%, 5–25% and less than 5% of users not served as usual). In round 4, a further category capturing situations where more patients were being served than usual (5% or more) was added. In all survey rounds, key informants could respond “Do not know” if information was not or not yet available regarding that service’s disruption or “Not applicable” if the service/intervention is not usually delivered in the country.

Between the first⁷, second (3), third (4) and fourth survey rounds, there were 27 like tracer services that can be used to compare trends over time. Round 1 response rates consolidate responses submitted to three separate service disruption pulse surveys during Q3-Q4 2020: i. Continuity of essential health services (cross-cutting); ii. Noncommunicable diseases; and iii. Mental, neurological and substance use disorders. The trend analyses for service disruptions were limited to the 84 countries that responded to at least one module in all four rounds. However, countries may have responded to different modules in each round, and responses of “Do not know” or “Not applicable” have been removed from the denominator. Therefore, the denominators in the analyses may not be consistent across services and across the four rounds.

In round 4, a new module to assess a country’s preparedness for a future respiratory pathogen pandemic was added.

⁷ Including the [Pulse survey on continuity of essential health services during the COVID-19 pandemic \(2\)](#); [Rapid assessment on the impact of the COVID-19 pandemic on noncommunicable disease resources and services \(5\)](#); and [Rapid assessment on the impact of COVID-19 on mental, neurological and substance use services \(6\)](#).

Process for completion

In November 2022, WHO distributed the fourth round of the pulse survey through a secure web-based questionnaire in LimeSurvey software to ministries of health through WHO Regional Offices (RO) and WHO Country Offices (WCO) in all six WHO Regions, together with instructions for completing the questionnaire, which was available in Arabic, English, Chinese, French, Portuguese, Russian and Spanish.

The survey was disseminated to 222 countries, territories, and areas, including all 194 Member States and additional associate members, territories and areas as requested by each Regional Office. The official data collection period was November 2022 and January 2023, and late responses were accepted through 10 March 2023 to capture as many submissions as possible. Two to four reminders were sent to countries in each region.

The survey was designed in modular sections so that focal points could complete their relevant sections simultaneously, which facilitated rapid completion, reduced the burden on individual key informants and ensured that each content area was assessed by the right technical focal point.

Suggested key informant respondents were noted in the tool, and it was recommended that a survey focal point (from WCOs and/or within the ministry of health as appropriate to country context) be designated to lead the survey coordination process, including:

- identifying national focal points/key informants to complete each survey section (for some in-depth modules, this involved representatives from relevant professional associations if there were no designated ministerial level focal points)
- disseminating the survey link to relevant national focal points/key informants
- tracking and following up completion of survey sections
- as feasible, organizing follow-up activities and dialogues to support data use.

Under the best circumstances, survey key informants came together in a collaborative discussion to review and align responses across survey sections prior to submission. If this was not possible, each section could be completed independently by its respective key informant. Following submission of responses, ministries of health were encouraged to use the results – combined with other data – to inform roundtable discussions and policy dialogues to identify critical bottlenecks and guide priority actions.

Data sharing agreement

Before completing any survey section, all key informants were asked to review the WHO data sharing agreement and contact WHO by email to notify any opt out of the data sharing agreement. Findings from any countries, territories or areas opting out of the data-sharing agreement are included only in global and regional aggregated findings. The data-sharing agreement appears at the end of the survey instrument and is available in Annex 2. No countries opted out of the data sharing agreement in the round 4 survey.

Responses

By 10 March 2023, 139 of the 222 countries to which the survey was sent (63%) had responded to the survey. The remaining countries responded to only a subset of modules. Global and Regional response

rates for each module are included in Table A2 in Annex 4. This is a slightly higher response rate than in round 3, to which 59% (132 of 223) responded. A list of responding countries is included in Annex 4.

Many countries responded to only a subset of modules with 64 (39% of 222) submitting all survey sections considered relevant to their context. Because of these differences, the number of countries responding to each question varies. Additionally, 'Do not know' and 'Not applicable' responses were excluded from the denominators in analyses unless considered pertinent, further introducing variability in denominator values.

Most survey responses were received during December 2022-January 2023. Unless otherwise specified, countries were asked to report on the situation at the time of survey completion. For details on response rate and reference period of previous rounds, please see the relevant reports [(2), (3), and (4)]. For analysis of trends over time, the assumption is made that Round 4 corresponds with Q4 2022, Round 3 with Q4 2021, Round 2 with Q1 2021 and Round 1 with Q3 2020. Analysis of disruptions over time was limited to the 84 countries that responded to at least one module in all four rounds. As countries responded to different combinations of modules in each round, and "Do not know" and "Not applicable" responses were excluded, the number of countries reporting disruptions over time varies across tracer services.

Most responses were submitted through the online portal. A few responses were received by email and were then entered into the online platform at WHO headquarters. Data from the questionnaire were downloaded directly from the web-based platform to Stata (9) for data cleaning and management and analysed in Microsoft Excel. The analysis presented in this report is based on unweighted country and territory data. Cumulative percentages may vary or may not equal 100% due to rounding. Unless otherwise noted, "n" refers to the number of responding countries in all figures.

Limitations

The limitations of the survey should be taken into account in the interpretation of findings. In general, responses provided by key informants reflect self-assessment, which may be prone to bias and lacks validation.

The type and mix of key informants and method of survey completion also varied across countries, territories and areas. Key informants included health policy advisors, directors of health services and health systems, directors of programmes, monitoring and evaluation focal points, public health officers, health systems and services officers and incident management team focal points. Coordination between ministry of health focal points prior to submission also varied. In some cases, key informants submitted survey responses individually, and in other cases survey section responses were reviewed and validated through a cross-cutting consultation prior to submission.

The reference period in round 4 covers the period of survey completion to capture the current situation in countries (rather than the previous three or six months as was the case in the previous survey rounds). This limits the extent to which comparisons over time can be interpreted.

The country reports refer to national situation assessment only and do not reflect subnational variability within countries. Additionally, countries were at different stages of the COVID-19 pandemic when they submitted their responses, so variations in cross-country comparisons are to be expected. Moreover, the survey design resulted in submission of different combinations of survey sections by each country, territory and area. Consequently, each survey section has a different denominator, which must be considered in interpretation of aggregated results across countries and survey sections.

Although survey questions explicitly addressed service disruptions due to the COVID-19 pandemic, countries may have had difficulties distinguishing between service disruptions due to the pandemic and those due to non-COVID-19-related health crisis and/or other problems. This might have led to an overestimated attribution of service disruptions to COVID-19.

Differences in the number of countries and combinations of participating countries introduce potential bias into overall comparisons between survey rounds. Moreover, the degree of impact of COVID-19 may have influenced which countries participated. Severely impacted countries may not have participated due to time constraints, whereas countries in a more advanced state of recovery may not have participated because COVID-19 was no longer considered an important issue. Such bias could have resulted in either under- or overestimation of disruptions globally. Response rates also varied across Regions, which limited the extent to which Regions could be compared; and such comparisons are thus not included in this report.

Last, the novelty of concepts and terminology related to essential health services, service continuity, service disruptions and mitigation strategies may have been interpreted differently by key informants, with potential implications for results.

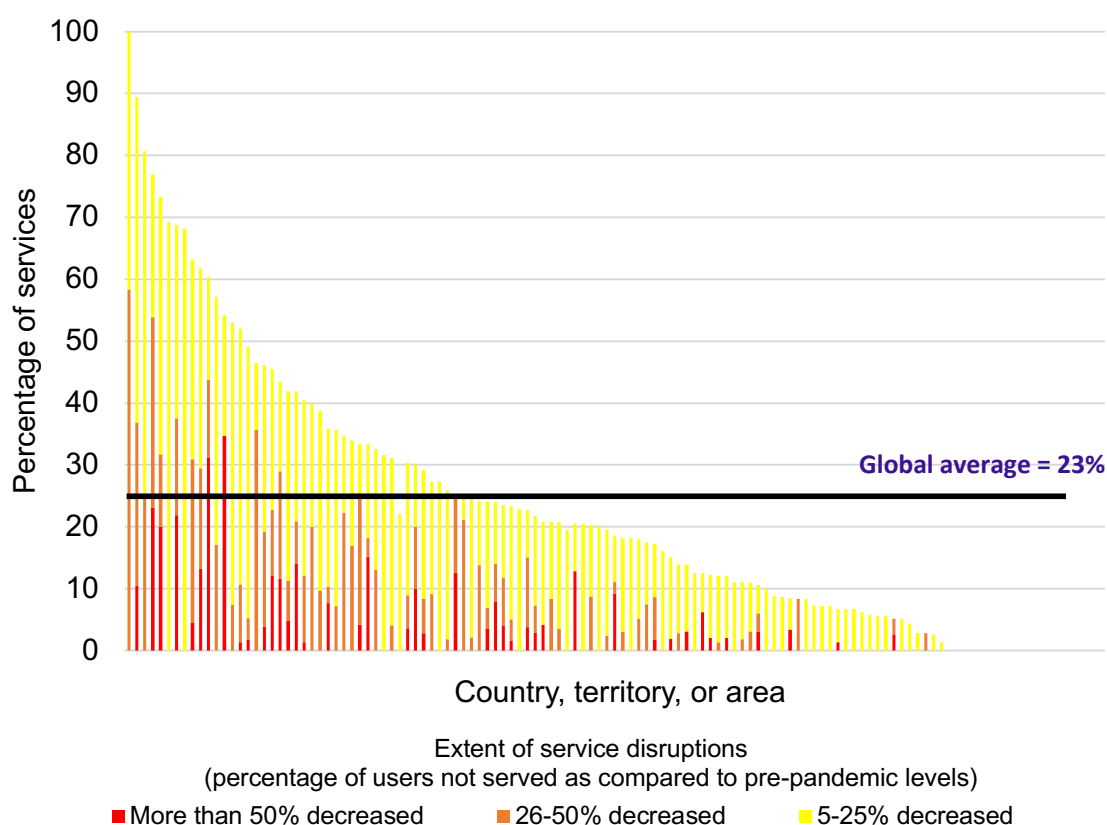
Essential health service disruptions

Most countries (84% of 125) participating in the fourth pulse survey reported that there was a reduction in service volume for at least one essential service at the time of survey completion, although a lower percentage of countries reported this compared to in previous pulse rounds (see Table 1). These disruptions affected many of the 79 tracer services (see Annex 3 for a list of these services).

On average, continued disruptions were reported in almost one-quarter of the tracer essential health services (23% of 79 services) by 125 countries providing information on level of service disruption for at least one service (see Figure 1, below). The range of services reported as disrupted at the end of 2022 varied by country:

- 3% of countries reported disruptions in 75–100% of services
- 9% of countries reported disruptions in 50–74% of services
- 22% of countries reported disruptions in 25–49% of services
- 50% countries reported disruptions in less than 25% of services
- 16% of countries reported no disruptions.

Fig. 1. Percentage of services with reduced service volume per country (number of tracer services = 79)



Denominator represents responses from countries/territories/areas that responded to at least one survey section and consented to data sharing agreement. Percentages may not add up to exactly 100% due to rounding. Services include primary care; emergency, critical and operative care; rehabilitation; palliative care; cancer care and community care; and tracer services for sexual, reproductive, maternal, newborn, child and adolescent health and nutrition; immunization; communicable diseases; noncommunicable diseases; neglected tropical diseases; mental, neurological and substance use disorders; noncommunicable diseases; and care for older people.

Analysis of trends was done for the 27 essential services that were assessed across survey rounds in the 84 countries that responded to all four survey rounds (see annex 3 for list of services and annex 4 for list of countries). The percentage of countries reporting highest levels of disruptions has decreased since 2020 (see Table 1). The average percentage of services disrupted within countries in Q4 2022 (Round 4) was 23%, which represents a less severe level of disruption than what was reported in previous rounds (see Table 1).

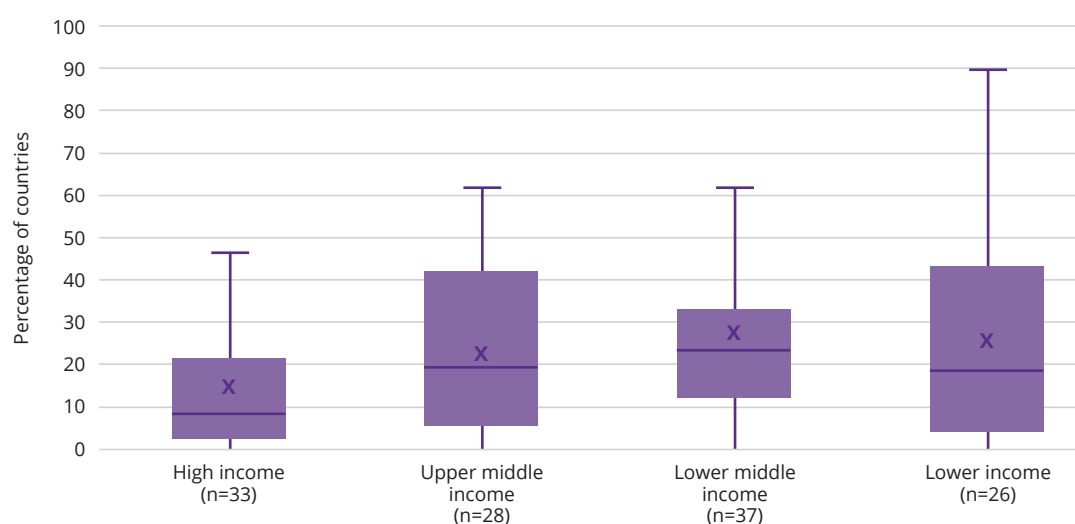
Table 1. Level of service disruption across 27 tracer services in 84 countries submitting responses to all four survey rounds

	Q3 2020 (Round 1)	Q1 2021 (Round 2)	Q4 2021 (Round 3)	Q4 2022 (Round 4)
Average percentage of services disrupted per country	56	41	46	23
Percentage of countries with different levels of service disruptions				
No disruption	11	7	9	28
Less than 25% of services disrupted	12	25	21	39
25–49% of services disrupted	15	25	23	18
50–74% of services disrupted	29	31	29	9
75–100% of services disrupted	33	11	18	8

Denominator: represents responses from countries/territories that responded to all four survey rounds and consented to data sharing agreement. Cumulative percentages may not add up to 100% due to rounding.

Some variation was seen in the percentage of services reported as disrupted according to countries' income status. Of 124 responding countries for which income group information is available from the World Bank, high-income countries reported an average of 12% of service disrupted, while upper middle-income countries reported an average of 21% of services disrupted, and lower middle-income and lower income countries reported an average of around 26% and 25% of services disrupted respectively.

Fig. 2. Percentage of 79 services disrupted by income group (n=124⁸)



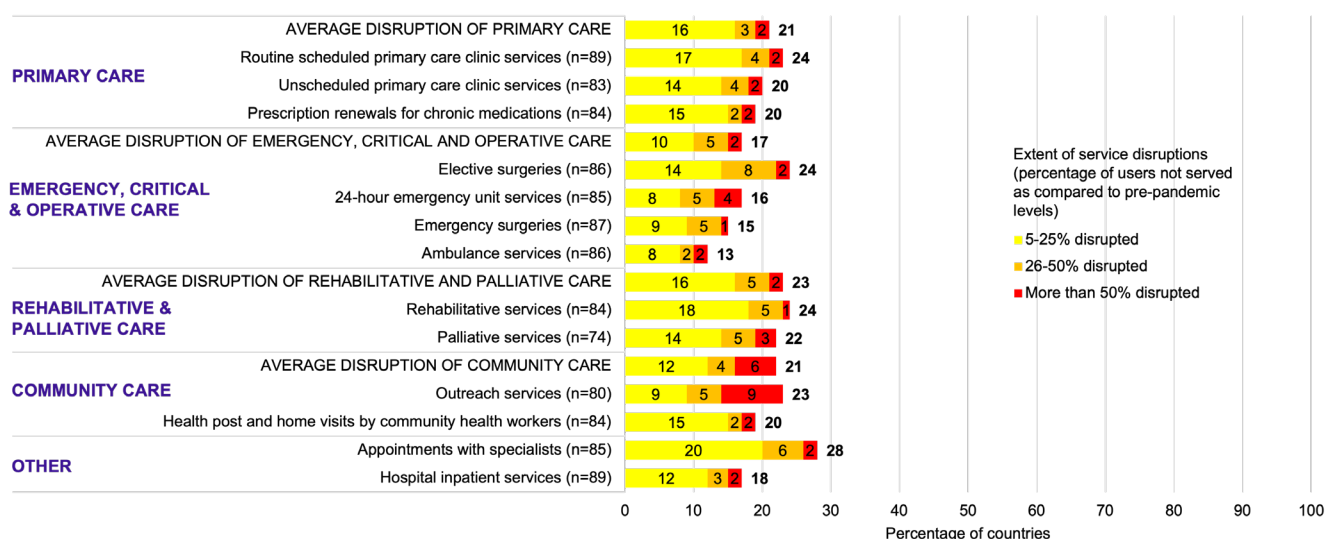
⁸ One reporting territory is not reported in World Bank's income groups and is therefore excluded from this sub-analysis.

Disruptions across service delivery settings and platforms

Disruptions continued to be reported in all service delivery settings and platforms, including in primary care, emergency and critical care, rehabilitation and palliative care, and community care (see Figure 3, below).

As described in WHO's Operational Framework for Primary Health Care (10), primary care plays a key role in the health system, providing first-contact, accessible, continuous, comprehensive and coordinated patient-focused care. Primary care sits at the foundation of achieving universal health coverage (UHC), and any disruptions in this setting can have major impact across the health system for service delivery and the overall health and well-being of patients. These disruptions are of concern not only for primary care, but also for other service delivery settings, as a lack of access to primary care can often result in greater pressures and reliance on other service delivery settings, such as emergency care.

Fig. 3. Percentage of countries reporting service disruptions, by service delivery setting



Note: Countries reporting "Do not know" or "Not applicable" are not included in denominator. Therefore, the number of countries may be less than total number of countries that completed the relevant module.

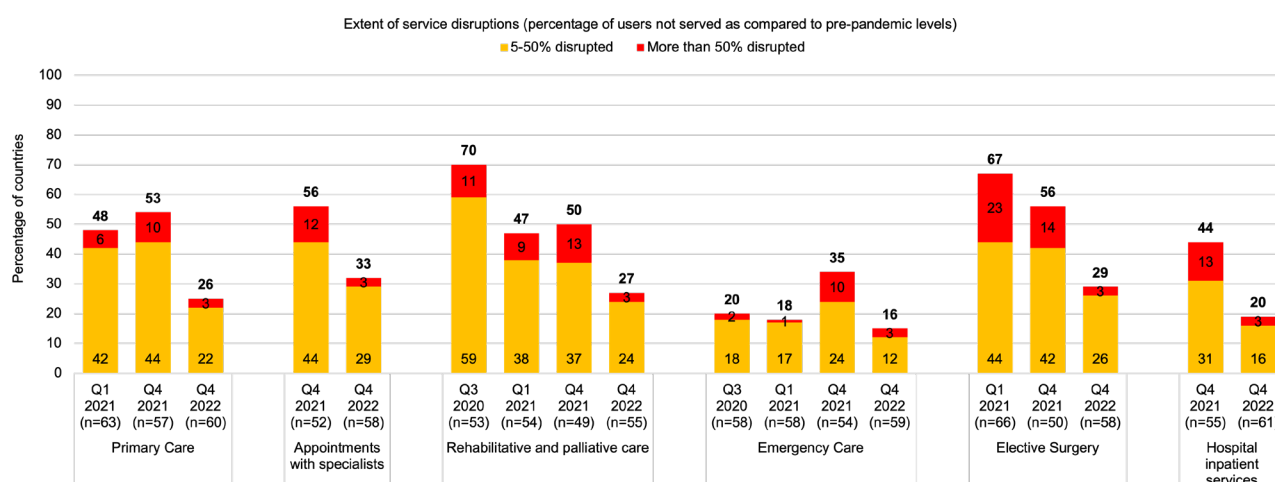
Postponement of elective surgeries was, as expected, more common than disruptions in emergency surgeries (see Figure 3 above). This level of disruption in elective surgeries likely played a significant role in increasing backlogs, with 48% (28 of 58 responding of countries) reporting an increase in backlogs for elective surgery and procedures in Q4 2022 relative to 2021 (data not shown).

Disruptions were also reported through the end of the continuum of care. About one quarter of countries reported disruptions to rehabilitative services and disruptions to palliative care services (see Figure 3, above). Backlogs in rehabilitation services were similar to those reported for elective surgeries, with fifty-three percent (26 of 49 responding of countries) reporting an increase in Q4 2022 relative to 2021 (Figure not shown).

With respect to primary care, overall, among 84 countries responding to all four survey rounds, fewer disruptions in primary care services were reported in Q4 2022 than in Q1 2021 or Q4 2021 (see Figure 4, below).

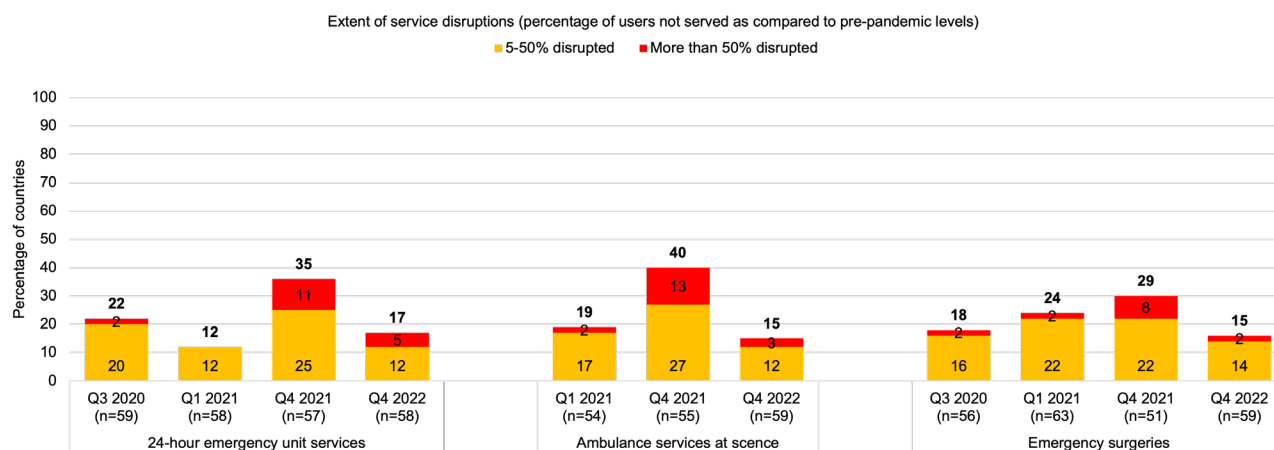
Disruptions to potentially life-saving emergency, critical and operative care interventions are also of particular concern. Reported disruptions to potentially life-saving emergency care decreased following a worrisome rise in 2021 but remained higher than pre-pandemic levels in Q4 2022 (see Figure 4).

Fig. 4. Comparison of disruptions reported across service delivery settings and platforms in countries responding to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)



Across all different types of emergency care services, the number of countries reporting disruptions in Q4 2022 decreased by half (or more) compared to Q4 2021 (see Figure 5, below). Overall, reports of emergency service disruptions decreased from 35% of countries in Q4 2021 to 16% countries in Q4 2022 (see Figure 5, below).

Fig. 5. Comparison of disruptions in emergency care services in countries responding to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

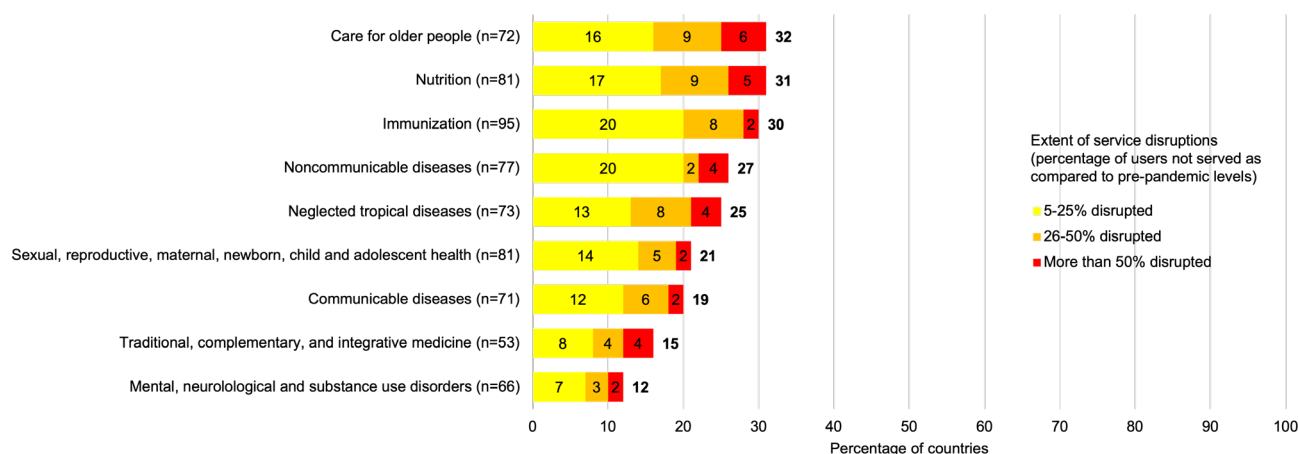


In countries that participated in all four rounds of the survey, results show many fewer countries reporting disruptions compared to previous rounds (see Figure 4, above). For most service delivery settings, only about half as many countries reported disruptions in Q4 2022 compared to Q4 2021. Further, among countries still reporting disruptions, a larger proportion are reporting lower levels of disruption (5-50% of users not being served as compared to pre-pandemic levels rather than more than 50% of users not being served). Results are presented for only the last three rounds for primary care and elective surgery because these service delivery settings were not explicitly covered in round 1 of the survey.

Disruptions to tracer services

Key informants also reported the extent of disruption to condition- and programme-specific tracer services for major health areas (see Figure 6, below).

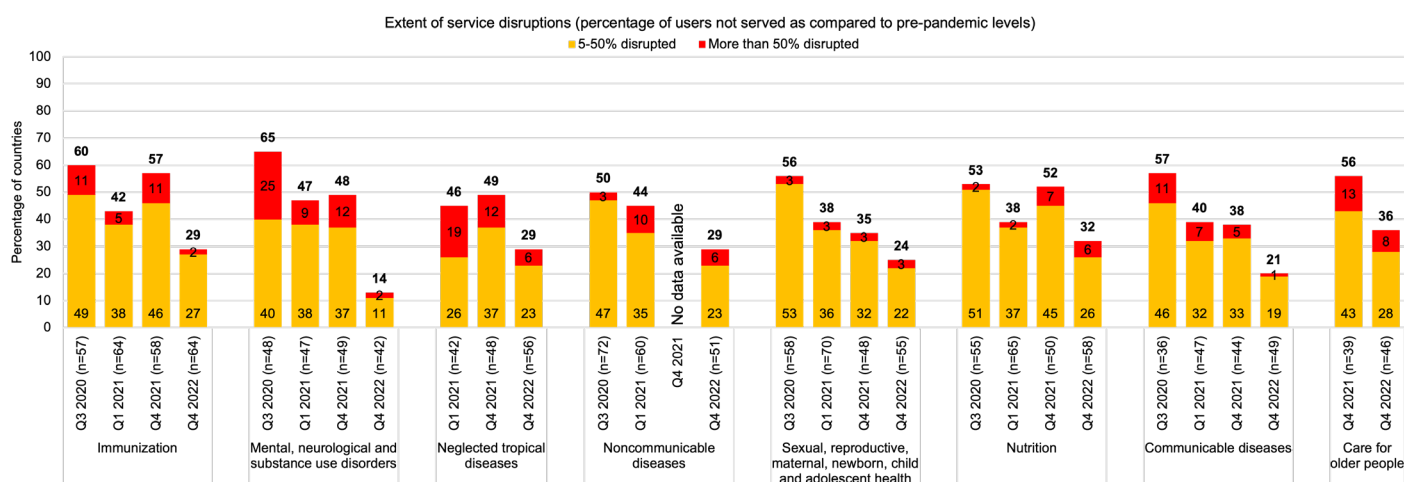
Fig. 6. Percentage of countries reporting service disruptions, by condition- and programme-specific tracer service areas



Reported disruptions in round 4 were lower than those reported in round 3 (or round 2 for noncommunicable diseases) across all condition- and programme-specific tracer service areas (see Figure 7, below). The largest decreases in service disruptions were for tracer services areas related to mental, neurological and substance use disorders, immunization and communicable diseases.

Detailed results on tracer service disruptions for each major health condition and programme area are provided in Annex 1.

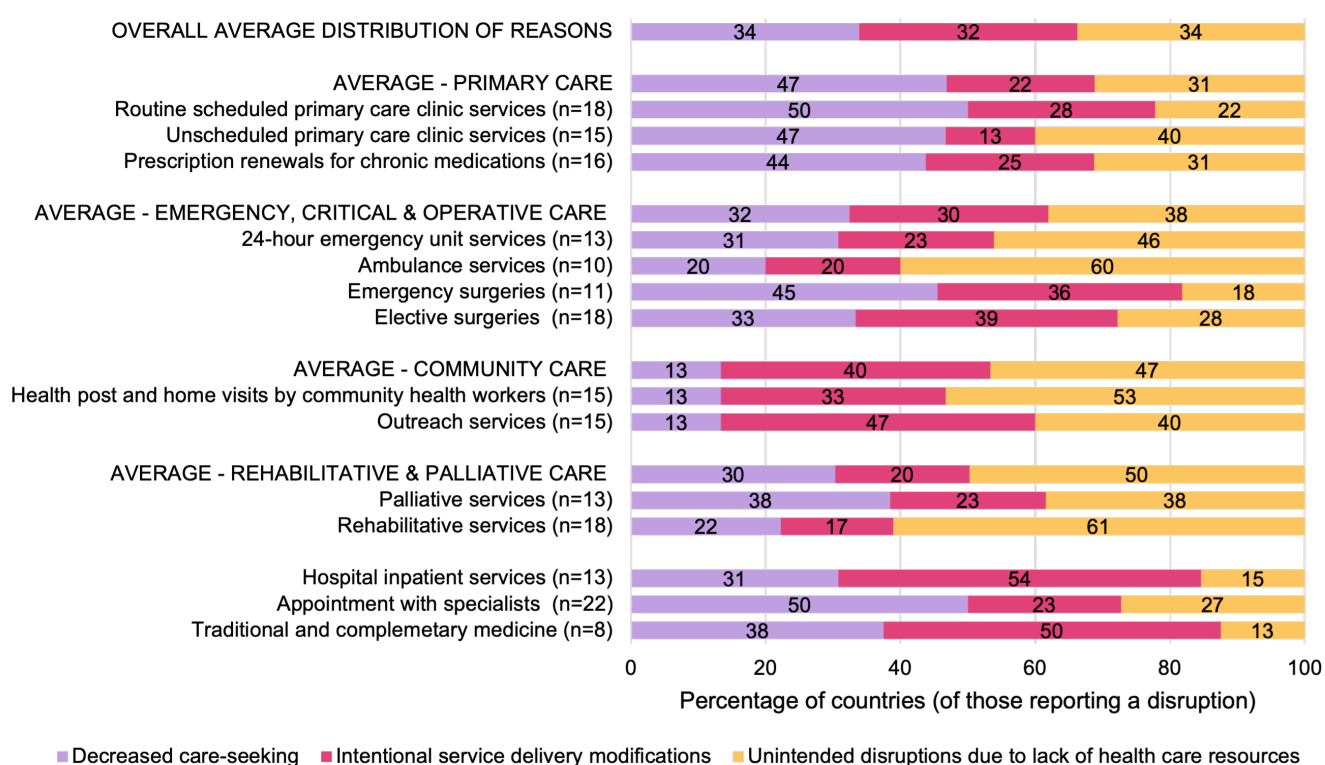
Fig. 7. Comparison of disruptions by tracer service area in countries responding to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)



Reasons for service disruptions

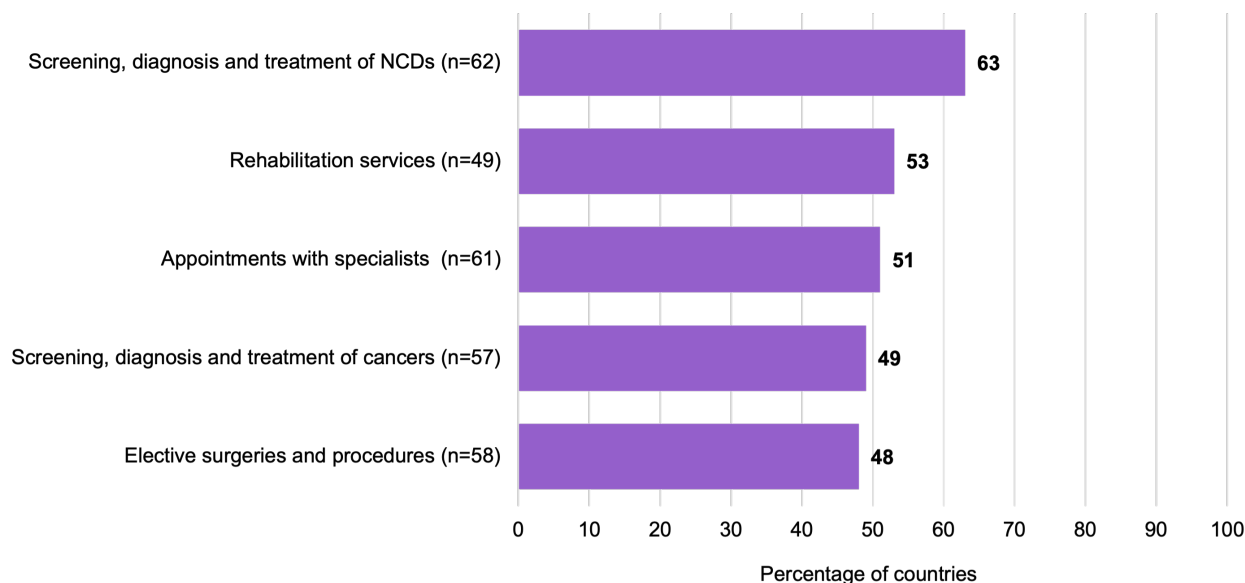
A mix of demand and supply-side factors were responsible for disruption to services. Figure 8 shows the percent distribution of countries reporting unintended disruptions due to lack of health care resources, intentional service delivery modifications and decreased care seeking for major service delivery platforms. The distribution of reasons for disruptions was evenly split between countries and did not change much compared to Q4 2021. Within specific service areas, however, the reasons for disruption were not evenly divided. For example, lack of health care resources, such as challenges related to health worker availability and capacities or availability of essential medicines, had a significant impact on the provision of community care and rehabilitative and palliative care. At the same time, decreased care-seeking due to community fear, mistrust, financial difficulties during lockdowns or other barriers led to reductions in primary care services and appointments with specialists. Additionally, intentional service delivery modifications, such as temporary closures or postponement of services, drove disruptions in hospital inpatient services and traditional and/or complementary medical services.

Fig. 8. Percentage of countries reporting reasons for service disruptions



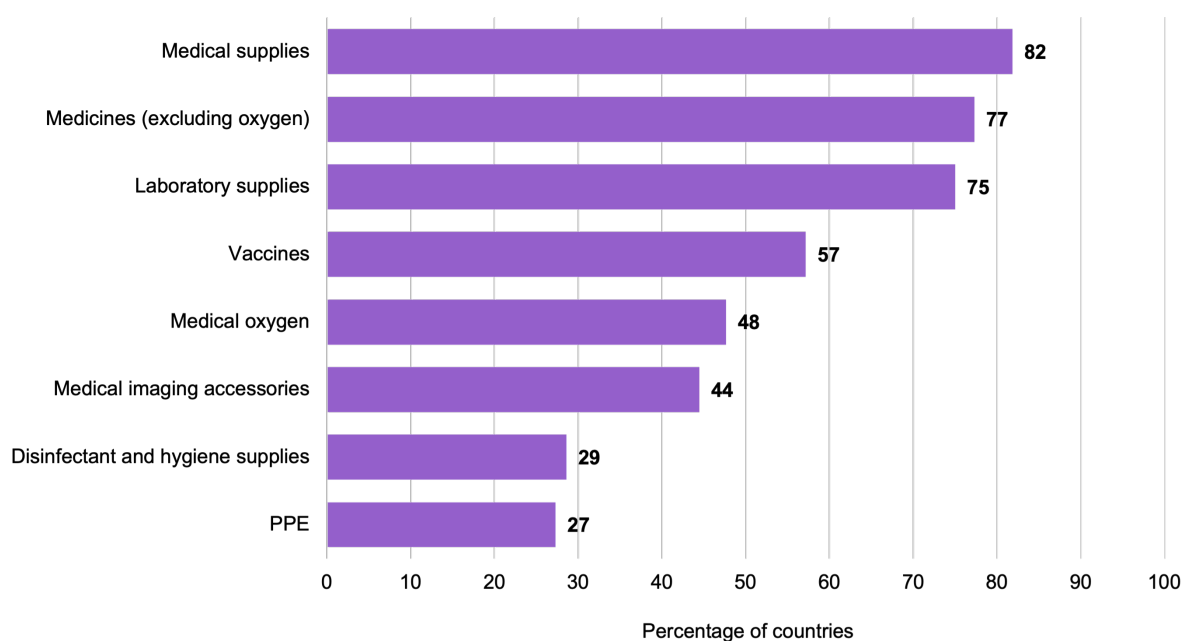
Across the tracer essential health services examined, almost 50% or more countries still reported increased backlogs compared to 2021 (see Figure 9, below). Backlogs represented particular problems for screening, diagnosis and treatment of cancers.

Fig. 9. Percentage of countries reporting increased service backlogs compared to 2021 levels



Functional supply chain systems are critical to ensure that necessary health products are available in the right quantities for delivery of essential health services. Disruptions across supply chain systems can limit capacities across the continuum of care. Disruptions in the supply chain system were reported by 24% (22 of 93 responding countries), which were almost halved compared to Q4 2021 (38 of 83 responding countries). Details on which specific essential health products were most likely to be reported as having supply chain disruptions are shown in Figure 10.

Fig. 10. Percentage of countries reporting disruptions to national supply chain systems, by essential health product (n=23)



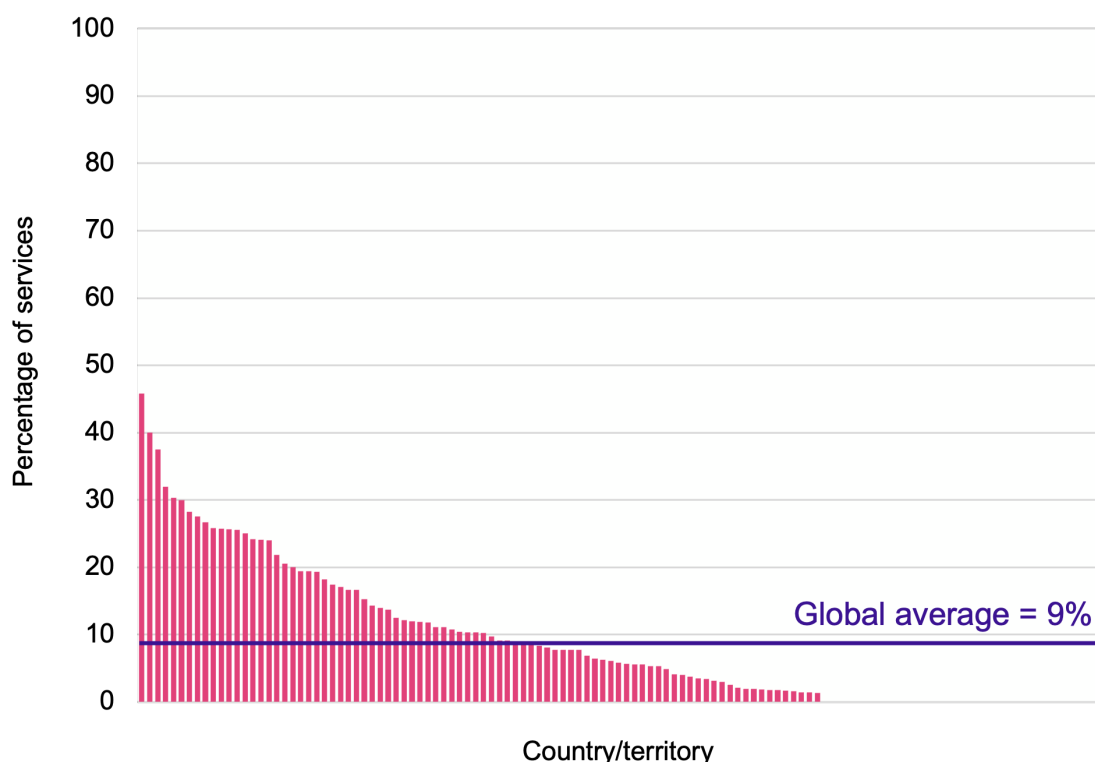
Increased service volumes compared to pre-pandemic levels

On average, increases in service volumes compared to pre-pandemic levels were reported in 9% of the 79 tracer essential health services (see Figure 11). Seventy percent of countries (88 of 125 responding countries) reported increased service volumes in at least one tracer service compared to pre-pandemic levels. This trend is possibly tied at least in part to country efforts to catch up on service backlogs and recover services, improved community communications, trends unrelated to the pandemic, and/or responses to emerging health needs in the pandemic context.

Increased volumes were reported for the following services:

- mental health, neurological and substance use disorders (15% of countries)
- communicable diseases (13% of countries)
- traditional and complementary medicine (11% of countries)
- nutrition (11% of countries)
- sexual, reproductive, maternal, newborn, child and adolescent health (9% of countries)
- immunization (8% of countries)
- noncommunicable diseases (7% of countries)
- care for older people (6% of countries)
- neglected tropical diseases (4% of countries).

Fig. 11. Percentage of tracer services reported as increased in service volumes as compared to pre-pandemic levels, by country (number of tracer services = 79)



Strategic modifications to service delivery and essential public health functions

An important aspect of service disruptions can be attributed to intentional strategic changes to service delivery platforms and public health functions in the context of the COVID-19 pandemic. No service delivery platform was reported as suspended in more than 5% of responding countries, and less than 20% of countries are still scaling back service delivery platforms according to a government directive. The percentage of countries that intentionally scaled back service delivery platforms as a response to the pandemic during Q4 2022 decreased by at least 60% across almost all services compared to Q4 2021 (see Figure 13 below).

Fig. 12. Percentage of countries that scaled back service delivery platforms according to a government directive

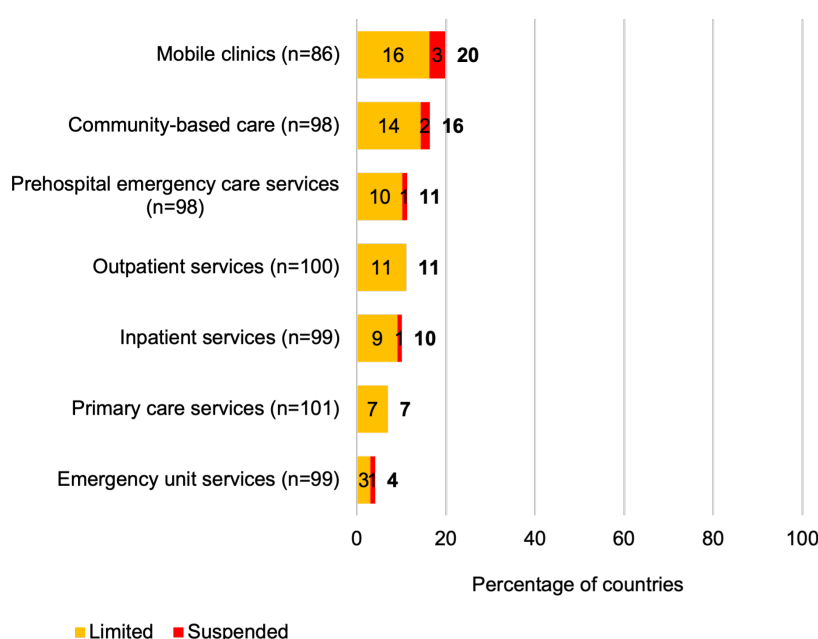
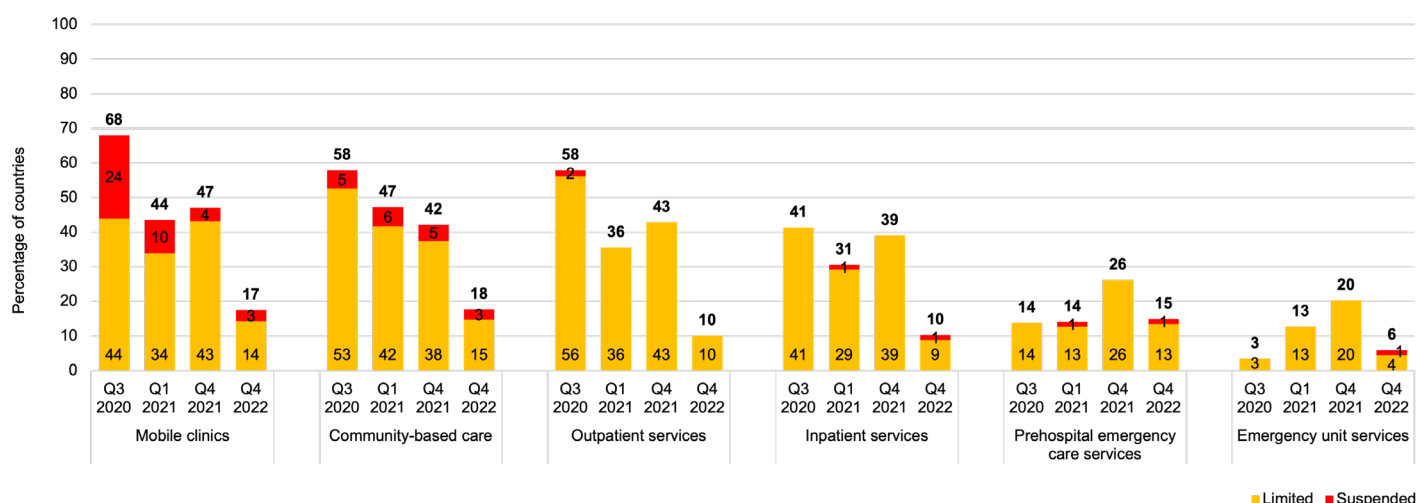


Fig. 13. Comparison of percentage of countries that limited or suspended service delivery platforms as a response to the COVID-19 pandemic: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)



Scaling back on essential public health functions and activities was still reported but to a much lesser extent than in previous rounds (see Figure 14, below). Most other public health functions, such as population-based disease prevention or health promotion, were scaled back in less than 15% of responding countries. Scaling back of essential public health functions decreased by at least 50% for almost all functions in Q4 2022 compared to Q4 2021 (see Figure 15, below).

Fig. 14. Percentage of countries that scaled back essential public health functions via government directive

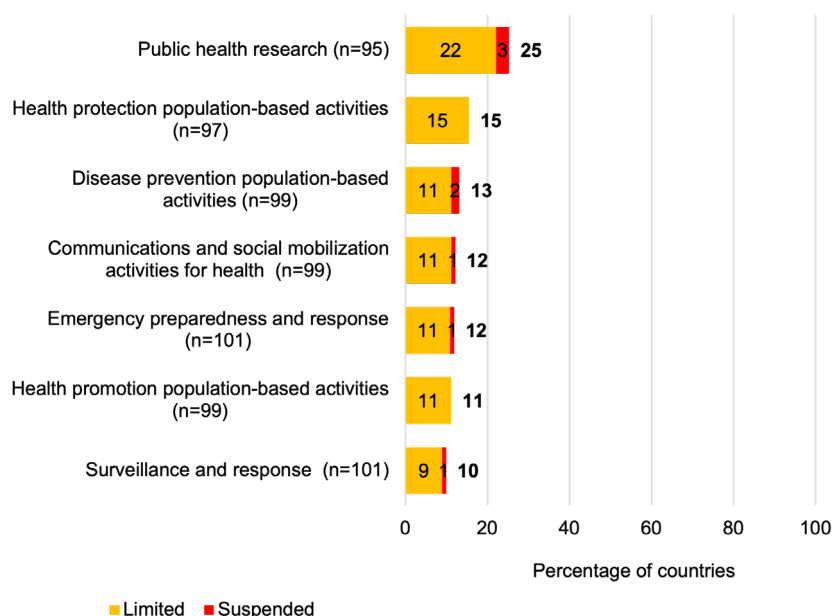
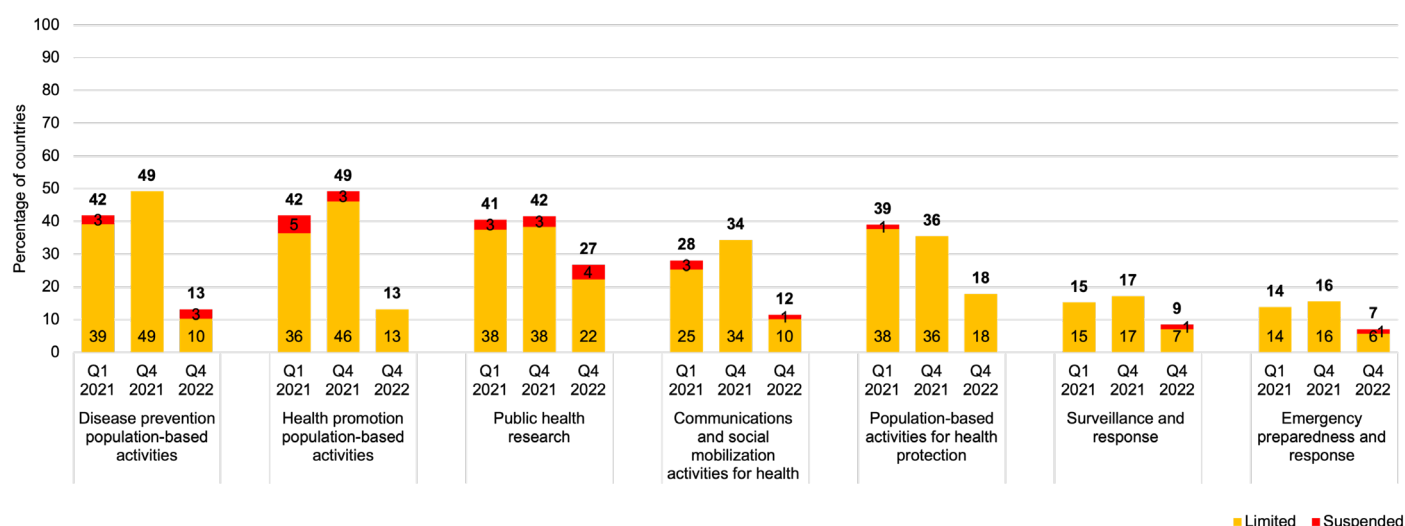


Fig. 15. Comparison of percentage of responding countries that limited or suspended essential public health functions or activities as a response to the COVID-19 pandemic: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)



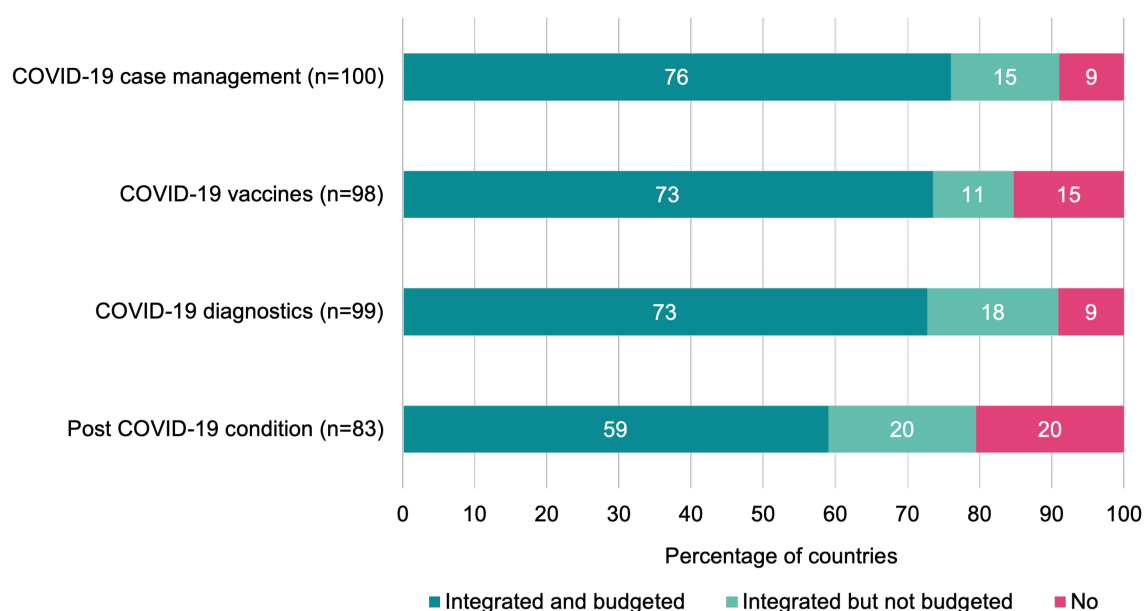
Almost all responding countries (98%) deployed/reassigned ministry of health (or equivalent institutions) staff responsible for essential health service delivery to help with the overall COVID-19 response. Of concern, over one-third of countries still had ministry of health staff that were not yet back to regular duties.

Delivery of essential COVID-19 tools

Integration of COVID-19 services into routine health service delivery

Although more than 70% of responding countries reported integrating and budgeting COVID-19 case management, COVID-19 vaccines and COVID-19 diagnostics, only about 60% reported integrating and budgeting post-COVID-19 condition services.

Fig. 16. Percentage of countries reporting integration of COVID-19 related services into routine health service delivery



Bottlenecks to scaling up essential COVID-19 tools

Access to essential COVID-19 tools – including COVID-19 diagnostics, therapeutics, PPE and vaccines – is critical for health systems to respond to the COVID-19 pandemic and ensure continued access to care. However, 80% of responding countries still reported at least one bottleneck to scaling up access to one or more essential COVID-19 tool. Health workforce challenges – such as insufficient quantities, distribution or competencies to administer tests – represented the most frequently cited bottleneck for therapeutics and diagnostics and testing, whereas lack of funding (e.g. to procure or deliver laboratory supplies and equipment) was the most commonly cited bottleneck for PPE distribution and use. Like in 2021, demand-side challenges, such as community acceptance for testing and affordability, represented the most frequently cited bottleneck for COVID-19 vaccination (see Table 2, below).

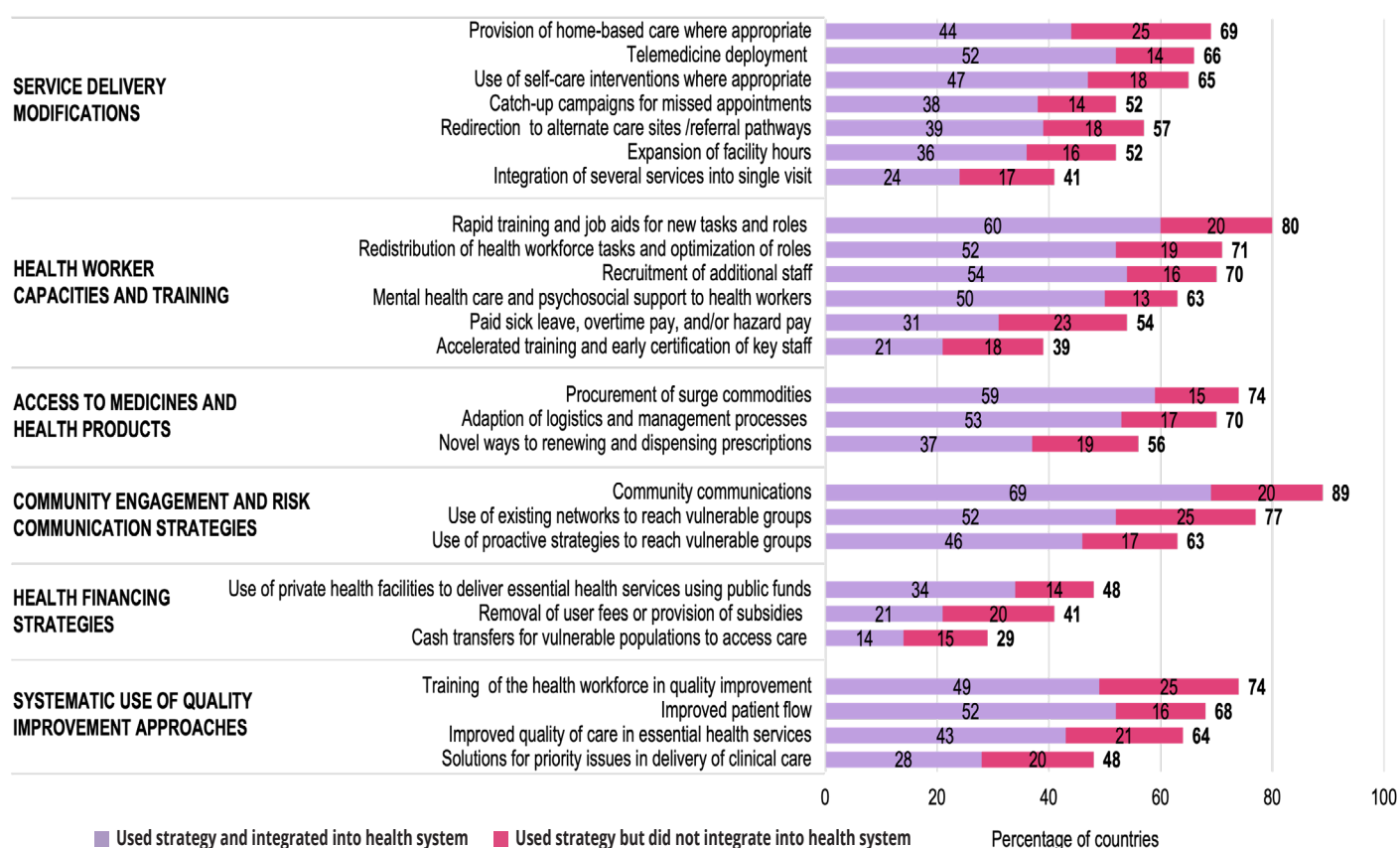
Table 2. Bottlenecks to scaling up access to essential COVID-19 tools (n=83)

Bottlenecks	Essential COVID-19 tools			
	Diagnostic and testing 	Therapeutics 	PPE distribution and use 	COVID-19 vaccination 
Health workforce challenges	80%	80%	39%	47%
Lack of funding	67%	57%	61%	37%
Shortages in supplies and equipment	55%	39%	58%	24%
Demand-side challenges	30%	12%	—	73%
Lack of data/information	23%	17%	43%	16%
Lack of clear strategy, guidance or protocols	13%	17%	22%	11%
Lack of distribution capacity	10%	14%	36%	23%
Lack of physical infrastructure	—	12%	—	—

Strategies to overcome disruptions and recover services

Countries were using various strategies and innovations to overcome short-term service disruptions and recover services over the long term, including service delivery modifications (such as shifting to community-based care or telehealth consultations), increasing health worker capacities and training, improving access to essential medicines and health products, community engagement and health financing strategies. Almost all responding countries reported using at least one strategy to overcome service disruptions, and most reported integrating at least one strategy into the health system (see Figure 17, below).

Fig. 17. Percentage of countries implementing mitigation and recovery strategies (n=102)



Policies and plans for continuity and recovery of essential health services

Most countries have established policies, plans and mechanisms to support the maintenance of essential health services during the COVID-19 pandemic. About 85% (77 of 91 responding countries) have developed and/or revised policies or plans for continuity of essential health services. This was higher than the 70% reported in Q4 2021 (60 of 86 responding countries).

However, fewer than half of reporting countries (41 of 93 responding countries) indicated that they had a recovery plan to strengthen health service resilience and preparedness for future public health emergencies. This is similar to what was seen in round 3.

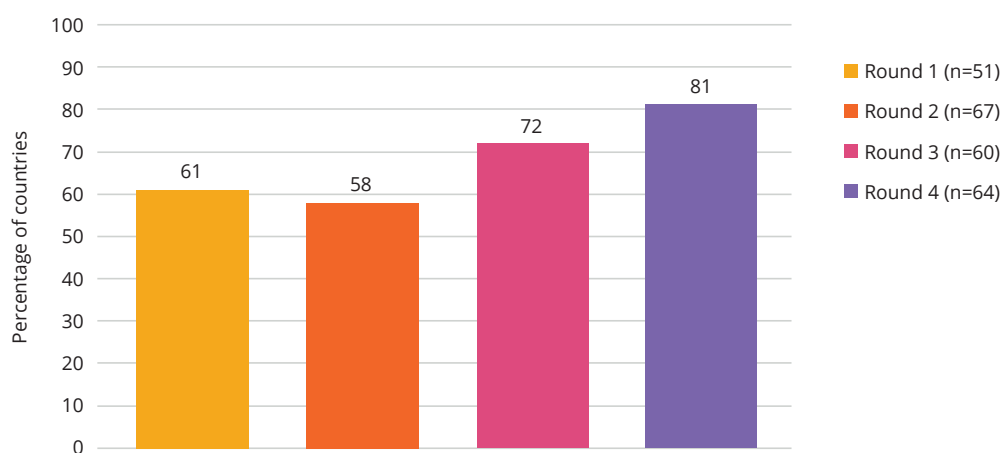
Among the 41 countries with a health system recovery plan, 92% of them had budgeted the plan, 95% had implemented the plan and 94% were informed by a review of current situation.

Investments for essential health services recovery

During 2022, 82% of responding countries indicated that they had allocated additional government funding for the maintenance of essential health services during the COVID-19 pandemic, including service delivery modification and catch-up strategies. Among the 84 countries that responded to all four rounds of the survey, there was a reported increase in the percentage of countries reporting such funding (see Figure 18, below).

Fifty-six percent of countries reported additional funding for covering loss of revenue due, for instance, to removal of user fees or reduced service volumes (trending not available).

Fig. 18. Comparison of the percentage of countries that have allocated additional government funding for the maintenance of essential health services: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)



Investments for longer-term recovery, resilience and preparedness

About three-quarters of countries had a designated national authority with clear responsibility for coordinating health system recovery efforts within the health sector and/or across other sectors.

About three-quarters of countries also reported that the government had allocated additional funding for longer-term health system recovery and/or health service resilience and preparedness beyond the COVID-19 pandemic. The sub-areas for investments (among countries reporting any additional funding for longer-term health system recovery and/or health service resilience and preparedness) are shown in Figure 19 below. This was similar to results in round 3, except that access to medicines and supplies was the predominant sub-area of investment in round 3 rather than health workforce capacity in round 4 (see Figure 20, below). Health information systems was not included as a possible area of investment in round 3.

Fig. 19. Percentage of countries reporting investments in different sub-areas for longer-term health system recovery and/or health service resilience and preparedness for future health emergencies (of the countries reporting any investments, n=67)

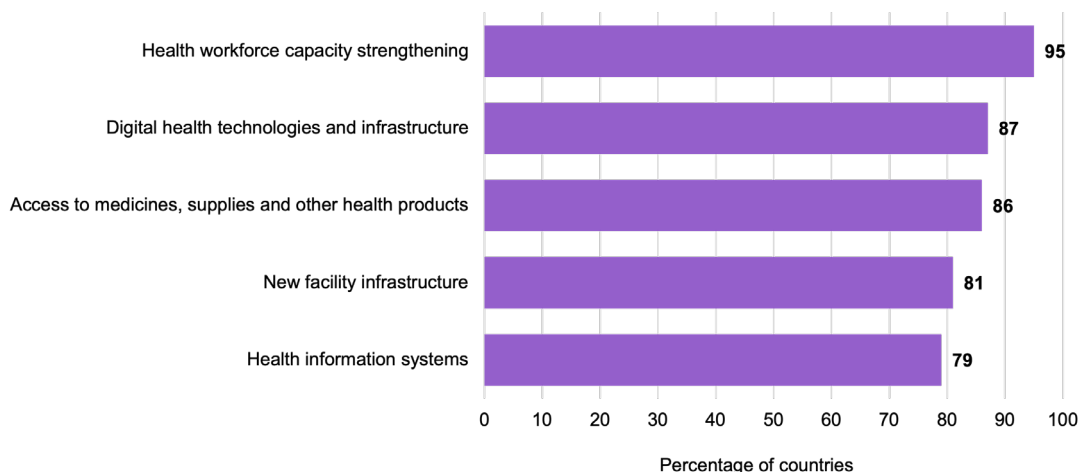
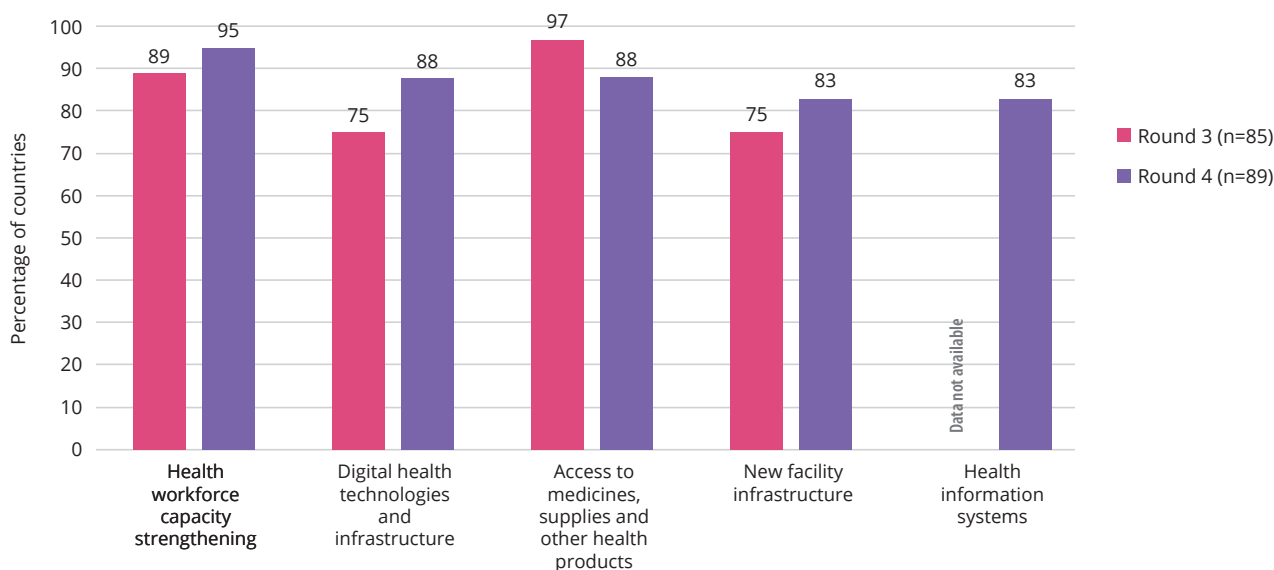
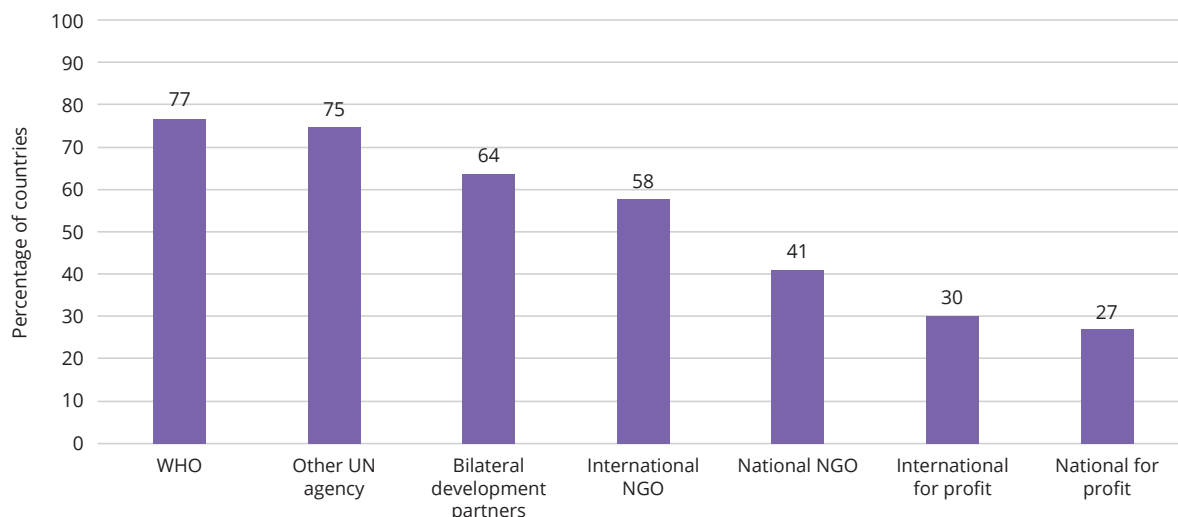


Fig. 20. Comparison of percentage of countries reporting investments in different sub-areas for longer-term health system recovery and/or health service resilience and preparedness for future health emergencies (of the countries reporting any investments): Q4 2021 (Round 3) and Q4 2022 (Round 4)



In addition to government funding, in 2022, most countries reported receiving funding from at least one external agency to support health system recovery efforts, particularly from WHO and other United Nations agencies (see Figure 21, below).

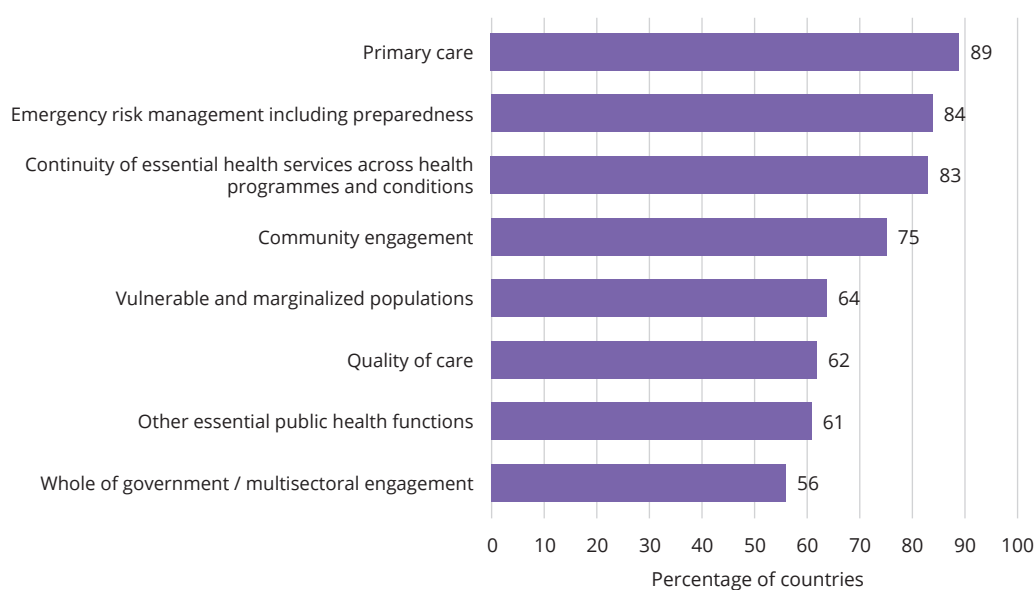
Fig. 21. Percentage of countries reporting receiving additional funding to support health system recovery efforts (n=88)



Priority thematic areas

Almost 90% of countries identified primary care as central to ongoing recovery efforts (see Figure 22, below). Continuity of essential health services across programmes and conditions and emergency risk management including preparedness were also frequently noted as priority areas

Fig. 22. Percentage of countries reporting essential areas for ongoing health system recovery efforts (n=101)

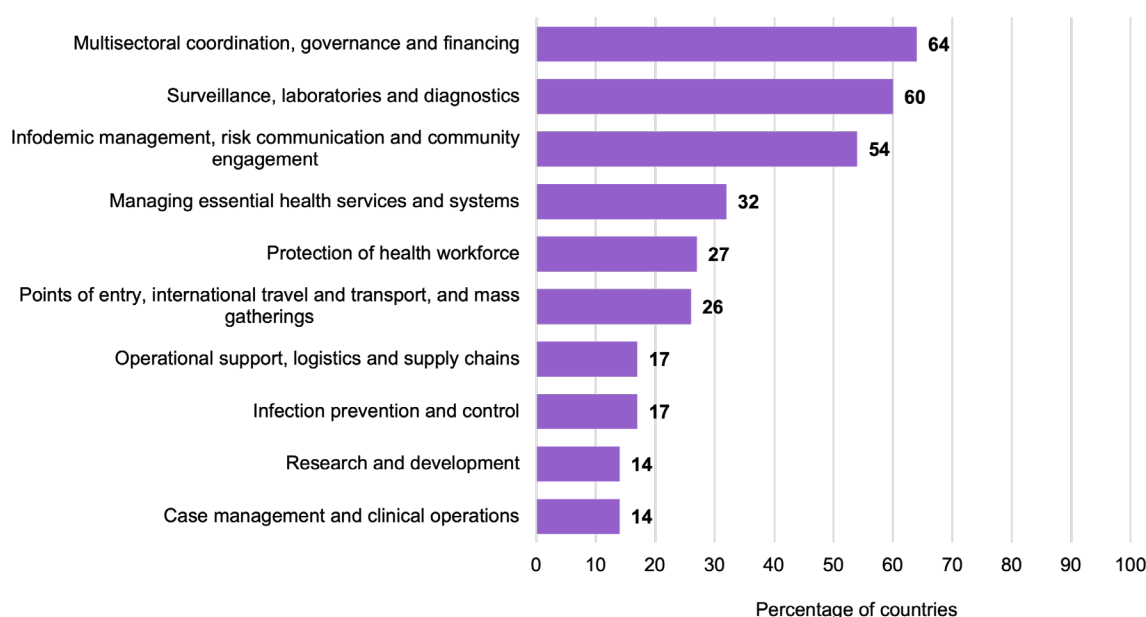


Preparations for COVID-19 surges and other health emergencies

Three years into the pandemic, countries were applying lessons learned to preparations for potential resurgences of COVID-19 cases and other health emergencies.

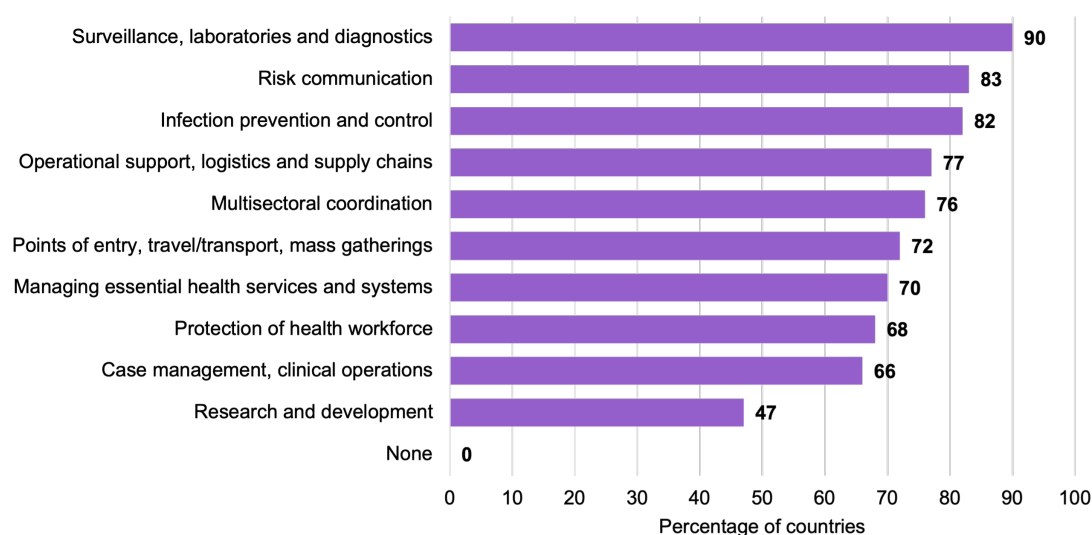
Out of 83 reporting countries, 69 countries assessed their current surge capacity and developed a costed plan for a potential resurgence of COVID-19 cases. As seen in Figure 23 (below), the most commonly reported priority health capacity areas for strengthening to prepare for a potential surge in COVID-19 cases were multisectoral coordination; governance and financing; surveillance, laboratories and diagnostics; and infodemic management, risk communication and community engagement.

Fig. 23. Percentage of countries reporting strengthening of priority health capacity areas to prepare for a potential surge in COVID-19 cases (n=85)



Surveillance, risk communication and multisectoral coordination were among the most frequently reported capacities countries had institutionalized or strengthened in the COVID-19 context. The 88 countries reporting at least one non-COVID-19 health emergency were able to apply these measures to the response in these emergencies (see Figure 24, below).

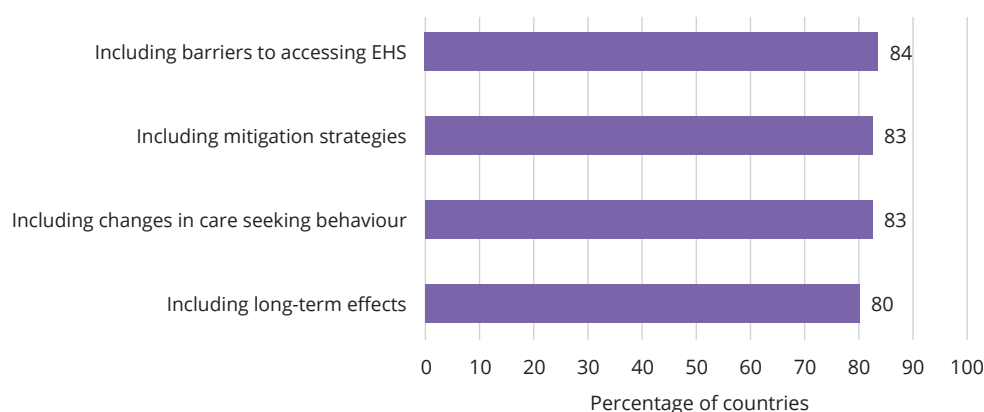
Fig. 24. Percentage of countries reporting capacities strengthened during pandemic that were leveraged for another public health emergency/disaster (n=88)



Information tracking and documentation

Most countries are monitoring and tracking information to support continuity of essential health services throughout the course of the pandemic, including for vulnerable groups. Almost 90% of responding countries were regularly monitoring the continuity of essential health services. The breakdown of aspects included in this monitoring is shown in Figure 25, below.

Fig. 25. Percentage of reporting countries (n=89) that regularly monitored aspects of essential health services during the COVID-19 pandemic



More than 90% of 89 responding countries were collecting data on comorbidities in COVID-19 patients, while 57% were collecting or collating patient-level data on post-COVID-19 condition and its sequelae. Sixty-six percent of countries had completed one or more qualitative or quantitative analysis of health inequities during the COVID-19 pandemic. Both of these results are similar to those reported in round 3 (4).

Among responding countries, 91% reported currently having capacities to track and address the infodemic and health misinformation in Q4 2022. Across the three previous survey rounds, the percentage of countries with a dedicated team in place to track and address the infodemic and health misinformation remained relatively stable (around 89%).

Furthermore, 75% of countries had an active, multi-source social listening mechanism in place to inform decision-making. About the same percentage had conducted a focused review and documentation of the current state of the health system and the impact of COVID-19 to inform recovery planning.

Preparedness for future pandemics of infectious respiratory diseases

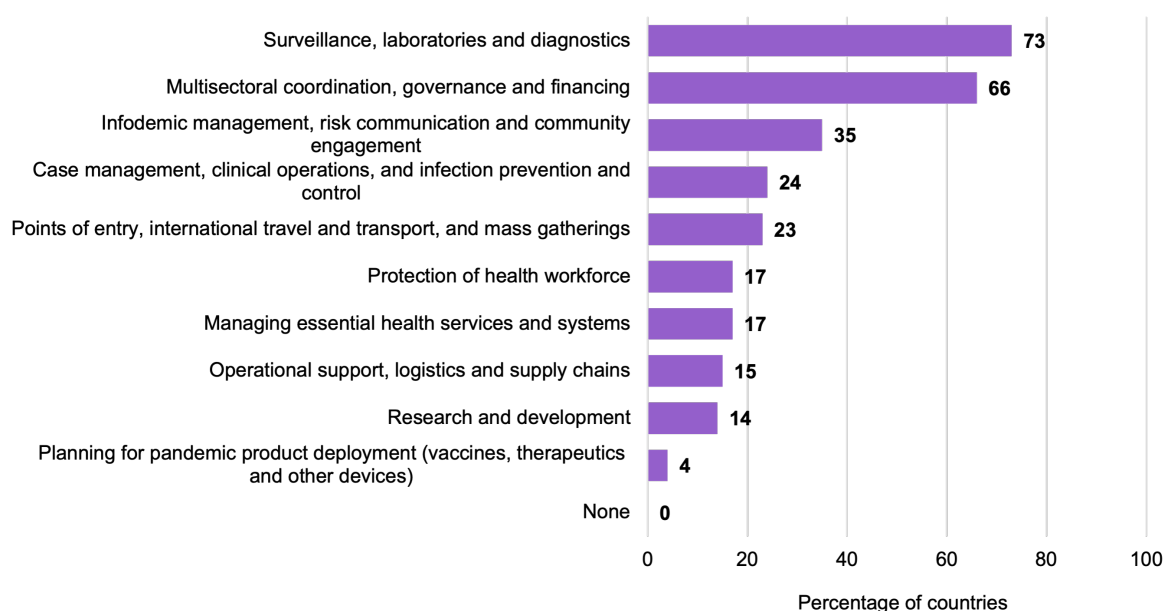
On 27 April 2022, WHO published a [policy brief](#) on *Strengthening pandemic preparedness planning for respiratory pathogens* (11). The brief encourages countries to develop or update their respiratory pathogen preparedness plans based on lessons from COVID-19, outlines planning approaches and describes the guidance and tools that can be expected from WHO to support the process.

Of 107 responding countries, 74% reported having a national multisectoral committee for future respiratory pathogen pandemic preparedness, and 68% of countries reported having a respiratory pathogen pandemic preparedness plan, though other informal reporting from regional focal points suggests lower global coverage, thus the data should be interpreted with caution.

The top three priority health capacity strengthening areas for future respiratory pathogen pandemic preparedness are similar to those reported for possible resurgences of COVID-19 and for application to

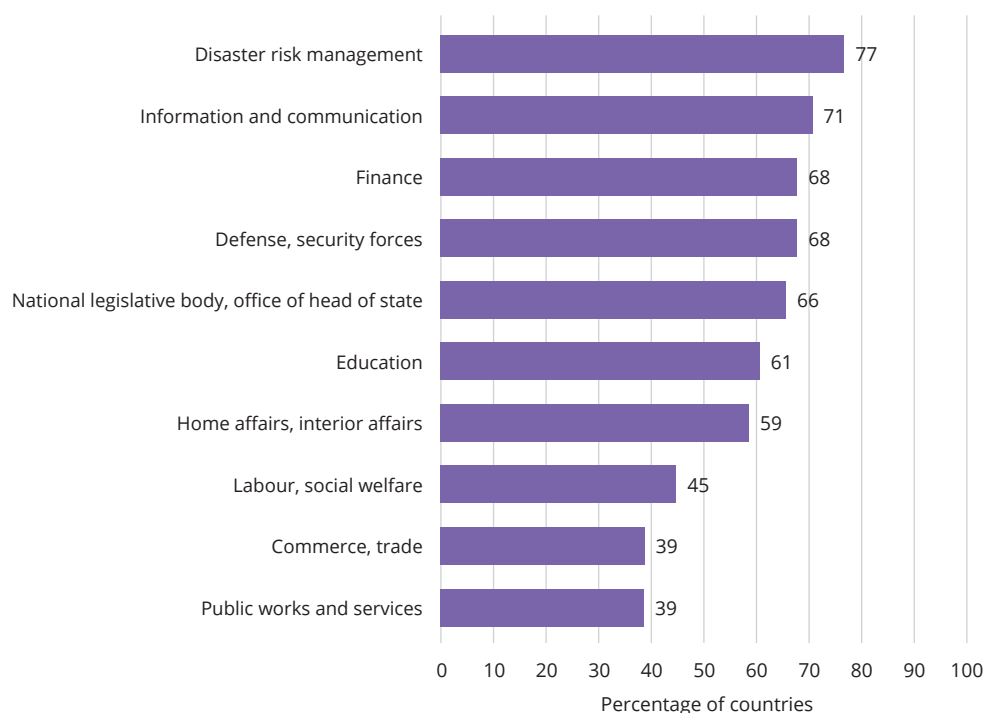
other health emergencies (see page 26). Surveillance, risk communication and multisectoral coordination were the top three priorities, although risk communication was reported as a priority in only about one-third of countries (see Figure 26, below).

Fig. 26. Percentage of countries reporting health capacity strengthening area as a priority for future respiratory pathogen pandemic preparedness (n=111)



Many ministries and government agencies are engaged in future respiratory pathogen preparedness (see Figure 27, below).

Fig. 27. Percentage of countries that reported engagement of ministries/agencies in future respiratory pathogen preparedness (n=111)



Country priorities and technical assistance needs

Countries were asked to identify their most urgent technical assistance and intervention support needs for maintaining essential health services and ensuring access to essential COVID-19 tools.

In response to an open-ended question on priority needs for maintaining continuity of essential health services, 74 countries flagged technical assistance and support needs, most frequently related to health workforce strengthening and protection, health services monitoring capacities, organization of models of care and continuity of essential health services and service recovery. All country-reported priority needs for maintaining essential health services related to the following areas:

- health workforce strengthening and protection (28 countries)
- health services monitoring and evaluation capacities (24 countries)
- models of care: service package selection, planning, design, organization and management (21 countries)
- governance, policy and planning guidance - continuity of EHS and service recovery (18 countries)
- financial planning and funding support (16 countries)
- essential health products and equipment (12 countries)
- risk communications and community engagement (11 countries)
- governance, policy and planning guidance - long-term health service resilience and preparedness (9 countries)
- quality of care (7 countries)
- availability of medicines, diagnostics vaccines and other health products (7 countries)
- infection prevention and control guidance for health workers (6 countries)
- supply chain management guidance and support (5 countries)
- digital and telehealth technologies (4 countries)
- Covid-19 vaccination capacities (4 countries)
- diagnostic and lab capacities (4 countries)
- documentation and learning of best practices for EHS continuity (4 countries)
- logistics support (4 countries)
- research and development (4 countries)
- facility infrastructure (3 countries)
- availability of PPE (2 countries)
- private sector engagement (1 country)
- advocacy support (1 country)
- clinical care guidelines (1 country).

Technical support needs for ensuring access to essential COVID-19 tools were similar to those most frequently reported for continuity of essential health services and mirrored the aforementioned bottlenecks reported by countries. Health worker recruitment, financial planning, and risk communications and community engagement were the areas of technical assistance most identified in common by countries (see Table 3, below). These health system areas were also a main focus of frequently reported strategies to overcome service disruptions.

Table 3. Priority technical assistance and intervention support needs for scaling up access to essential COVID-19 tools (n=83)

Technical assistance and intervention support needs	Essential COVID-19 tools			
	Diagnostic and testing 	Therapeutics 	PPE distribution and use 	COVID-19 vaccination 
Health worker recruitment, retention and training	76%	80%	49%	47%
Surge procurement of essential COVID-19 tools	37%	33%	46%	21%
Financial planning support	59%	59%	65%	37%
Risk communications and community engagement strategies	27%	13%	—	65%
Rapid tools or guidance to assess and monitor gaps and health system absorption capacities	32%	24%	43%	22%
Guidance on developing policies/ strategies	26%	22%	22%	19%
Operational guidance and protocols for supply chain management	22%	19%	40%	24%
Additional health care infrastructure	—	33%	—	—

Conclusions

Results from the fourth round of the *pulse survey on the continuity of essential health services during the COVID-19 pandemic* suggest that countries across the globe are seeing the first notable signs of service recovery since 2020. By the end of 2022, countries reported fewer disruptions across all service delivery settings compared to 2020-2021 reporting. Moreover, fewer countries were still intentionally scaling back service delivery platforms and essential public health functions, demonstrating important returns to routine health system operations and service delivery.

However, contrary to expectations, service delivery and utilization were not yet back to pre-pandemic levels. Essential health service disruptions were still reported in the vast majority of countries across all regions and income levels, and half of countries were facing increasing backlogs in tracer essential health services that must be addressed to maintain the timely provision of quality care.

Health workforce and community demand-related issues continued to represent the biggest barriers to delivering COVID-19 and other essential health services. Enduring challenges related to health worker availability and capacities are particularly concerning for negative health impact. A recent report from the Organization for Economic Co-operation and Development (OECD) suggests that a shortage of health workers and high levels of exhaustion among those who are active are affecting the quality of care and contributing to increased waiting times. (12). Similar findings from other sources were noted by The Economist. (13)

Despite ongoing and persistent health system challenges, countries showed in this survey that they were making important investments to recover essential health services and build more prepared and resilient health systems for the future. Most countries have adopted strategies and innovations that not only helped to overcome disruptions and recover services in the short term but were also being integrated into routine service delivery for more resilient and higher quality essential health services for the long term. Most countries have also started to integrate COVID-19 related services into routine health service delivery, signalling another major step in transitioning towards recovery.

In addition to important service delivery modifications, most countries have also started to invest in broader health system capacities and preparedness. Many countries have reported leveraging specific health system capacities strengthened for the COVID-19 response for other health emergencies, especially in terms of surveillance, laboratories and diagnostics; and multisectoral coordination, governance and financing. Additionally, most countries now have systems in place to regularly monitor essential health services information and track and address infodemic and health misinformation. Nearly half of countries have developed plans for future health service resilience and pandemic preparedness, and over two thirds of countries have developed a specific acute respiratory pandemic preparedness plan.

Still, further action is needed to help health systems fully recover from the pandemic, eliminate health service disruptions and mitigate the long-term direct and indirect impact on health and well-being caused by the pandemic. Documentation and learning at every level – from ministries of health to local points of care – on the best strategies and approaches for restoring services and adapting for the future will be critical.

In the context of the pandemic, WHO's mission is to continue to support countries as they transition to a recovery phase and ensure continued access to high-quality care during and beyond the COVID-19 pandemic.

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Annex 1: Service disruptions to condition- and programme-specific tracer health service areas

Countries continued to report disruptions across all major tracer service areas across the life course in Q4 2022 (see Figure A1, below).

Fig. A1. Service disruptions by tracer service area in Q4 2022

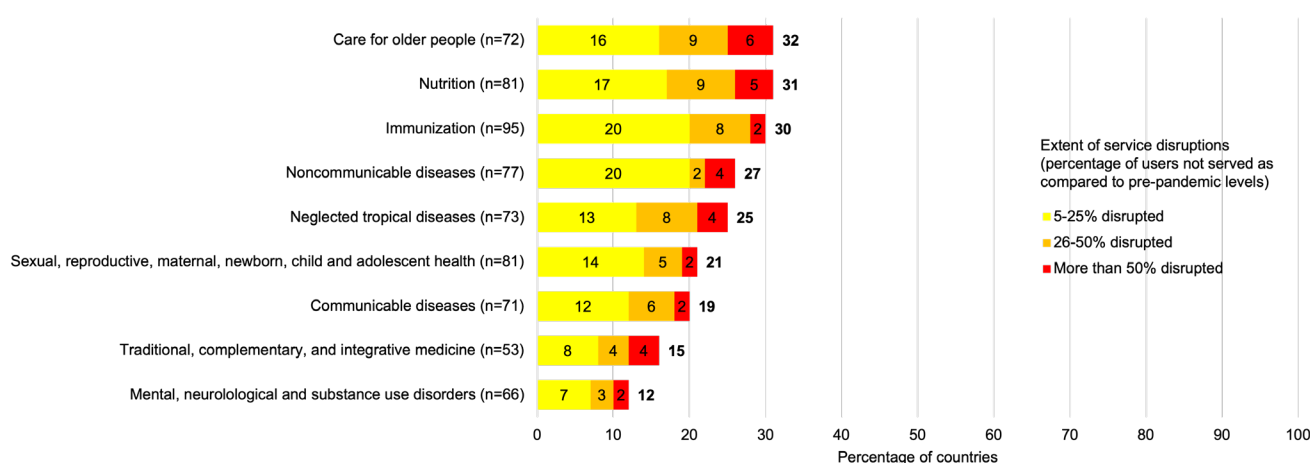
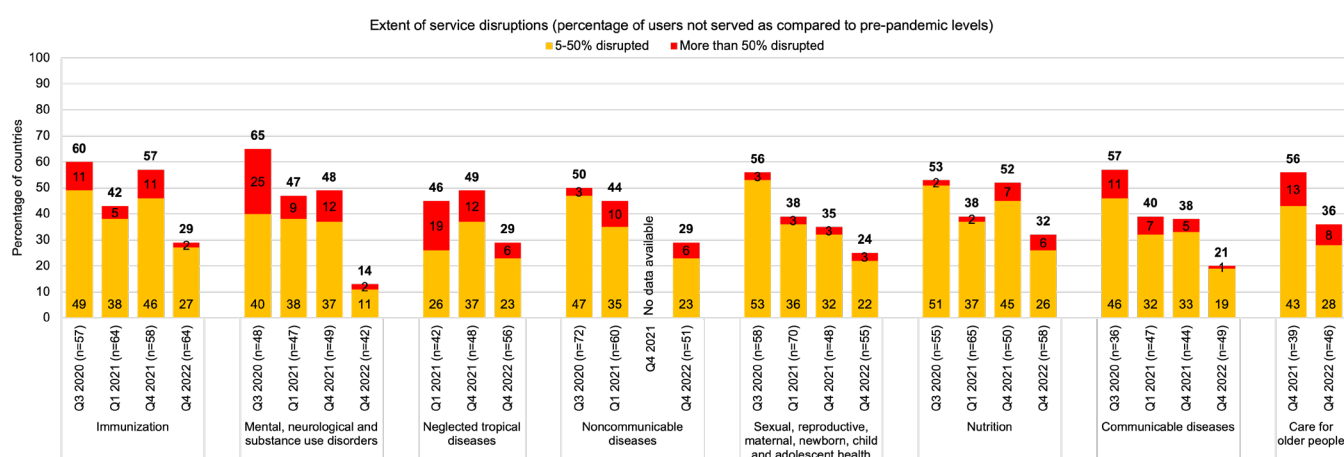


Fig. A2. Comparison of disruptions by tracer services in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022



Service disruptions in Q4 2022 and trends for condition- and programme- specific tracer health areas

Disruptions in services for sexual, reproductive, maternal, newborn, child and adolescent health

Fig. A3. Percentage of countries reporting disruptions in services for sexual, reproductive, maternal, newborn, child and adolescent health in Q4 2022

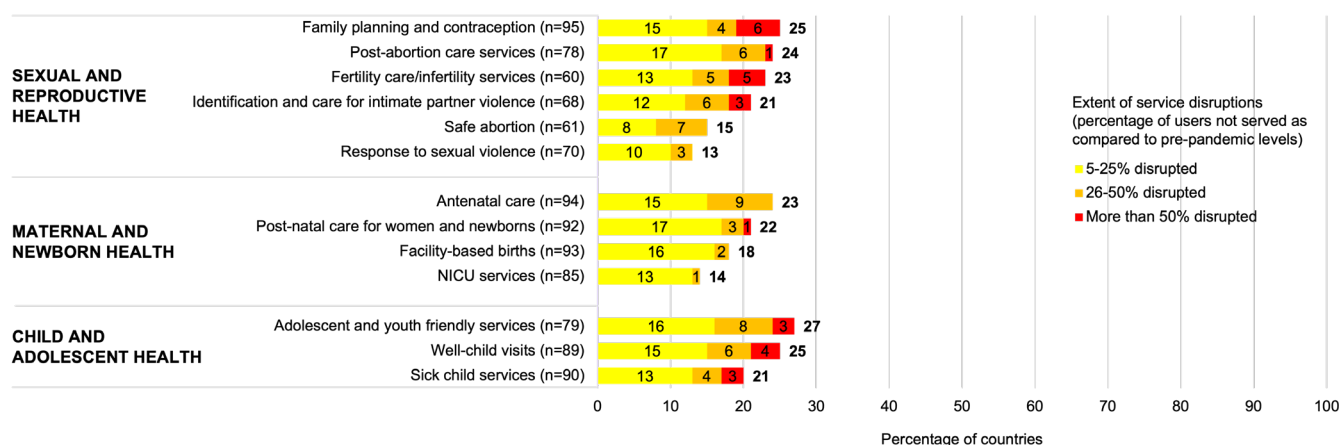


Fig. A4. Comparison of disruptions to services for sexual and reproductive health in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

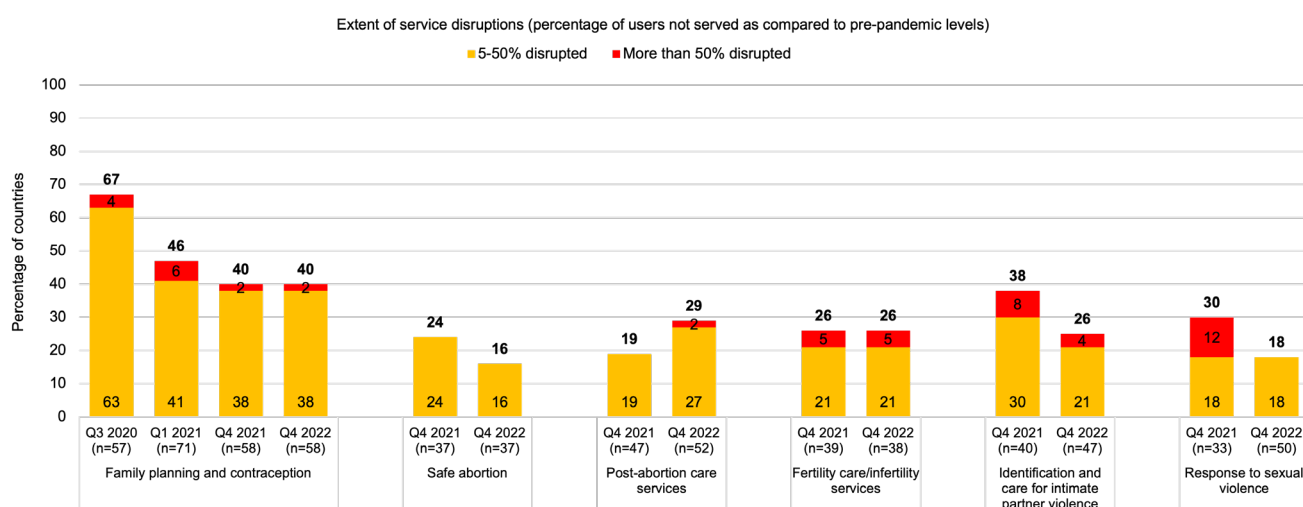


Fig. A5. Comparison of disruptions to services for maternal and newborn health in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

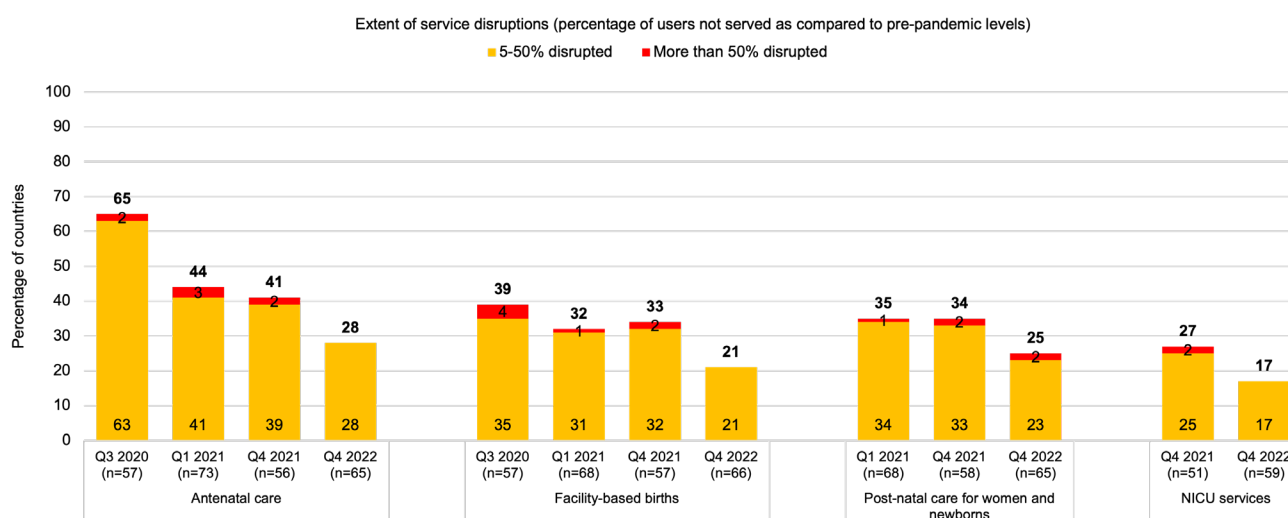


Fig. A6. Comparison of disruptions to services for child and adolescent health in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

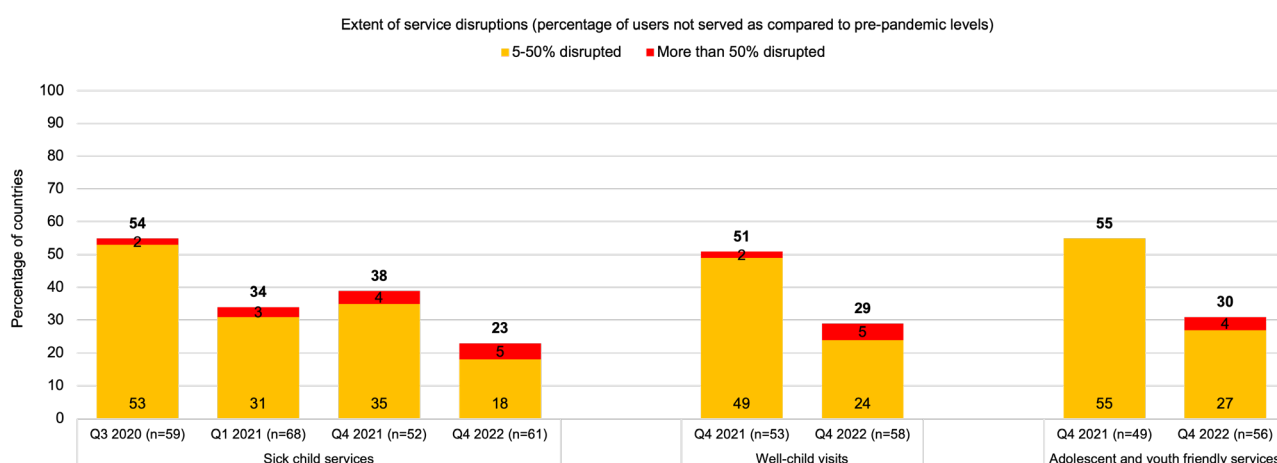
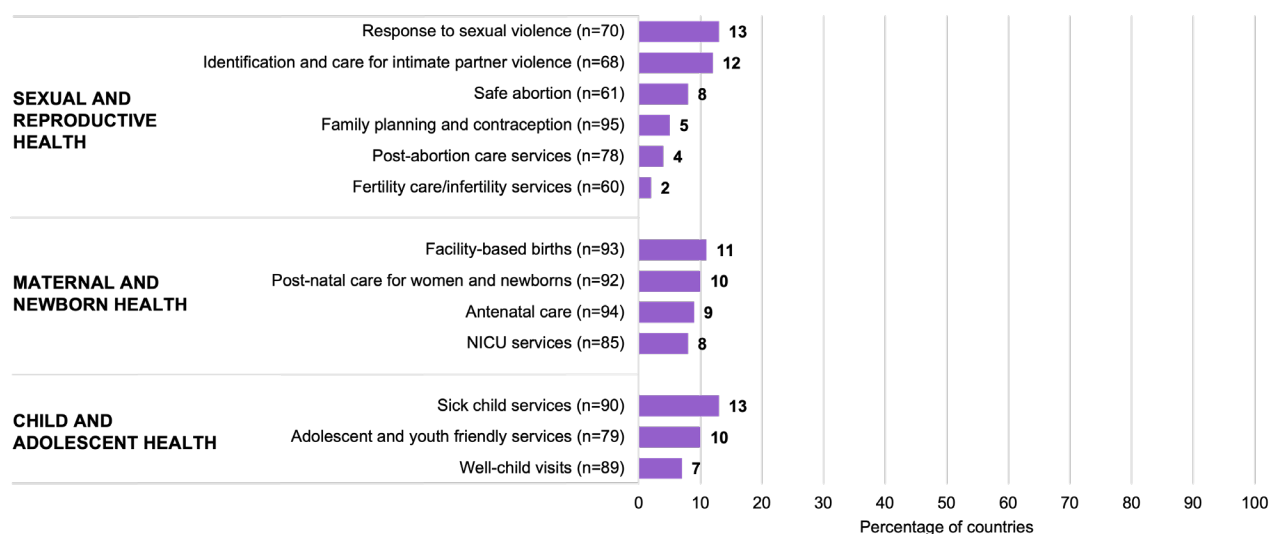


Fig. A7. Percentage of countries reporting increases in service volumes for sexual, reproductive, maternal, newborn, child and adolescent health (as compared to pre-pandemic levels) in Q42022



Disruptions in nutrition services

Fig. A8. Percentage of countries reporting disruptions to nutrition services in Q4 2022

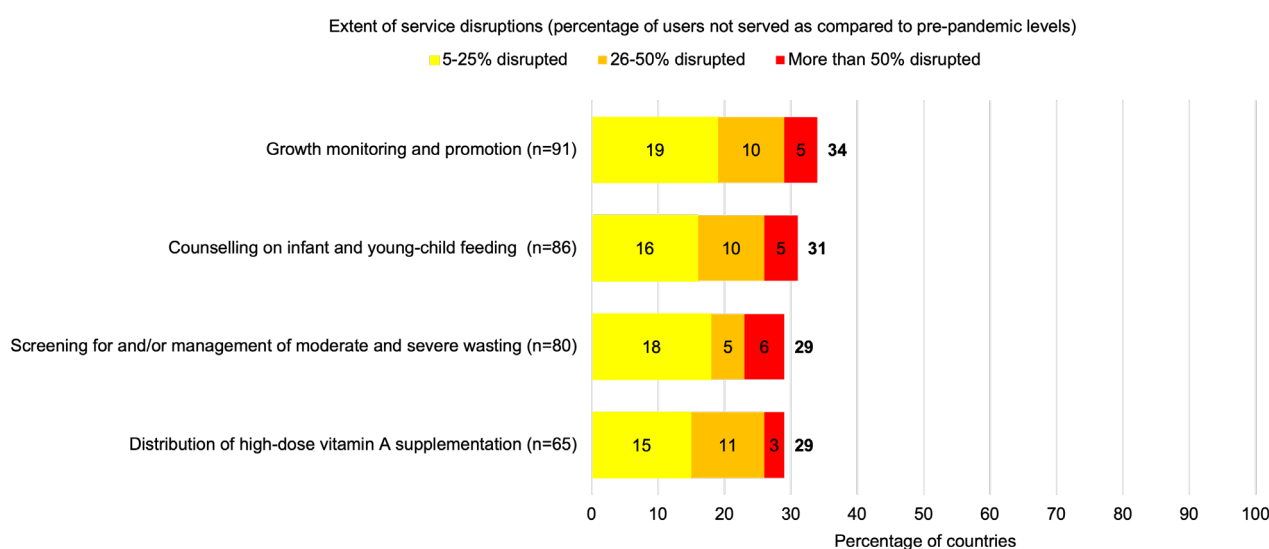


Fig. A9. Comparison of disruptions to nutrition services in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

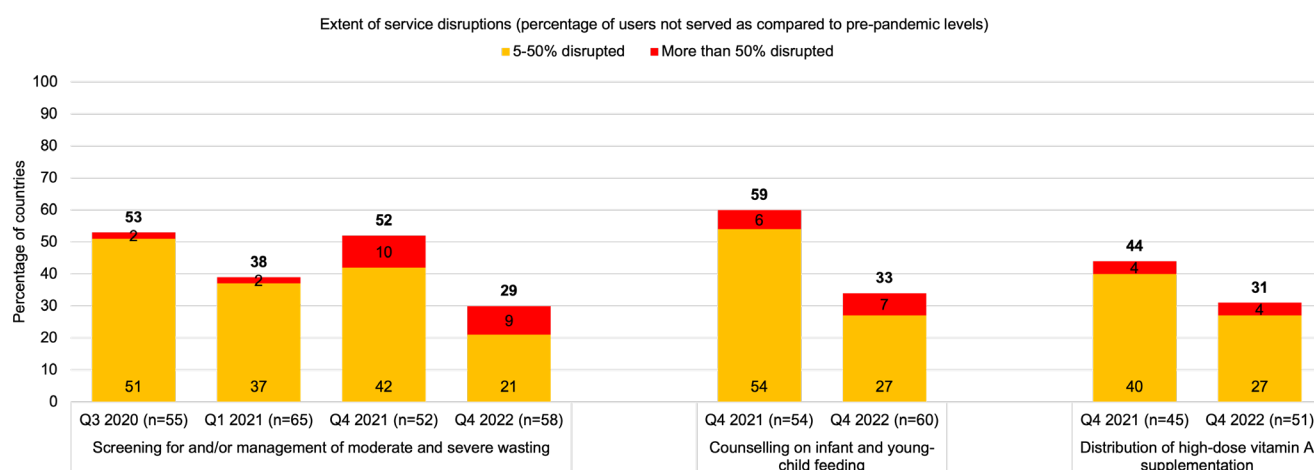
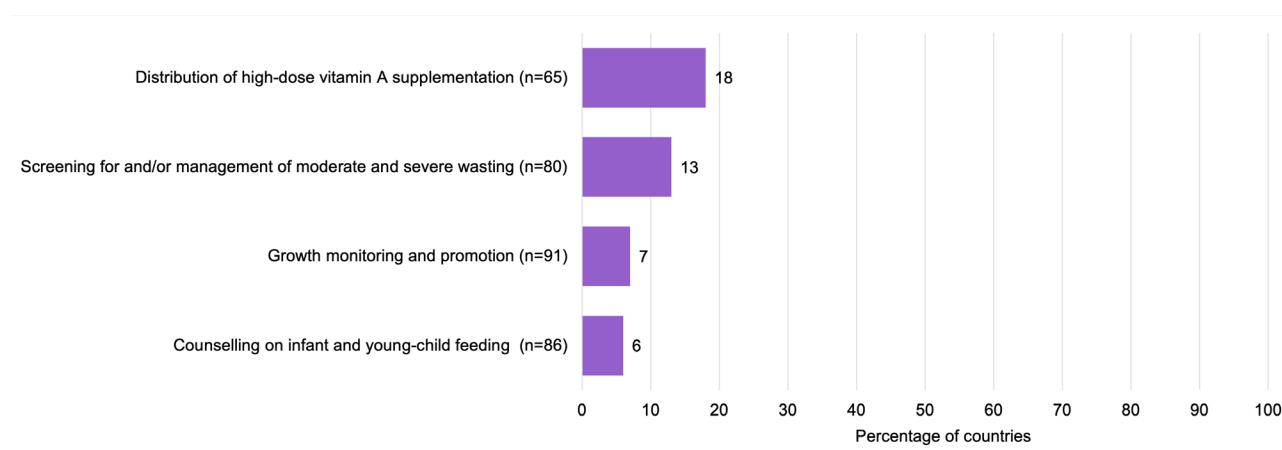


Fig. A10. Percentage of countries reporting increases in nutrition service volumes (as compared to pre-pandemic levels) in Q4 2022



Disruptions in routine immunization services

Fig. A11. Percentage of countries reporting disruptions in routine immunization services in Q4 2022

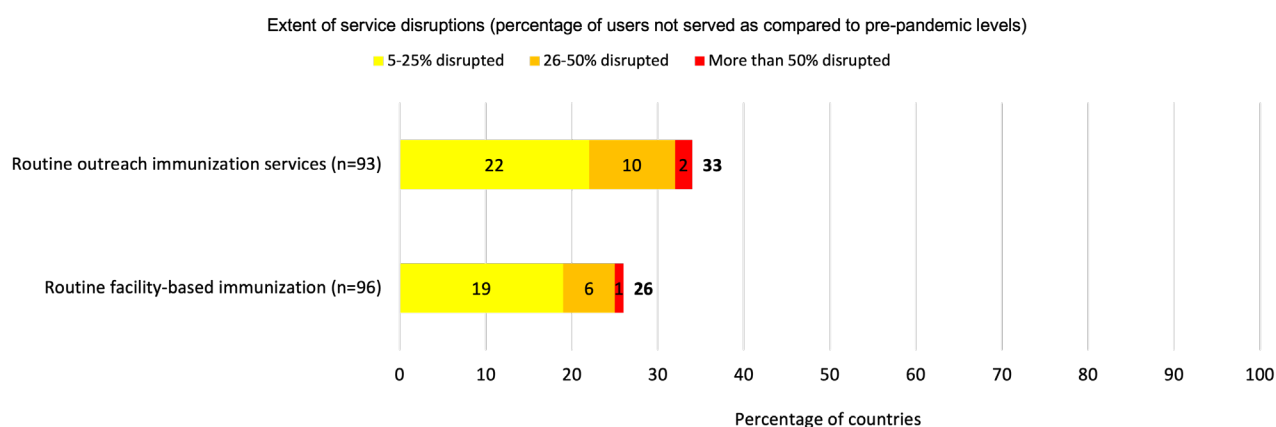


Fig. A12. Comparison of disruptions to routine immunization services in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

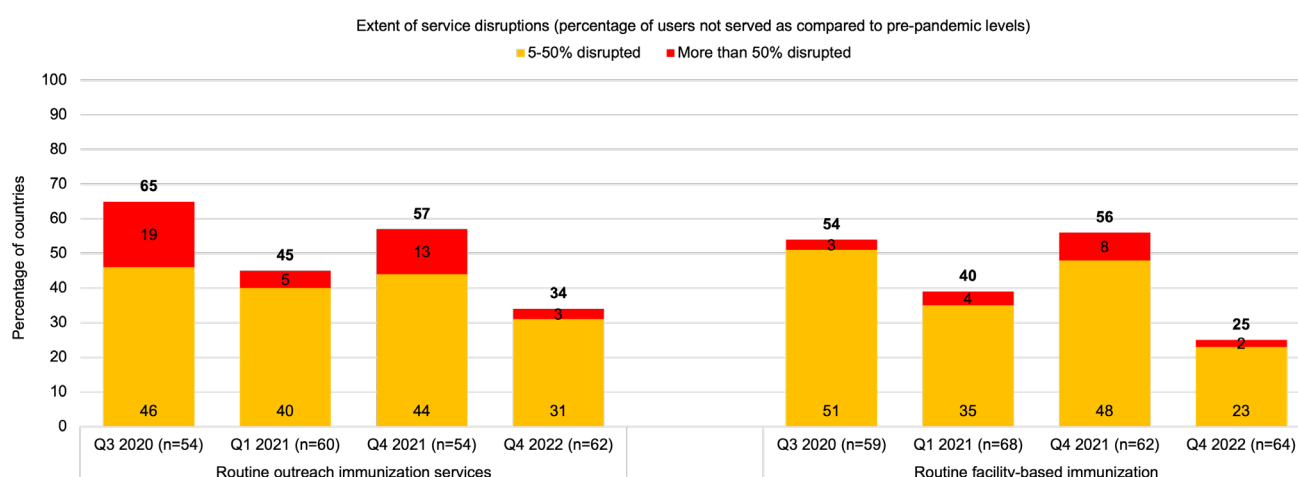
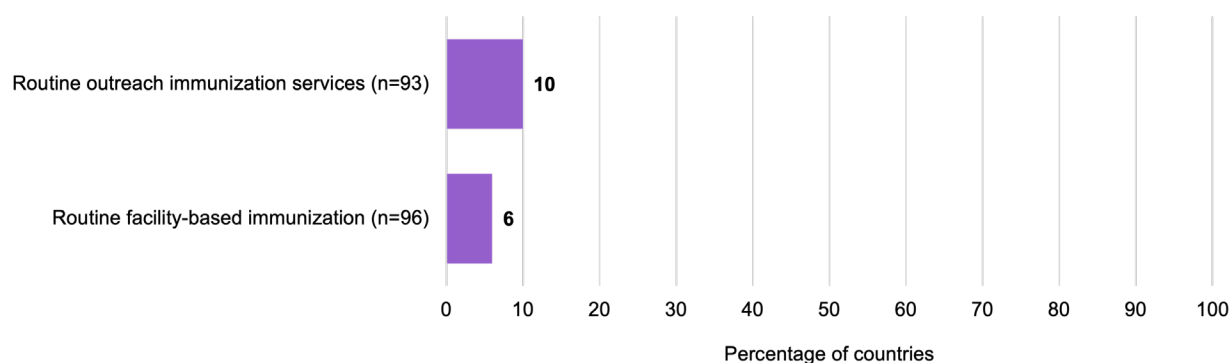


Fig. A13. Percentage of countries reporting increases in routine immunization service volumes (as compared to pre-pandemic levels) in Q4 2022



Disruptions in services for mental, neurological and substance use disorders

Fig. A14. Percentage of countries reporting disruptions in services for mental, neurological and substance use disorders in Q4 2022

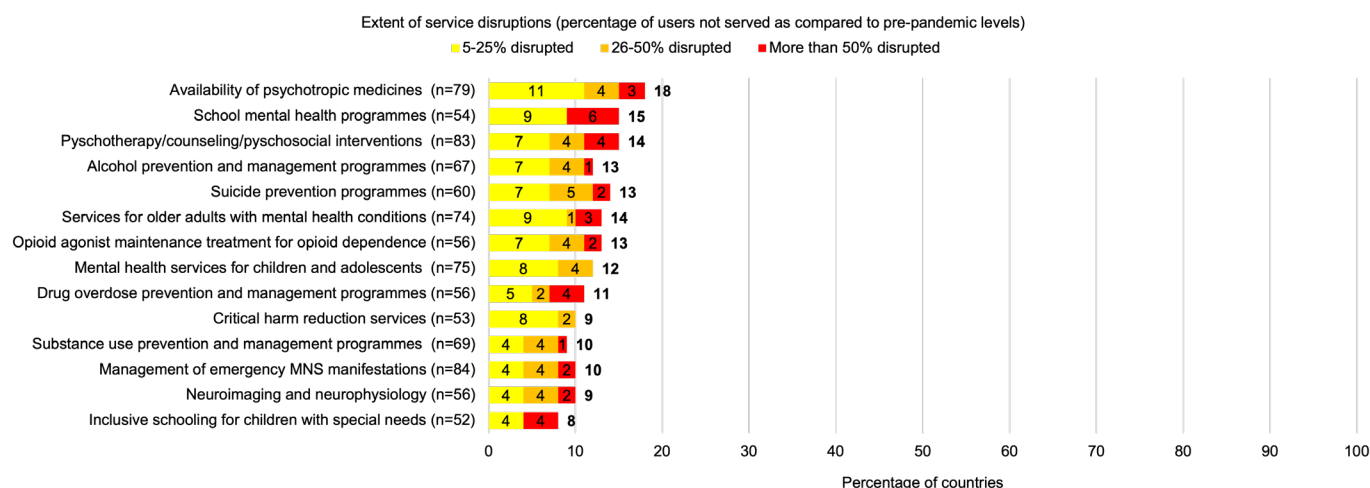


Fig. A15. Comparison of disruptions to services for mental health, neurological, and substance use disorders in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

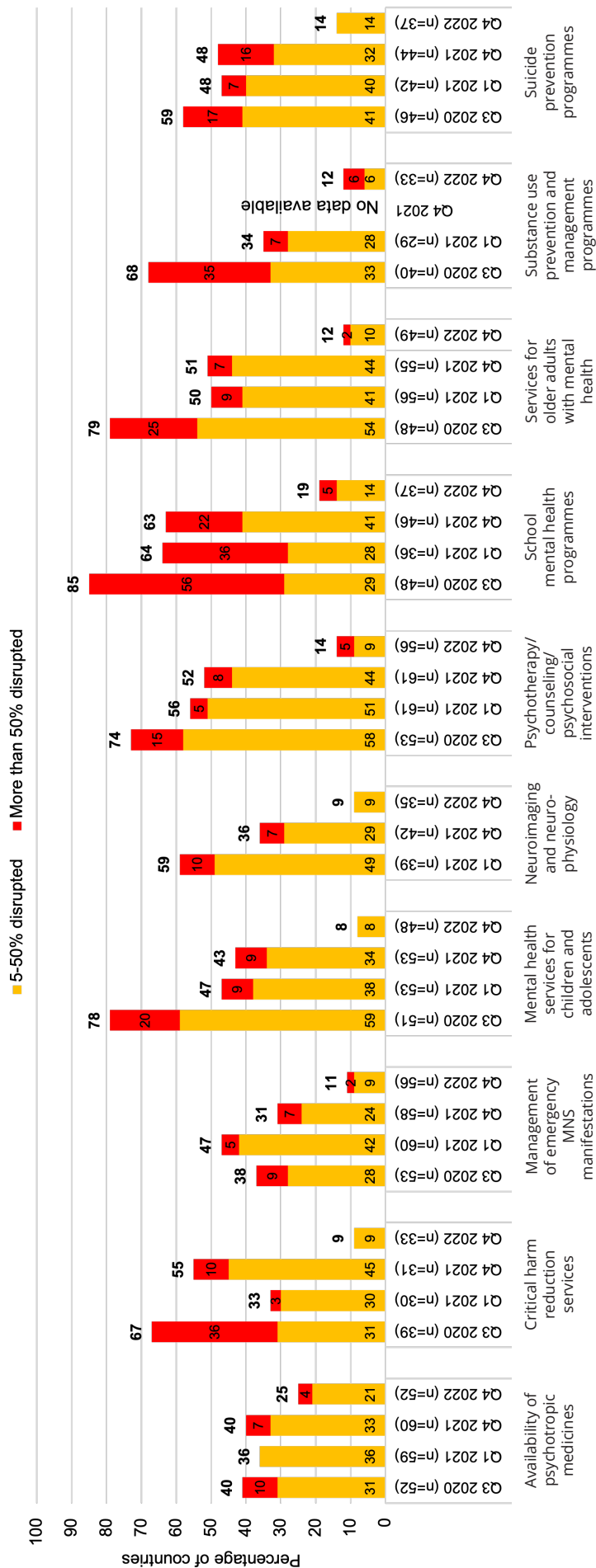
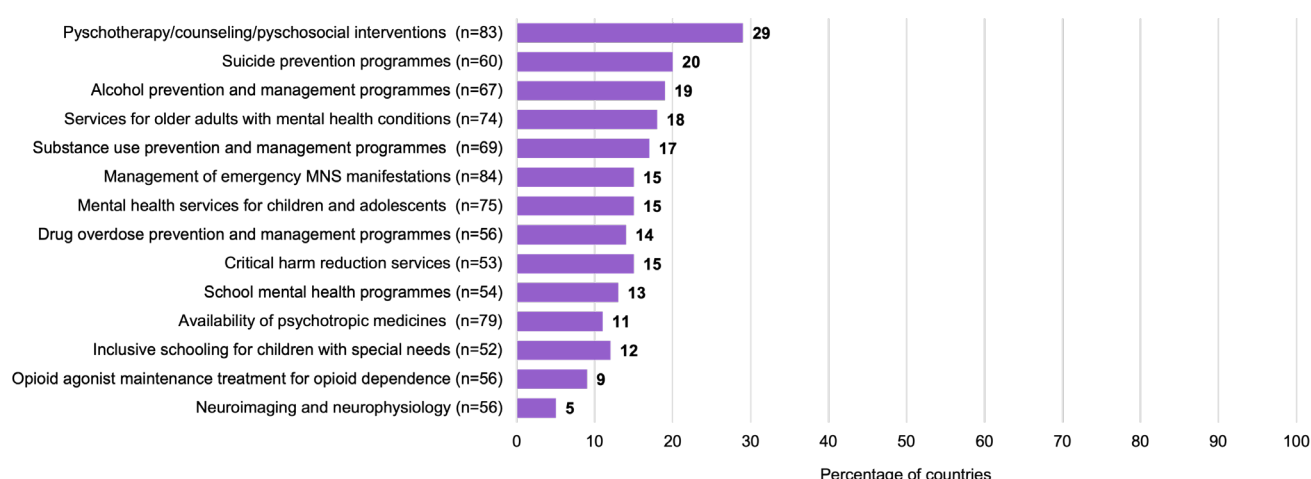


Fig. A16. Percentage of countries reporting increases in service volumes for mental, neurological and substance use disorders services (as compared to pre-pandemic levels) in Q4 2022



A [scientific brief](#) released by WHO in March 2022 (14) reported that the COVID-19 pandemic initially triggered a 25% increase in the prevalence of anxiety and depression worldwide. Rounds 1 through 3 of this survey consistently showed significant disruptions in mental health services due to the pandemic. The round 4 pulse survey now suggests an increase in service uptake, which may reflect increased demand or methodological factors (such as a lower number of participating countries).

Disruptions in communicable disease services

Fig. A17. Percentage of countries reporting disruptions in communicable disease services in Q4 2022

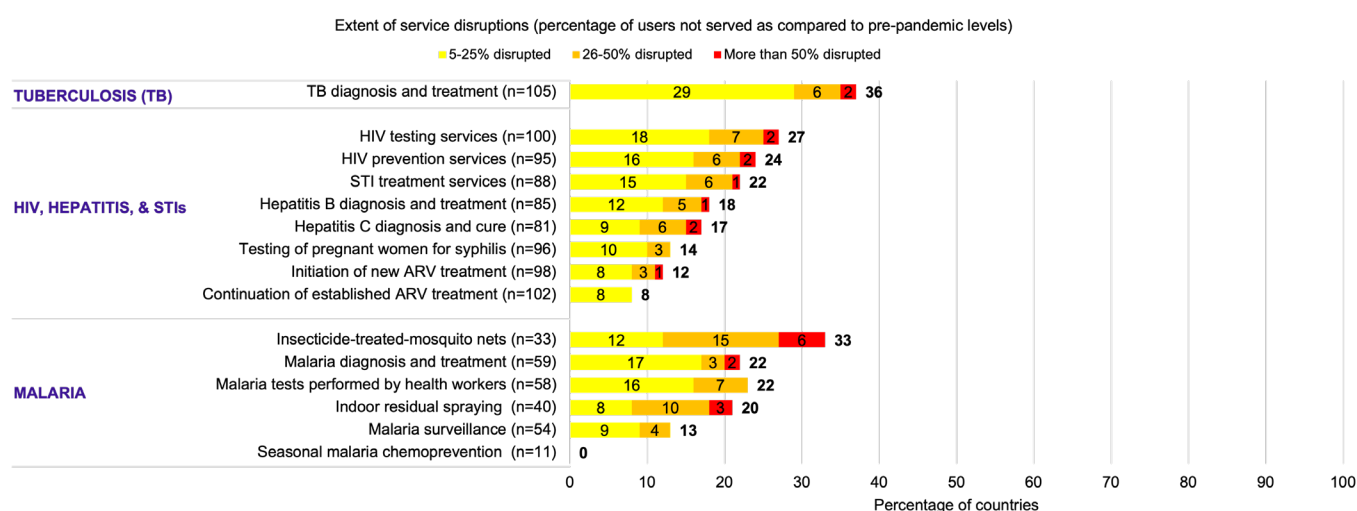


Fig. A18. Comparison of disruptions to services for tuberculosis (TB) diagnosis and treatment in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4) in Q4 2022

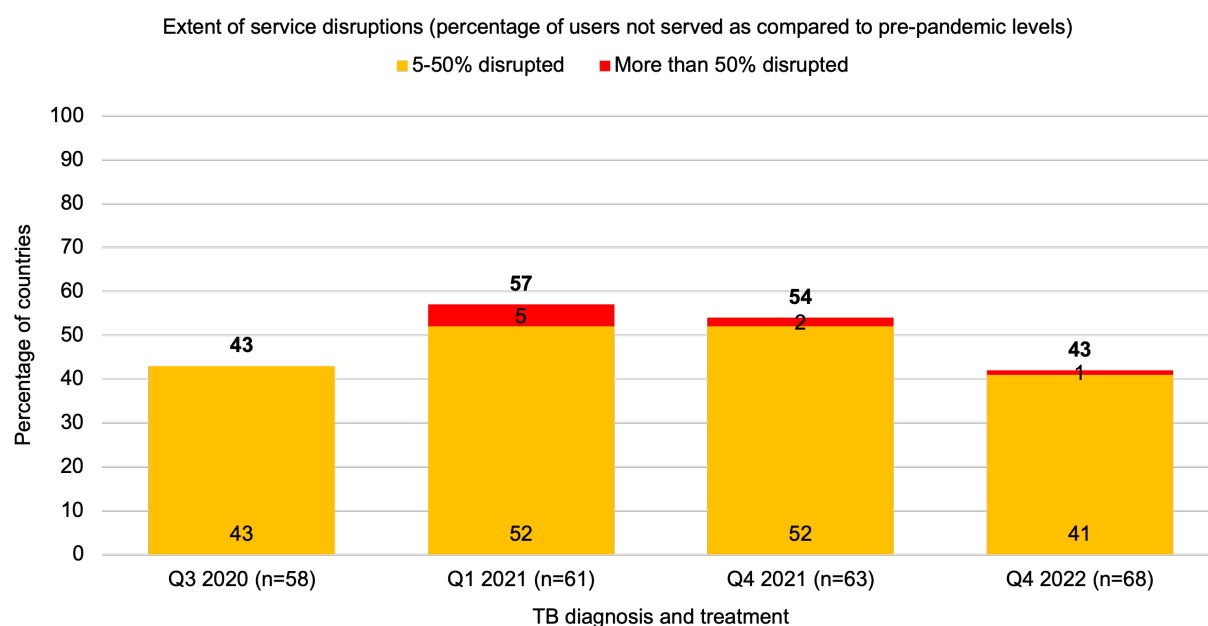


Fig. A19. Comparison of disruptions to services for HIV and sexually transmitted infections in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

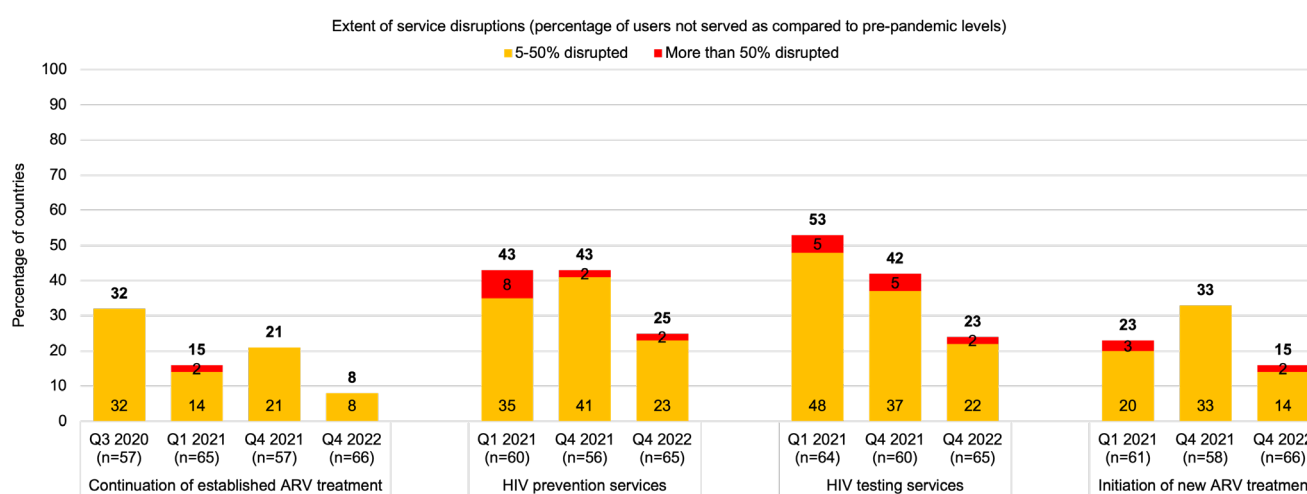


Fig. A20. Percentage of countries reporting increases in HIV, hepatitis and sexually transmitted infection (STI) service volumes (as compared to pre-pandemic levels) in Q4 2022

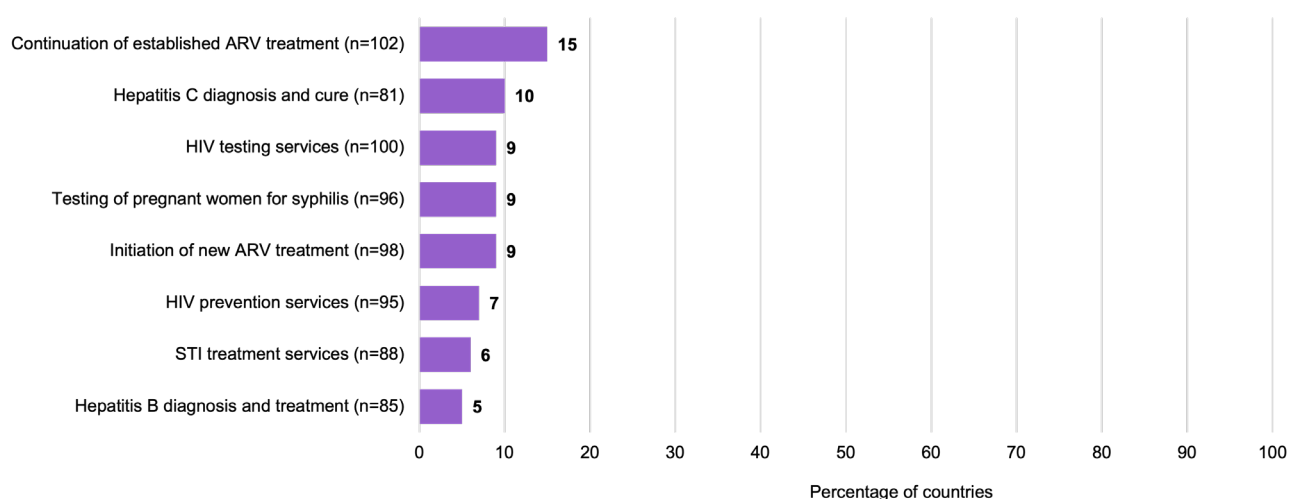


Fig. A21. Comparison of disruptions to malaria services in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

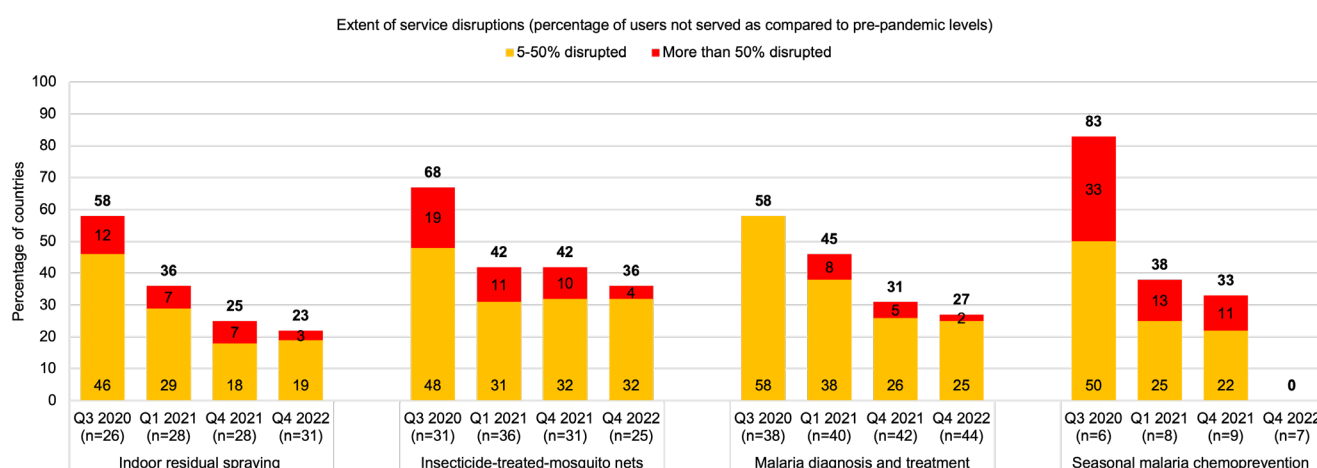
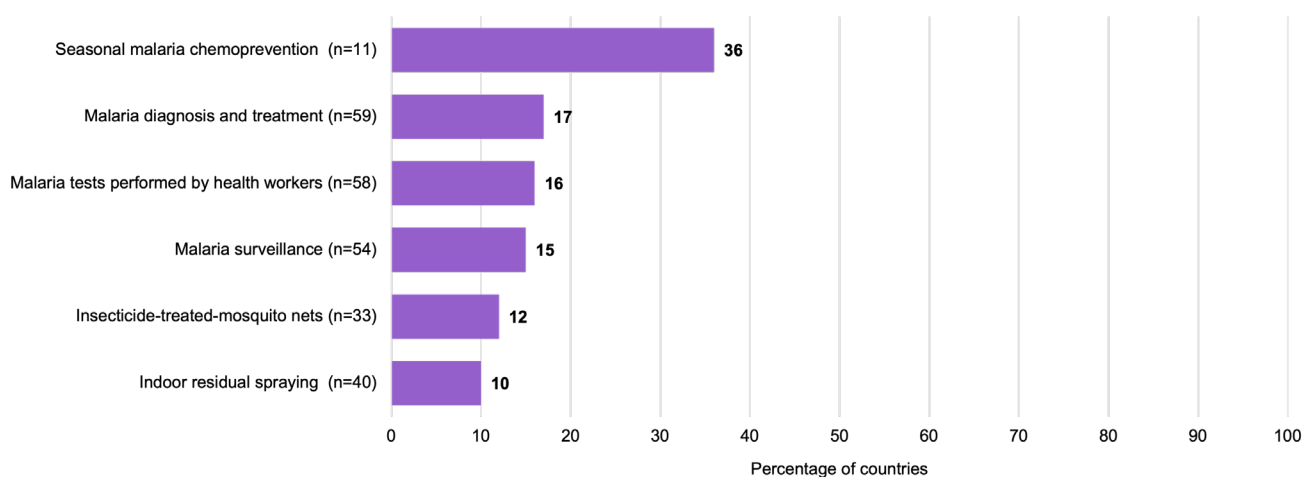


Fig. A22. Percentage of countries reporting increases in malaria service volumes (as compared to pre-pandemic levels) in Q4 2022



Disruptions in services for neglected tropical diseases

Fig. A23. Percentage of countries reporting disruptions in neglected tropical disease (NTD) services in Q4 2022

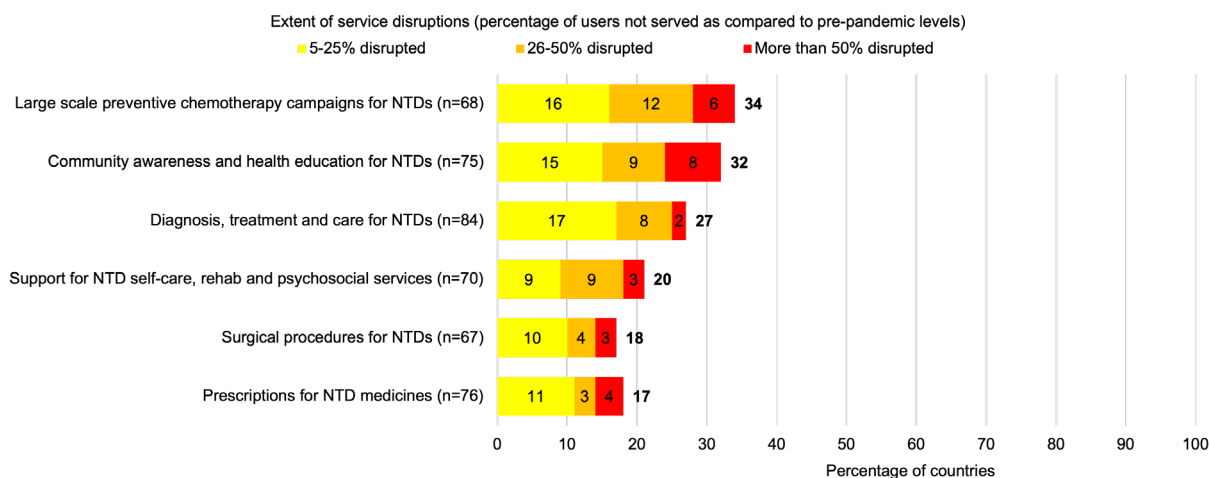


Fig. A24. Comparison of disruptions in services for neglected tropical diseases in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

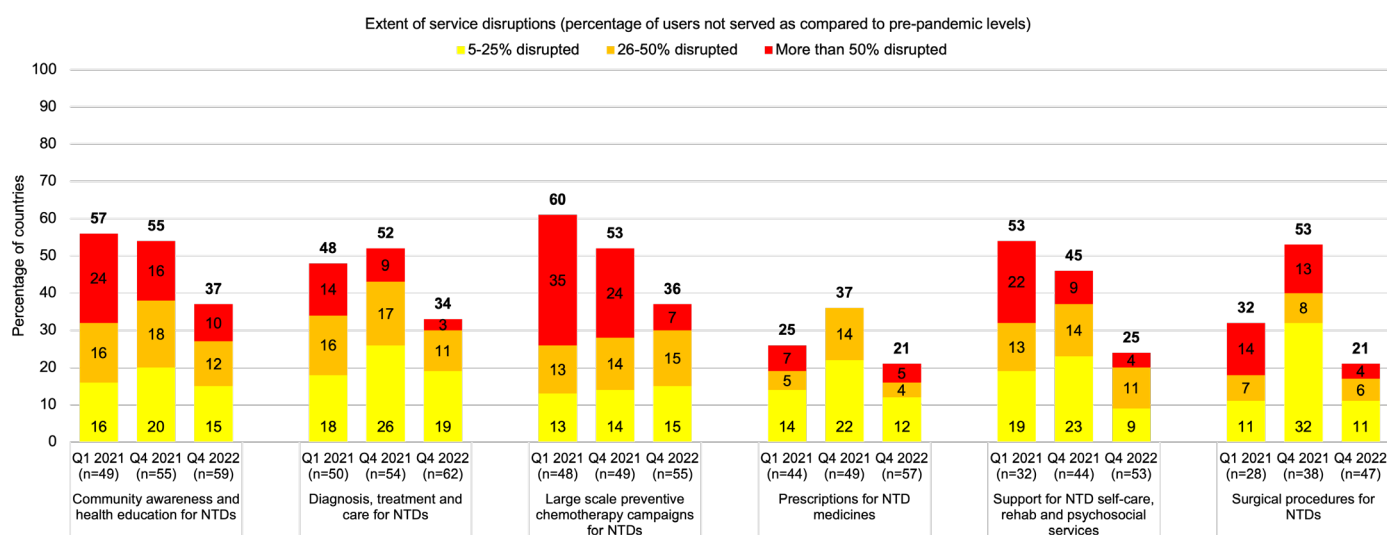
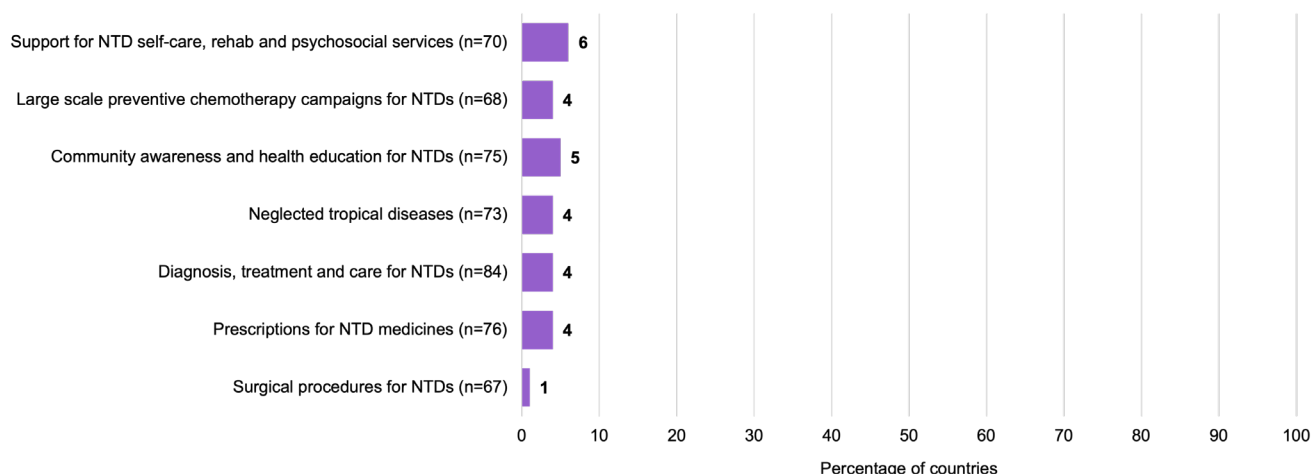


Fig. A25. Percentage of countries reporting increases in neglected tropical disease service volumes (as compared to pre-pandemic levels) in Q4 2022



Disruptions in services for noncommunicable diseases

Fig. A26. Percentage of countries reporting disruptions to services for noncommunicable diseases (NCDs) in Q4 2022

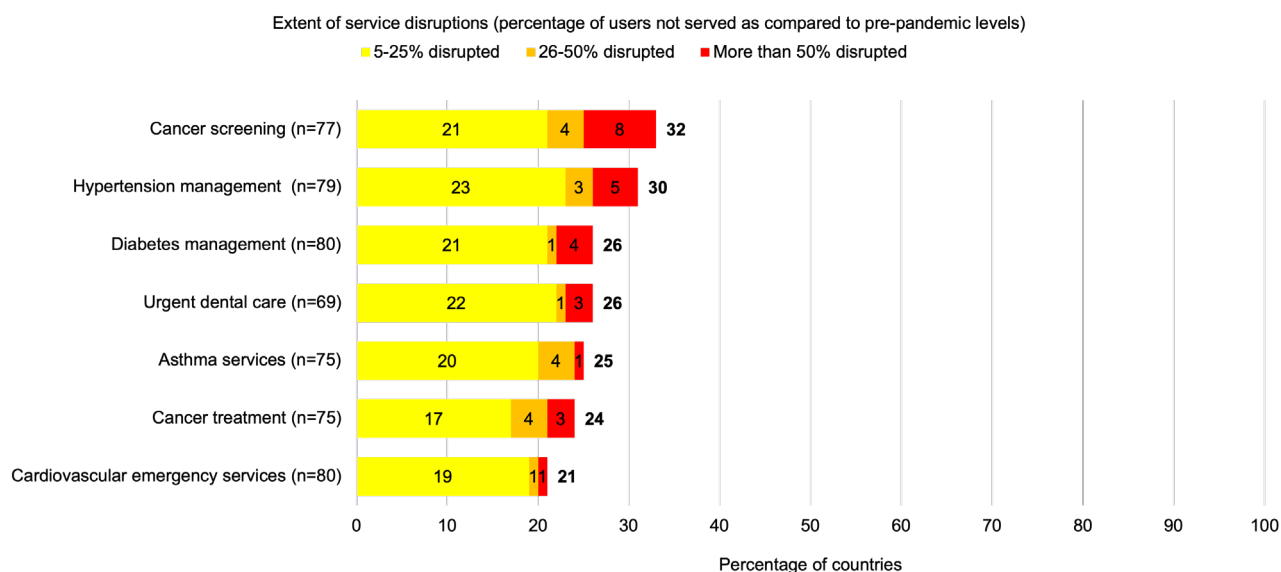


Fig. A27. Comparison of disruptions in services for noncommunicable diseases (NCDs) in countries that responded to three survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), and Q4 2022 (Round 4)

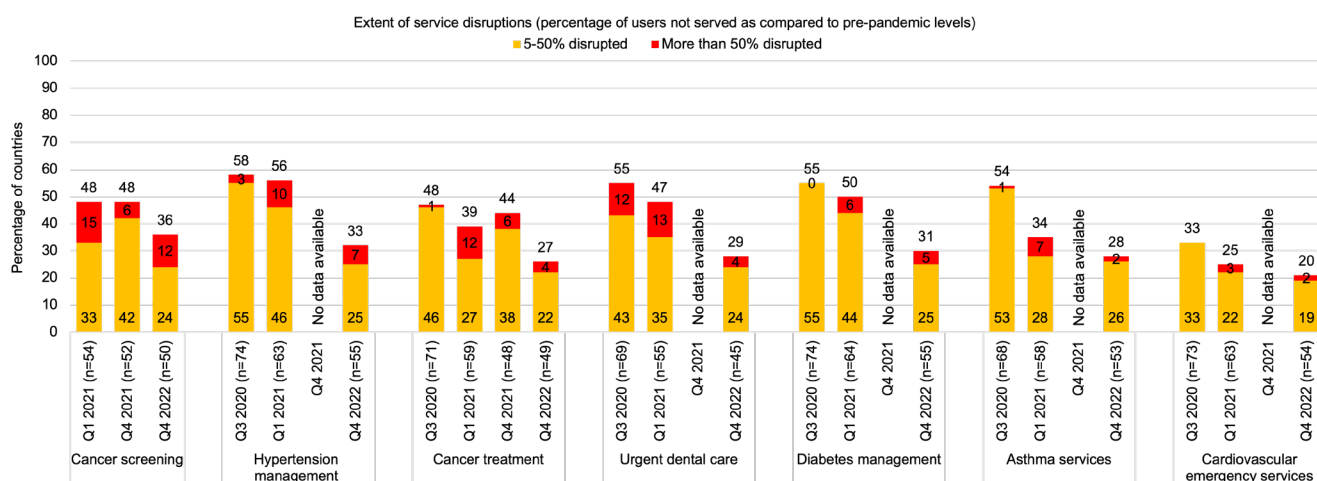
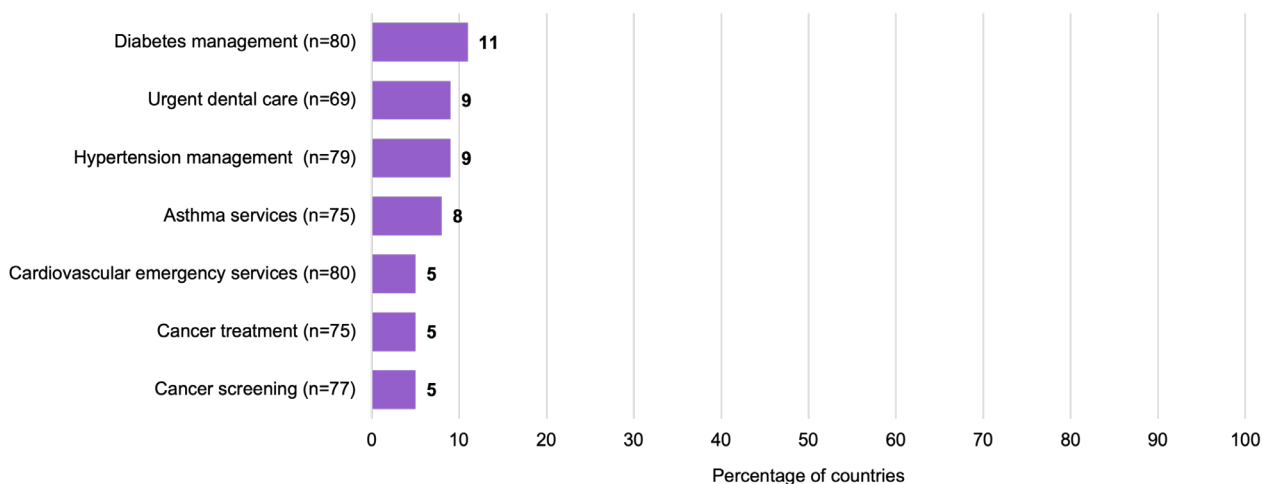


Fig. A28. Percentage of countries reporting increases in noncommunicable disease service volumes (as compared to pre-pandemic levels) in Q4 2022



Disruptions in services for care for older people

Fig. A29. Percentage of countries reporting disruptions in services for care for older people in Q4 2022

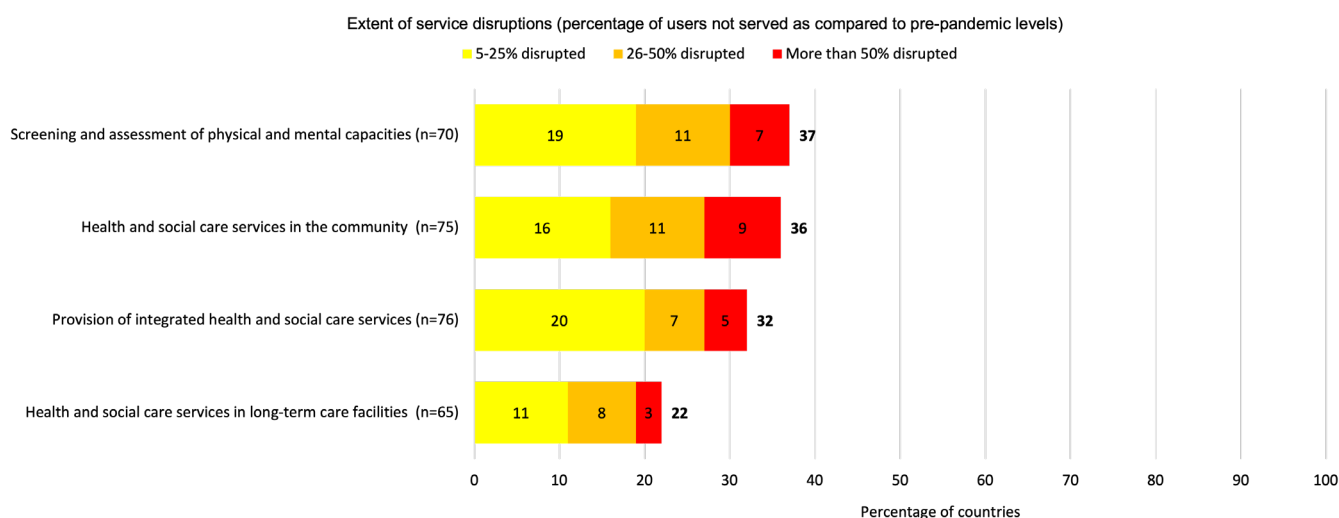


Fig. A30. Comparison of disruptions in services to care for older people in countries that responded to all four survey rounds: Q3 2020 (Round 1), Q1 2021 (Round 2), Q4 2021 (Round 3) and Q4 2022 (Round 4)

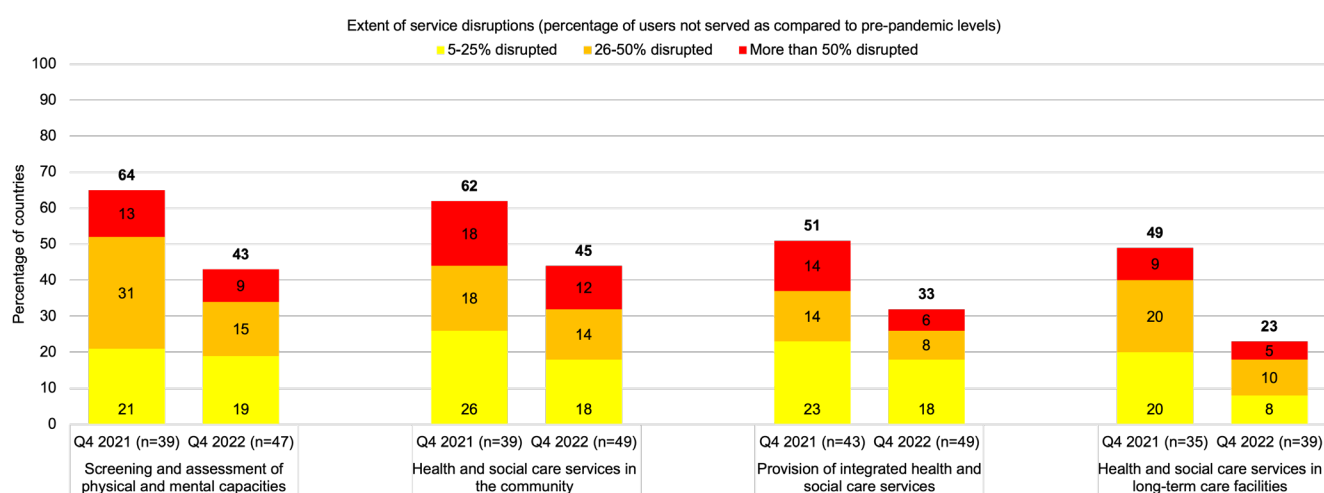
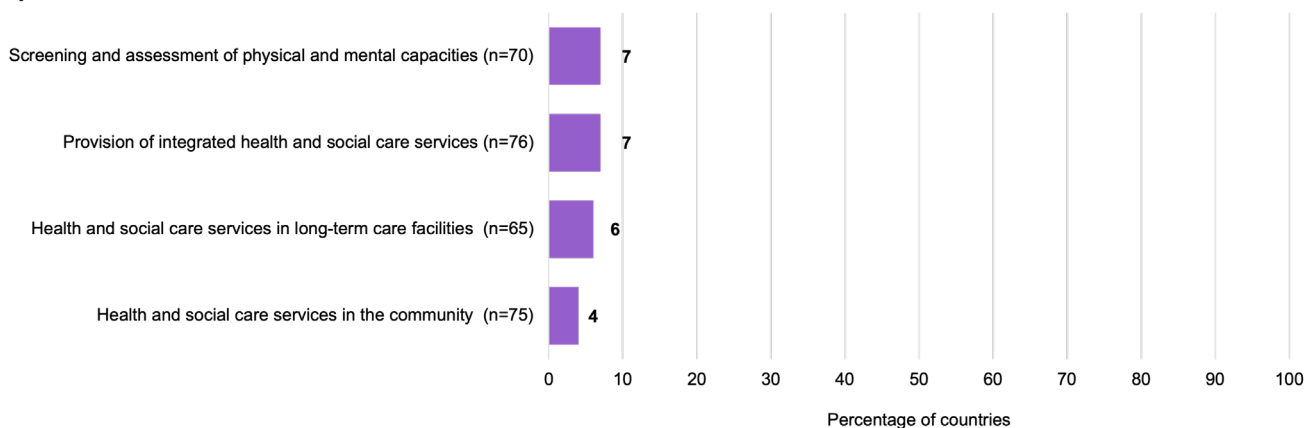


Fig. A31. Percentage of countries reporting increases in for care for older people service volumes (as compared to pre-pandemic levels) in Q4 2022



Disruptions in traditional and/or complementary health services

Fig. A32. Percentage of countries reporting disruptions in traditional and/or complementary health services in Q4 2022

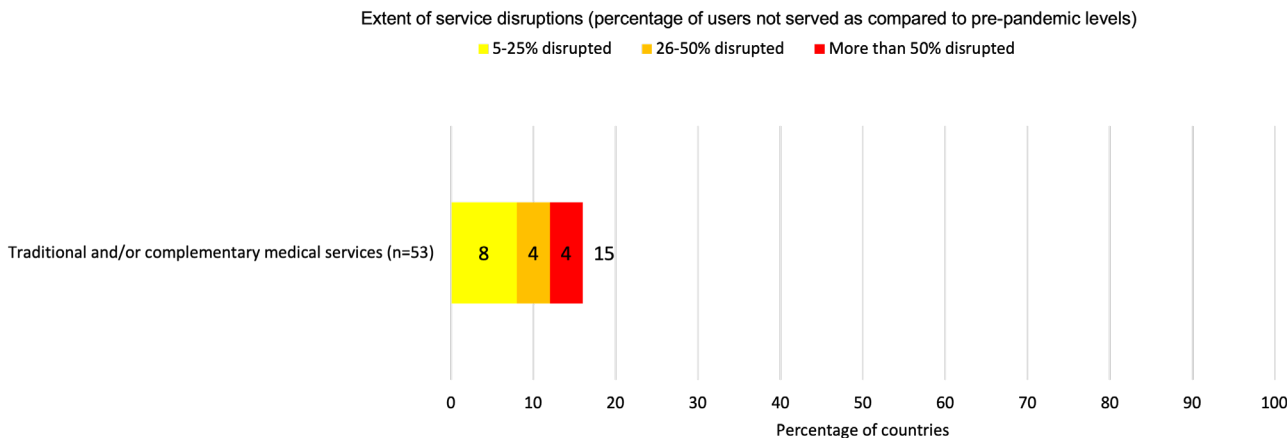
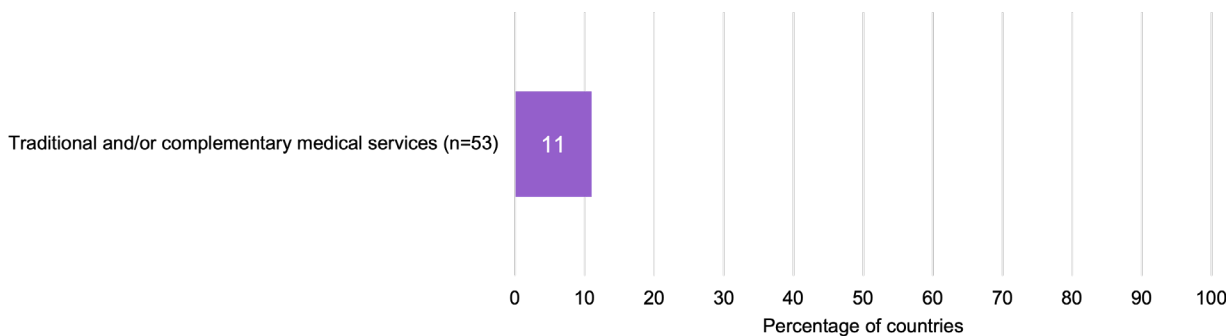


Fig. A33. Percentage of countries reporting increases in traditional and/or complementary health services volumes (as compared to pre-pandemic levels) in Q4 2022



Annex 2: Round 4 WHO pulse survey on continuity of essential health services during the COVID-19 pandemic questionnaire

Links to the complete Round 4 Pulse survey on continuity of essential health services during the COVID-19 pandemic survey questionnaire are available on WHO's website ([Arabic](#), [Chinese](#), [English](#), [French](#), [Portuguese](#), [Spanish](#) and [Russian](#)).

For ease of reference, a summary of survey sections and suggested key informants is included below.

Table A1. Outline of round 4 pulse survey sections and suggested key informants

Outline of survey modules		Suggested key informant(s)
Continuity of essential health services module		
1	• Policies, planning and investments • Disruptions across service delivery platforms • Mitigation strategies and recovery measures • Information tracking • Health system bottlenecks and priority needs in COVID-19 context and beyond	Health system, service delivery or essential health services incident management support team focal point(s)
In-depth modules on disruptions to tracer service areas		
2	Sexual, reproductive, maternal, newborn, child and adolescent health	Sexual, reproductive, maternal, newborn, child and adolescent health focal point(s)
3	Nutrition	Nutrition focal point(s)
4	Immunization	Immunization focal point(s)
5	HIV and hepatitis	HIV and hepatitis focal point(s)
6	Tuberculosis	Tuberculosis focal point(s)
7	Malaria	Malaria focal point(s)
8	Neglected tropical diseases	Neglected tropical diseases focal point(s)
9	Noncommunicable diseases	Noncommunicable diseases focal point(s)
10	Mental, neurological and substance use disorders	Mental health, neurology and substance abuse focal point(s)
11	Care for older people	Care for older people focal point(s)
12	Future acute respiratory pandemic preparedness	Acute respiratory disease preparedness/control programme focal point(s)

Annex 3: List of 79 tracer services assessed in the fourth round of the global pulse survey on continuity of essential health services during the COVID-19 pandemic

Services marked with * are among the services that were included in all four pulse survey rounds and on which comparisons of trends in overall service disruptions between 2020 and 2022 could be analysed.

Service delivery settings and platforms

Primary care

- Routine scheduled primary care visits
- Unscheduled primary care visits
- Prescription renewals

Emergency, critical, and operative care

- 24-hr emergency care*
- Ambulance services
- Emergency surgeries*
- Elective surgeries

Rehabilitative and palliative care

- Rehabilitative services*
- Palliative services*

Community care

- Outreach services
- Health post and home visits by community health workers

Other

- Appointments with specialists
- Hospital inpatient services
- Health post and home visits by community health workers

Condition- and programme specific tracer health service areas

Sexual, reproductive, maternal, newborn, child and adolescent health

- Family planning and contraception*
- Safe abortion
- Post-abortion care services
- Fertility care/infertility services
- Identification and care for intimate partner violence
- Response to sexual violence (post-rape care)
- Antenatal care*
- Facility-based births*
- Postnatal care for women and newborns
- Neonatal intensive care unit (NICU) services
- Sick child services*
- Well-child visits, including growth and developmental monitoring and counselling
- Adolescent and youth friendly services

Nutrition

- Counselling on infant and young-child feeding (IYCF)
- Screening for and/or management of moderate and severe wasting*
- Distribution of high-dose vitamin A supplementation
- Growth monitoring and promotion

Immunization

- Routine facility-based immunization services*
- Routine outreach immunization services*

Human immunodeficiency virus and hepatitis

- Human immunodeficiency virus (HIV) prevention services (e.g. pre-exposure prophylaxis, provision of condoms and lubricants, voluntary medical male circumcision, harm reduction services)
- Human immunodeficiency virus (HIV) testing services
- Continuation of established antiretroviral (ARV) treatment*
- Initiation of new antiretroviral (ARV) treatment
- Hepatitis B diagnosis and treatment
- Hepatitis C diagnosis and cure
- STI treatment services based on syndromic or etiologic management
- Testing of pregnant women attending antenatal care for syphilis

Tuberculosis

- Tuberculosis (TB) diagnosis and treatment*

Malaria

- Malaria diagnosis and treatment*
- Malaria tests performed by health workers
- Malaria prevention campaigns: Insecticide-treated-mosquito nets (ITN)*
- Malaria prevention campaigns: Indoor residual spraying (IRS)*
- Malaria prevention campaigns: Seasonal malaria chemoprevention (SMC)*
- Malaria surveillance

Neglected tropical diseases (NTDs)

- Diagnosis, treatment and care for NTDs (facility-based)
- Large scale preventive chemotherapy campaigns for NTDs (e.g. mass drug administrations, and/or school-based treatments)
- Community awareness and health education campaigns for NTDs (e.g. WASH promotion, disease prevention, vector control, eradication)
- Support for self-care, rehabilitation and psychosocial services for patients with chronic NTDs
- Prescriptions for NTD medicines
- Surgical procedures for NTDs

Noncommunicable diseases

- Hypertension Management
- Cardiovascular emergencies (including MI, Stroke and cardiac Arrhythmias)
- Cancer screening
- Cancer Treatment*
- Diabetes and Diabetic Complications Management
- Asthma services
- Urgent dental care

Mental, neurological, and substance use disorders (MNS)

- Management of emergency MNS manifestations (including suicide attempt, status epilepticus, delirium, drug overdose, severe/complicated substance withdrawal syndromes)*
- Psychotherapy/counselling/psychosocial interventions for MNS disorders*
- Availability of psychotropic medicines for management of MNS disorders*
- Opioid agonist maintenance treatment (methadone, buprenorphine) for opioid dependence
- Services for children and adolescents with mental health conditions or disabilities, including developmental disabilities*
- Services for older adults with mental health conditions or disabilities, including dementia*
- Neuroimaging and neurophysiology*
- School mental health programme*
- Inclusive schooling for children with special needs
- Suicide prevention programme*
- Programmes on prevention of psychoactive drug use and management of drug use disorders
- Programmes on prevention of harmful use of alcohol and management of alcohol use disorders
- Critical harm reduction services (e.g., needle exchange programs, outreach services)*
- Drug overdose prevention and management programmes*

Care for older people

- Health and social care services in long-term care facilities (e.g. nursing homes)
- Health and social care services in the community (e.g. day care centres, community centres, and home visits)
- Screening and assessment of physical and mental capacities for older people (e.g. mobility, cognition, mood, nutrition, vision and hearing)
- Provision of integrated health and social care services for older people (e.g. management of functional decline, noncommunicable diseases management, vaccination)

Traditional and/or complementary health services

- Traditional and/or complementary health services (e.g. acupuncture, ayurvedic medicine, chiropractic care, herbal medicines, homeopathic medicines, naturopathy, osteopathy, traditional Chinese medicine or Unani medicine)

Annex 4: List of countries, territories and areas that participated in the fourth round of the pulse survey on continuity of essential health services during the COVID-19 pandemic

WHO would like to express its gratitude to all authorities and WHO Country Offices that supported participation in the fourth round of this survey. Countries marked with * responded to at least one module in all for rounds and are included in trending analysis.

AFRICAN REGION

Algeria	Ethiopia*	Namibia*
Angola*	Gabon*	Niger*
Benin*	Gambia*	Nigeria
Botswana*	Ghana*	Rwanda*
Burkina Faso	Guinea*	Sao Tome and Principe*
Burundi*	Guinea-Bissau*	Senegal*
Cabo Verde*	Kenya*	Sierra Leone
Cameroon*	Lesotho*	South Africa*
Central African Republic	Liberia*	South Sudan*
Chad*	Madagascar*	Togo*
Comoros*	Malawi*	Uganda*
Congo	Mali	United Republic of Tanzania
Côte d'Ivoire*	Mauritania*	Zambia*
Democratic Republic of the Congo*	Mauritius*	Zimbabwe
Eswatini*	Mozambique*	

REGION OF THE AMERICAS

Argentina*	El Salvador
Bahamas*	Guatemala*
Belize*	Haiti*
Bermuda (United Kingdom of Great Britain and Northern Ireland)	Honduras*
Bolivia (Plurinational State of)*	Montserrat (United Kingdom of Great Britain and Northern Ireland)
Brazil*	Panama*
Chile*	Paraguay
Colombia	Peru *
Costa Rica*	Saint Vincent and the Grenadines*
Cuba*	Suriname*
Dominica*	Trinidad and Tobago
Dominican Republic	Uruguay*
Ecuador*	

EASTERN MEDITERRANEAN REGION

Afghanistan	Kuwait*	Sudan*
Bahrain*	Lebanon*	Syrian Arab Republic*
Egypt*	Morocco*	United Arab Emirates
Iran (Islamic Republic of)*	Oman*	Yemen*
Iraq*	Saudi Arabia	
Jordan*	Somalia*	

EUROPEAN REGION

Austria	Ireland	Portugal
Bulgaria	Israel	Republic of Moldova
Croatia*	Italy	Romania
Denmark	Kazakhstan*	Slovakia
Estonia	Kyrgyzstan	Slovenia
Finland*	Lithuania	Sweden*
France*	Luxembourg	Türkiye
Germany	Netherlands (Kingdom of the)	
Greece	North Macedonia	

SOUTH-EAST ASIAN REGION

Bangladesh*	Indonesia*	Sri Lanka*
Bhutan*	Maldives*	Thailand*
Democratic People's Republic of Korea	Nepal*	Timor-Leste*

WESTERN PACIFIC REGION

American Samoa (United States of America)	Mongolia
Australia*	New Caledonia (France)
Brunei Darussalam*	New Zealand
Cambodia	Philippines
French Polynesia (France)	Pitcairn (United Kingdom of Great Britain and Northern Ireland)
Guam (United States of America)	Republic of Korea
Japan	Singapore
Lao People's Democratic Republic*	Vanuatu*
Malaysia*	Viet Nam
Marshall Islands	Wallis and Futuna Islands (France)

Table A2. Overall and section-specific response rates

Overall		By survey section													
Region	Received survey (#)	Complete survey submission	At least partial survey submission	Section 1. Continuity of EHS	Section 2. SRM/CAH	Section 3. Nutrition	Section 4. Immunization	Section 5. HIV and hepatitis	Section 6. TB	Section 7. Malaria (where relevant)	Section 8. NTDs (where relevant)	Section 9. NCDs	Section 10. MNS	Section 11. Care for older people	Section 12. Future pandemic preparedness
African Region	47	27/47 (57%)	44/47 (94%)	38/47 (81%)	35/47 (74%)	36/47 (77%)	34/47 (72%)	36/47 (77%)	38/47 (81%)	32/43 (74%)	34/47 (72%)	34/47 (72%)	33/47 (70%)	34/47 (72%)	41/47 (87%)
Region of the Americas	54	13/54 (24%)	25/54 (46%)	21/54 (39%)	22/54 (41%)	20/54 (37%)	20/54 (37%)	20/54 (37%)	18/54 (33%)	11/18 (61%)	18/31 (58%)	18/54 (33%)	19/54 (35%)	17/54 (31%)	19/54 (35%)
Eastern Mediterranean Region	22	6/22 (27%)	16/22 (73%)	11/22 (50%)	10/22 (45%)	11/22 (50%)	11/22 (50%)	13/22 (59%)	11/22 (50%)	5/7 (71%)	8/20 (40%)	10/22 (45%)	12/22 (55%)	12/22 (55%)	13/22 (59%)
European Region	53	6/53 (11%)	25/53 (47%)	14/53 (26%)	18/53 (34%)	15/53 (28%)	14/53 (26%)	19/53 (36%)	18/53 (34%)	N/A	13/49 (27%)	16/53 (30%)	17/53 (32%)	15/53 (28%)	14/53 (26%)
South-East Asian Region	11	6/11 (55%)	9/11 (82%)	9/11 (82%)	9/11 (82%)	8/11 (73%)	9/11 (82%)	9/11 (82%)	9/11 (82%)	6/8 (75%)	9/11 (82%)	7/11 (64%)	9/11 (82%)	9/11 (82%)	9/11 (82%)
Western Pacific Region	35	6/35 (17%)	20/35 (57%)	10/35 (29%)	7/35 (20%)	7/35 (20%)	10/35 (29%)	12/35 (34%)	12/35 (34%)	6/9 (67%)	11/26 (42%)	9/35 (26%)	10/35 (29%)	10/35 (29%)	15/35 (43%)
All	222	64/222 (29%)	139/222 (63%)	103/222 (46%)	101/222 (45%)	97/222 (44%)	98/222 (44%)	109/222 (49%)	106/222 (48%)	60/85 (71%)	93/184 (51%)	94/222 (42%)	100/222 (45%)	97/222 (44%)	111/222 (50%)

Notes:

Complete survey submission: submission of all relevant survey sections.
 Partial survey submission: submission of at least one survey section.
 The round 4 survey was sent to 222 countries, territories and areas.
 Response rates are calculated based on relevance of services to the country context.

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