COVID-19 in Indonesia:
Experiences of Children and Families
Health and Hygiene

empatika

All photos included in this brief were taken or shared directly by participating families.

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Summary

In 2020, the COVID-19 impact on families' access to and use of health services in Indonesia was widespread and disruptive. This research brief presents findings on how families and healthcare service providers understood and experienced those impacts on their health, health services and health-seeking behaviour. A number of implications for policymakers and development partners seeking to understand how to provide more effective support and outreach for families, health providers and health facilities are outlined.

The brief is part of a series of four research briefs looking at the multiple impacts of COVID-19 on families and children in a remote longitudinal study held from May 2020 to February 2021. Study participants were families who researchers had previously lived with, or spent extended periods of time, as part of qualitative and immersive studies carried out between 2015 and 2020. These pre-existing relationships provided a basis for open and trusted remote communication using a range of digital communication tools.

FINDINGS

Social media was the primary source of information on COVID-19 and vaccines which led to conflicting messages and spread of misinformation. Many people had a basic understanding of COVID-19 but wanted more detailed and clear information from trusted sources. They found the 3M campaign messages repetitive and simplistic.[1]

With often no firsthand experience of COVID-19, **families struggled to understand the seriousness of the virus and considered children and the sick to be at greatest risk.** In rural areas, COVID-19 hygiene rules and restrictions were considered extreme. Mask use declined after June/July 2020, mostly worn when leaving the village or visiting markets.

People avoided being tested for COVID-19 for fear of being separated from their families during quarantine or being stigmatized if they tested positive. Suspicions about the intentions of health facilities and rumours of corruption fueled people's fears.

Many local health services were significantly disrupted or suspended during the initial lockdown period (late March to June 2020). As facilities and services began to reopen, health providers faced increased workloads. The 3 to 6 months suspension for *posyandu* sessions was the most significant disruption, during which time no regular services for immunization or monitoring of child development were provided. Supplemental feeding programmes for infants and young children; and counselling for mothers had yet to restart in some locations.

Many families only visited the *puskesmas* or hospital when very ill. Families more commonly preferred to treat their own symptoms and seek advice from village health providers and private home clinics to avoid risk of COVID-19 infection, testing and stigma.

Many people had concerns about the necessity of the vaccine, side effects, effectiveness or not being halal. Hesitancy was driven by rumours and misinformation shared on social media.

IMPLICATIONS FOR SHARING INFORMATION ON COVID-19

Mainstream or popularize reliable information sources to strengthen people's understanding of COVID-19. Many local health providers, officials and religious leaders are influential and trusted in their communities but receive insufficient or basic information about COVID-19. Making government websites, scientific sources and other official

1 The 3M campaign is a widespread government health messaging campaign which highlights three 'Ms': menggunakan masker, mencuci tangan, and menjaga jarak (wear a mask, wash your hands, and maintain social distancing).

information sources more accessible, well known and trusted is also important.

Improve socialization and information activities at the village level. These activities present an opportunity to address misinformation shaping people's views and decisions related to COVID-19, including asymptomatic transmission, vaccine safety and reasons to get vaccinated.

Palu. The *posyandu* in this location is now employing and enforcing the "5 table" system in a stricter manner. A midwife shared that since COVID-19, mothers and children are more orderly in following the system, something that was rather difficult before. The midwife shared that, '*COVID has apparently made people become more compliant to follow the rules*.'

Support health workers with information to build a deeper understanding of COVID-19. Midwives, cadres and nurses are influential and trusted people in their communities, yet they receive insufficient or basic information about COVID-19.

Address misinformation and stigma related to COVID-19 health service provision. Clear information on testing and quarantine procedures would help address rumours and suspicions. Communicate the benefits of the *puskesmas* for community health and empower local health providers as sources of reliable information.

Address vaccine misinformation. Messages should address misinformation on how vaccines work and why they are important. Messages can be delivered through social media, TV and informal channels such as midwives and cadres.

Use personal stories to describe the impact of COVID-19. Using personal stories may help communication campaigns reach people in a way that sharing information alone cannot.

IMPLICATIONS FOR COMMUNITY HEALTH SERVICES

Build on the importance of personal relationships between families and local health care providers. This may involve expansion of home visits, or mobile-based check-ins (including via WhatsApp) for pregnant women and parents of children under two years old, including guidance and standards for online consultations, counselling and health monitoring.

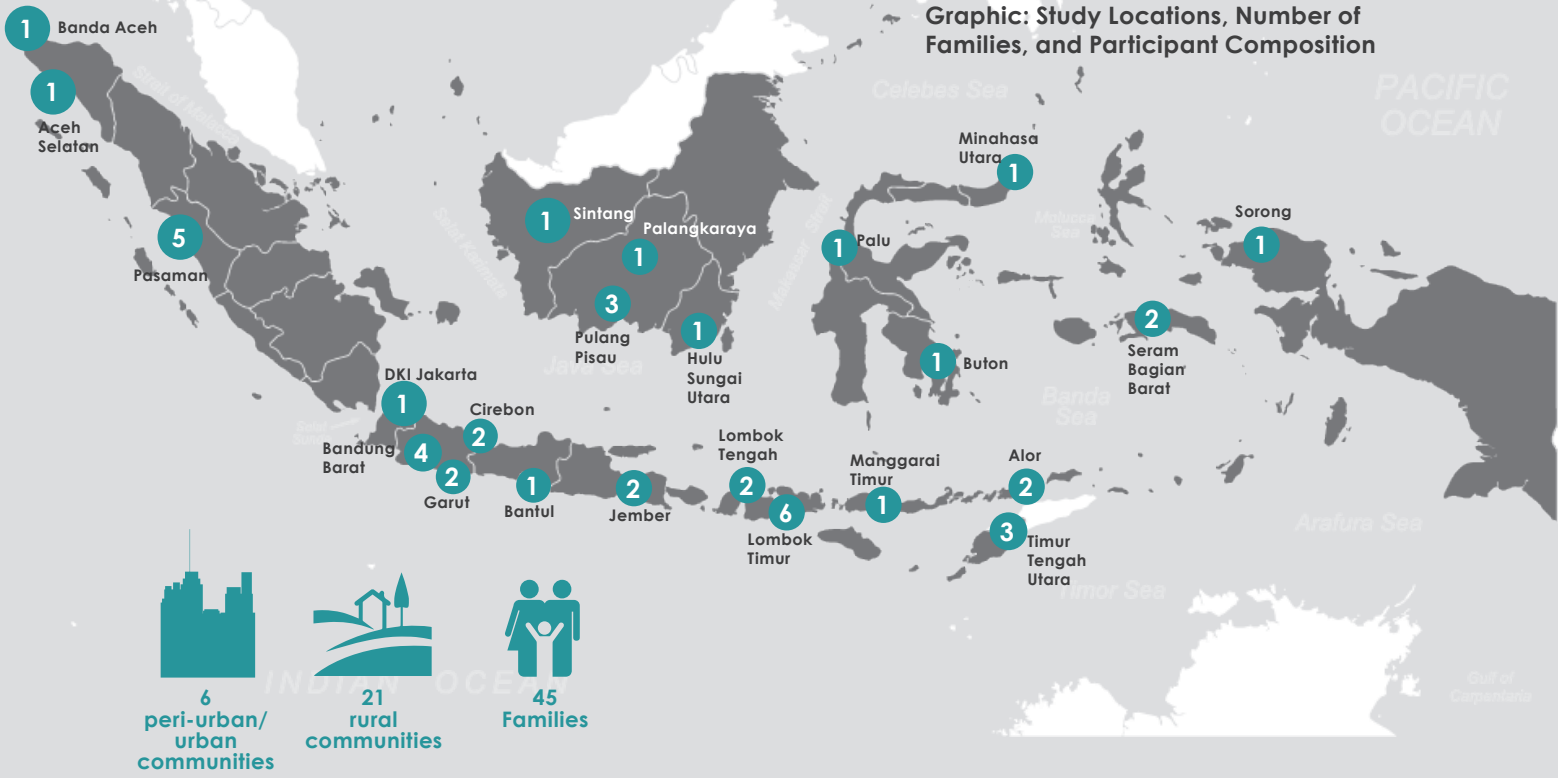
More support for pregnant women is needed to address gaps in health care caused by the pandemic. Health services for pregnant women should emphasize the roles of midwives or cadres. Assess the need for local outreach campaigns to increase *posyandu* attendance by women.

Better integrate village-level health providers and health facilities to improve health services. COVID-19 disruption has highlighted the important role of village-level care providers, as many families continue to avoid formal health care facilities and services. A health care system that better complements the work of village-level care providers is needed.

More support for midwives is needed. The pandemic has increased their workloads in managing village health care. Support can include capacity building activities, more involvement of cadres or health professionals, and learning networks among health providers.

Contextualize the local health response. This may include providing more decision-making power at the district level to consider trade-offs for local service closures and modified approaches to health service provision.

Introduction



Graphic: Study Locations, Number of Families, and Participant Composition

6 peri-urban/ urban communities

21 rural communities

45 Families

17 families have children under 2 years old or pregnant women

25 Health workers

This research brief examines how families and health care service providers in Indonesia experienced and understood COVID-19 and its impacts on their health, health services and health-seeking behaviour. The brief is part of a series of four research briefs looking at the multiple impacts of COVID-19 on families and children in a qualitative longitudinal study held from May 2020 to February 2021.[2] Key findings and recommendations are drawn from phone conversations, messaging, online group discussions and other digital interactions with families and other community members from December 2020–January 2021. Analysis of the findings aim to provide practical recommendations for improved health communication and service provision.

2 UNICEF and Empatika, 'COVID-19 in Indonesia: Children and Families' Experiences - Education, Learning and Social Lives of Children', Jakarta, 2020; UNICEF and Empatika, 'COVID-19 in Indonesia: Children and Families' Experiences - Livelihoods and Social Assistance', Jakarta, 2021; UNICEF and Empatika, 'COVID-19 in Indonesia: Children and Families' Experiences - Health and Hygiene', Jakarta, 2021.

How did we have conversations?

The research was carried out by Empatika, an Indonesian-based organization who specialize in people-centred immersion studies. Study participants were 45 families across Indonesia with whom Empatika researchers previously lived with, or spent extended periods of time, during earlier research studies. Researchers also talked with neighbours, health providers and some village officials. These relationships provided a strong basis for open and trusted online communication. Insights were gathered through remote conversations and interactions with family members and others using mobile phones and messaging applications, photo and video sharing, and group discussions.[3] Conversation guides were developed around each theme to ensure consistency in interactions with families. For this brief, these interactions explored the changes in families' health and health services.

Parents, neighbours, village officials and 25 health workers (*posyandu* cadres, midwives, nurses and other health facility staff)[4] participated in the study, living in 21 rural and 6 peri-urban/urban communities.[5] Seventeen families included children aged under 24 months or pregnant women. At the time of this brief, 21 of the 23 districts were classified as orange or red COVID-19 zones.[6] Calls and interactions were made between December 2020 to early January 2021, following a listening phase conducted from late May to August 2020.

Sintang. Supplemental feeding programmes during *posyandu* had restarted in some locations like this one, but in other areas *posyandu* were still limited to the basic activities like weighing and immunizations.

3 Tools also included 'complete the story' prompts, audio/video prompts, video sharing, and photo elicitation. Researchers used different combinations of these tools opportunistically with families and other study participants.
4 Cadres are volunteer community health workers at *posyandu* (monthly clinic for children and pregnant women). *Puskemas* is a community primary health center; *pustu* is a village level health post; *polindes* is a village maternity clinic.
5 Overall, study participants included 45 families across 23 districts and 18 provinces in Indonesia.
6 Indonesian Government's COVID-19 zones are determined from a combination of epidemiological, community health surveillance, and health service provisions indicators. For more details see: https://covid19.go.id/peta-risiko

Findings

All families reported overall good health. A few families shared that they had experienced fever, cough, headache and other flu symptoms in this period, but most did not go to see a health provider. They felt better after a few days using either over the counter medication (often with consultation with a relative or midwife), rest or traditional herbs. Only one family in Timor Tengah Utara took their daughter to the *puskesmas* after three days of coughing and diarrhoea.[7] In Pasaman, parents used coconut water blended with eggs to treat measles for their eldest child. They also asked the local midwife to collect medicine from the market.

With the exception of one daughter from Cirebon who works in Jakarta and tested positive, none of the families felt they had COVID-19. Some people did acknowledge that there could be positive cases they don't know about, as people are starting to travel more (Pasaman). No one considered being tested. One mother in Jakarta associated her illness with 'fever season' because "when the rain comes it makes our body weak."

People held diverse and often contradictory views on COVID-19. In many rural areas, people felt that "COVID is over" and were less worried than earlier in the pandemic because there were very few or no cases in their village, although there was conflicting information on the number of cases. Many people had stopped wearing masks and had resumed religious services and weddings in some areas.

People who felt that COVID-19 was common where they lived, or that case numbers were rising, were more worried but despite this they did not consistently follow hygiene practices as strictly as in April and May 2020. Despite the more relaxed attitude to COVID-19, there was a growing number of positive cases in the villages of some families in Pulang Pisau, Bandung Barat, Hulu Sungai Utara, Lombok Timur, Jember and Jakarta Timur.

7 Throughout this brief, locations of study ffamilies are referred to using the district name.

VIEWS AND EXPERIENCES OF COVID-19

COVID-19 INFORMATION SOURCES AND MESSAGES

Most people had a basic understanding of COVID-19. Some wanted more information. They understood that COVID-19 was easily transmissible and could be deadly but can be prevented with various hygiene measures. This information was repeatedly shared by village officials, midwives and cadres, as well as teachers. Many people mentioned the 3M campaign which focuses on handwashing, mask wearing and social distancing (Jakarta Timur, Alor). Some complained that they only received the 3M messages, which they felt were too simplistic, and there had been little opportunity for questions (Cirebon, Hulu Sungai Utara, Alor, Lombok Timur).

"As far as I know, every time the midwife or puskesmas officers talk about COVID, it is limited to 3M. What they talked about last month (during posyandu) will be repeated the next month. Nothing new."

- Village official and mother, Alor

Local health providers wanted more in-depth information about COVID-19 and guidelines for their work. Many midwives and cadres said they received information on COVID-19 from official sources, including WhatsApp groups for providers,

Jakarta Timur. A father in said that COVID-19 posters and banners are everywhere, with similar content about the 3M campaign.

webinars or sensitization sessions (Garut) or from other health providers (Lombok Timur). Some felt that the information was too simplistic and repetitive, focusing on the importance of the 3Ms. They wanted more in-depth information about the COVID-19 virus, treatment, symptoms and situation updates (Lombok Timur). In Pulang Pisau, cadres did not know what to do if someone in the village had COVID-19 symptoms. Although midwives were expected to make home visits for maternal and infant care as the number of *posyandu* sessions were reduced, some midwives did not receive guidelines (Palu).

Social media was the primary source of COVID-19 information. Facebook and WhatsApp were the primary sources of information in areas with strong Internet connectivity (Bandung Barat, Buton, Lombok Timur). Parents who did not regularly use social media often relied on their adolescent children for information from Instagram, TikTok and other platforms, while others who did not own smartphones relied on information shared by family and neighbours. Some people said they used the Internet actively to seek out information on COVID-19 but most relied on social media channels. Families with poor Internet signal or who did not use smartphones relied on TV for information (Timur Tengah Utara, Sintang). Those in rural areas felt that the news was not relevant to them as it focused more on cities (Aceh Selatan).

Many people found COVID-19 information from social media and the Internet to be confusing, and, at times, contradictory with information shared on TV, through health providers and from sensitization campaigns. Some people said that rumours posted on Facebook or shared by family and friends on WhatsApp claimed that COVID-19 was a hoax or a conspiracy to "scare people" or to generate money for the government (Jakarta Timur, Lombok Timur). One midwife explained that it is hard to make people take COVID-19 more seriously in socialization sessions, when they hear these messages on social media (Hulu Sungai Utara).

Although more people believed that COVID-19 was real rather than a hoax, they struggled to assess its seriousness, as "it is hard to know what was true" (Cirebon). Similarly, while people did not question COVID-19 mortality figures, some people wondered if all the deaths were caused by COVID-19.

> "I saw on TV thousands of people died because of COVID, but where are the other illnesses that cause death?"
>
> **– Father, Pasaman**

As most families rarely knew anyone who had been seriously affected by COVID-19, they often

Our families shared these pictures to illustrate a sense of normalcy where less people are wearing masks in public places such as the market (top, Banda Aceh), when they hang out with their friends (right, Lombok Timur) or when they attend church (left, Timor Tengah Utara).

felt that COVID-19 messaging was exaggerated. People shared information from social media that reinforced these views, including the idea that COVID-19 only affects people who are unhealthy. For some, this meant that healthy people, including the elderly, do not need to worry (Sorong, Pasaman, Timur Tengah Utara), that hot weather and hot water can kill COVID-19 (Timur Tengah Utara), or that it can be cured using black magic (Lombok Timur). Apart from health providers, people who considered COVID-19 to be serious tended to be those who knew of others seriously affected, or heard of people affected from a person they trusted (Jember, Jakarta Timur).

UNDERSTANDING THE RISKS OF CATCHING COVID-19

People worried about those in regular physical contact with many people. People considered those at risk included people who worked in shops or warungs (Jakarta Timur, Palu, Lombok Timur), employed in transportation (Jakarta Timur, Alor), as well as health workers who make home visits and other health care providers (Pasaman, Lombok Timur). Crowded locations such as markets or public transport were also considered to be risky. Out of 12 families who were asked what is their "biggest worry right now", six families were most worried about themself or a family member being exposed to COVID-19. Four families named other health concerns including giving birth (Alor), accessing affordable medicine for a chronic health condition (Palu), and a son's heart condition especially as they were avoiding the hospital (Pasaman).

Children and the sick were considered at most risk of serious illness due to COVID-19. A few people identified those most at risk to be babies and young children (Pulang Pisau, Timor Tengah Utara, Bandung Barat), as well as newborn babies and mothers who have recently given birth (Banda Aceh). Only a few families (Lombok Timur) and a cadre (Seram Bagian Barat) mentioned that older people faced higher risks, or that older people might require more protection.

Health providers were aware that their work put them at higher risk of contracting COVID-19. A midwife in Hulu Sungai Utara was the only health provider contacted who had contracted COVID-19. She attributed this to working in the *puskesmas* early in the pandemic when the facility was crowded. Here, she and 18 other health workers contracted COVID-19 during this period. Many other midwives and nurses were anxious that they could spread COVID-19 to their families (Garut, Manggarai Timur, Lombok Timur). To minimize this risk, some midwives opted to provide advice over the phone or WhatsApp and only see patients in person if absolutely necessary (Lombok Timur, Hulu Sungai Utara). Others complained that they did not have enough masks and gloves and had to purchase these themselves (Lombok Timur). Almost all midwives said they were more concerned now about COVID-19 spreading as many people had relaxed restrictions on gatherings and stopped wearing masks.

Many people were afraid of quarantine and being separated from their families. These concerns were based on rumours shared by word of mouth or social media on the experiences of people who were 'forced' to quarantine outside the village, often in the closest city (Hulu Sungai Utara, Bandung Barat, Pasaman, Pulang Pisau). Some people felt that people without COVID-19 were being sent to quarantine, either due to false positive tests, corruption or false gossip. A number of people cited examples when people who were supposedly taken away did not return or had passed away, and worried that something similar could happen to them. Although people could not provide examples where individuals had received poor quality of care in quarantine, the lack of information about quarantine procedures outside of the village fueled this speculation.

> "If I die, I die - but let me die close to my family."
>
> **- Father, Pasaman**

People also expressed fear of village quarantine, noting the stigma associated with COVID-19, and that other villagers would not want to be around them (Garut, Lombok Timur). Other families highlighted concerns about the economic impact, as they knew they would not be allowed to work during quarantine (Lombok Timur). However, quarantine procedures were not followed consistently or ignored entirely by visitors to the village or people with symptoms.

Jakarta Timur. A father here shared these photos to illustrate the difference between two neighbourhoods. The top picture is a neighbouring area with washing stations spread around the area, coordinated by the neighbourhood head and some families. Dedicated volunteers were appointed to fill in and clean the washing stations regularly, and the father noted that some people including children used them regularly. The bottom picture, in the family's area, has no washing stations at all, because *'there is no initiative from the neighbourhood head and families here.'*

Many people used the COVID-19 risk status indicators (red, orange, yellow, green) to discuss the infection risk in their area but, in general, they assumed that city areas were 'red' or considered them more dangerous and assumed their own villages to be 'green'. However, actual data frequently conflicted with these assumptions and people generally relied on word of mouth to assess local risk without checking the official status (see Annex for COVID-19 risk zones).

AVOIDING COVID-19 TESTING

Worries about stigma associated with COVID-19 outweighed fears of contracting the virus, causing people to avoid testing. Many families shared concerns that if they went to the *puskesmas* or to be tested, people might think they were positive for COVID-19 or had brought it into the village. They feared the gossip and social stigma that would follow. Consequently, families worried about being asked to get a COVID-19 test at health facilities and avoided testing as much as possible (Bandung Barat, Lombok Timur, Hulu Sungai Utara, Jakarta Timur, Palu). Some even said that if they went to a health facility and found that any COVID-19 testing was being done or freely offered they would turn around and go back home.

Families did not consider testing helpful as most said they felt healthy and wanted to avoid any potential disruption to their lives. Even with a positive COVID-19 test result, some families felt they could treat their own symptoms. People's lingering doubts about whether COVID-19 is real and serious also shaped these views, as did the stigma associated with receiving a positive result (Jember, Pasaman, Palu, Jakarta Timur). In Garut, a midwife shared that some mothers who had migrated to Jakarta or Bandung returned to the village to give birth because there were no strict local requirements about testing or quarantine, compared to the city. She was concerned that this practice was contributing to the increased number of positive cases in the area.

Some people ignored reactive rapid antibody test results out of fear of testing positive and uncertainty about what might happen next. Although many people did take rapid antibody tests when they were required to, some people with reactive test results resisted taking the required follow-up PCR swab tests due to misinformation and fear of stigma (Pulang Pisau, Jember, Lombok Timur). Families shared examples of people who had ignored their reactive test results, and continued to travel by using someone else's test results, including to attend village functions. People who took COVID-19 more seriously said they felt nervous for their own safety when others rejected the PCR swab tests or ignored reactive test results. All family members who had taken COVID-19 tests did so because they were required to, rather than because they were worried they might be infected.

> "My mother told me that people tend to not get a COVID-19 test because they are afraid of knowing if the result is reactive or positive. Through not getting tested, people avoid any potential stigma."
>
> **– Researcher notes, Bandung Barat**

Stigma and fears about COVID-19 or testing positive were fueled by a lack of understanding of the virus and suspicions about the intentions of health facilities. People in five locations mentioned rumours of COVID-19 testing corruption (Jakarta Timur, Palu, Garut, Hulu Sungai Utara, Lombok Timur), shared via social media. These rumours were primarily directed at health care providers at *puskesmas* or hospitals, who fabricate positive test results so they can receive additional funding when treating COVID-19 patients (Jakarta Timur, Pasaman, Palu). Some people now avoid health care providers out of concern that they will be infectious (Garut, Jember). A nurse in Manggarai Timur said there had been stigma directed towards him by his neighbours when he began helping with the first positive case in the area. However, this stigma has now subsided as people have a better understanding of COVID-19 and there have been more cases in the area.

"It is better to not know [if you are positive] and to make sure you don't have symptoms."

- Families in Pasaman and Garut

REFUSING TO GET TESTED

Some election workers in Pulang Pisau declined to get a swab test after testing reactive on a rapid test in early December 2020, with one mother explaining that she *"doesn't believe COVID exists."* Another mother was worried about this situation and thought it put her at risk. One of the people who tested reactive was the primary school teacher and, as a result, the headmaster closed the school. Her family, who lives near the teacher, advised her to avoid interacting with the teacher's family to protect them from COVID-19.

My family in Buton was planning a wedding in the village with the bride needing to travel back to the village from the city. She took a rapid test and received a reactive result. Rather than quarantine or get a follow-up test she asked a friend to take her ID and test for her so that she can get a non-reactive result to allow her to travel. She said that she didn't want to waste the ticket. My father said she should just come as there were many preparations needed for the wedding. There is an 'isolation house' prepared for people who come back to the village from the city but the bride was too busy with wedding preparations.

IMPACT OF COVID-19 ON BASIC HEALTH SERVICES

Families said that many basic health services had been significantly disrupted early in the pandemic. This included closures of *pustu* and *polindes* during initial lockdown, shorter opening hours for some *puskesmas* and the pause of *posyandu* sessions. Once travel restrictions were relaxed in July 2020, people said that *puskesmas*, *pustu* and *polindes* were soon operating similar to pre-pandemic levels, although some had shorter opening hours. In one location, however, the *pustu* had been closed since March 2020, while in Jember the private clinic had closed as one staff member had contracted COVID-19. One family said they now had more trouble obtaining prescription medicine (Palu), although others felt medical supplies had not changed. In many areas, families said they were able to obtain basic health support and advice when needed.

As village health facilities reopened and services resumed, there were changes to local health service provisions. Many health care workers had increased workloads and additional responsibilities. *Puskesmas* staff were tasked with COVID-19 programmes, protocols, testing and administration. Families preferred to visit the *pustu* and *polindes* and avoided going to the *puskesmas* which led to increased workloads for midwives and others working at these facilities.

Families noted that they were now required to wear masks while visiting health facilities and to wash their hands before entering the premises. Health workers said that they tried to enforce these protocols but often found this difficult – some had to ask patients not wearing masks to go home to get their masks, others tried to provide masks, while in some cases they ended up letting people in without any mask.

Many families rarely visited the *puskesmas* and other health facilities even before the pandemic and did not consider the disruption to health services to be a top priority concern. Families prioritize the health of their children but most continued to use village-level health care providers such as midwives or private home clinics. For many people, this preference for village-level health providers is not new, but they are now more reliant on these services, in particular, the village midwife, who people

often visited or contacted directly via WhatsApp or SMS. A number of people explained that midwives provided advice beyond pregnancy or babies, including how to treat minor ailments.

Many families now prefer to only visit hospitals and *puskesmas* if very ill. One nurse in Garut explained that the number of people coming to the *puskesmas* has dropped and that people only come when they are very ill as "they are afraid that the puskesmas will assume that they have coronavirus." Many families also avoided the *puskesmas* for fear of contracting or being tested for COVID-19 or fear of people thinking they had COVID-19 because they visited the *puskesmas*, and risking gossip in their communities (Jakarta Timur, Palu, Aceh Selatan, Lombok Timur, Pasaman, Pulang Pisau, Hulu Sungai Utara). One family shared that their uncle had recently opted to seek the help of a traditional healer for his broken leg, rather than go to the *puskesmas*, because he wanted to avoid getting a COVID-19 test (Pasaman).

Those with chronic illnesses such as heart conditions chose to stop visiting the *puskesmas* for their regular check-ups until things returned to normal (Pasaman, Jember, Palu). A pregnant woman in Banda Aceh said she wanted to give birth with a traditional birth attendant rather than in the *puskesmas*, but finally opted for the *puskesmas* because the traditional birth attendant was too expensive (IDR 2 million). In some locations, avoiding the *puskesmas* and hospitals led to increased visits at nearby *pustu* and *polindes*.

PUSTU CLOSED DUE TO LACK OF STAFF

In Bandung Barat, the midwife explained that the *pustu* had been closed since March 2020 due to lack of staff. The staff were needed to help at the *puskesmas* one hour's travel from the village as other staff were unavailable or in quarantine. With the *pustu* closed, people sought help from the midwife for minor health issues, or from the two private home clinics in the village although these clinics are considered expensive (IDR 50,000 per visit). More women are giving birth at home with the support of the midwife and a traditional birth attendant, given the risks, uncertainties and distance to the *puskesmas*.

In two places, people felt the health services had improved since the start of the pandemic. Families and cadres cited more frequent visits from *puskesmas* staff to support the *poskesdes* and *posyandu*, and more active engagement with the village officials to understand the kinds of support needed in the village (Sintang, Alor).

Most families' main strategy for dealing with potential health concerns related to COVID-19 was to try to stay healthy. Some, like this mother in Pulang Pisau who has stocked extra medicines and vitamins at home for her baby (right), more frequently self-medicated (some with advice from the local midwife). Other families drank local herbs, like this family in Lombok Timur (left). This is a traditional drink made regularly by this family to help boost their immune system.

People in Sintang explained that the village government had also begun to pay more attention to health, and had allocated money from the village funds to cover the costs for women to deliver their babies in the *puskesmas*, based on the advice of the cadres.

Zinc and iron tablets are also now being provided for adolescent girls, with distribution done through the cadres. In Alor, where previously the *poskesdes* had rarely been in operation, a new full-time midwife was assigned in July 2020. The *puskesmas* is also now giving better support including the supply of medicines, although a woman in Alor said more people now prefer to visit the *poskesdes* for health checks and treatment.

Families now took more active steps to self-treat COVID-19-like symptoms and stay healthy. Some families said they had become more proactive about their health, taking medicine if they felt sick and drinking local herbs or taking vitamins to stay healthy. People shared they now treated symptoms quickly using paracetamol from local kiosks or traditional remedies, rather than wait for the illness to resolve itself or visit a health facility (Alor, Jember, Lombok Timur, Sintang). Many said they were now trying to take better care of their health to avoid having any symptoms, avoid COVID-19 tests or because seeking medical care at the *puskesmas* or hospital would lead others to gossip that they had COVID-19 (Palu, Pasaman, Hulu Sungai Utara, Banda Aceh, Jakarta Timur).

CHANGES IN *POSYANDU* SERVICES AND USE

***Posyandu* services were significantly disrupted in April 2020. Almost all had restarted by September 2020 with new hygiene measures,** although midwives said that they did not turn mothers away who came without wearing masks. A number of *posyandu* required mothers to bring their own sarongs for weighing their babies, though some forgot. Many communities attempted to reduce the number of people at the *posyandu* by spreading appointments over multiple days or having multiple time slots in the same day. However, some mothers ignored this as they wanted to come at the same time as their friends (Palu, Alor).

Most *posyandu* now limited their work to weighing and immunizing babies. When *posyandu* were closed early in the pandemic, some families missed immunizations for their children. Some communities provided other immunization options including home visits by midwives, mothers brought their children to the *pustu, polindes* or *poskesdes*, or to the midwife's home (Pasaman, Lombok Timur). In Garut, the head of the village had organized an immunization day at the village office.

When the *posyandu* did reopen, services in many locations were limited and often mothers could only update children's immunizations and have their weight checked. However, to reduce crowding and limit the risk of infection, mothers were asked to return home immediately after these activities, leaving no opportunities for information sharing, socializing, or counselling (Timor Tengah Utara, Pasaman, Garut). Often information shared with them just focused on COVID-19 (Bandung Barat, Sintang). Some communities also suspended providing supplemental feeding programmes (Jember, Seram Bagian Barat).

In a number of locations, cadres shared that fewer mothers were attending *posyandu* sessions. In at least six locations, pregnant women had been told not to join *posyandu* activities to reduce their risk of contracting COVID-19 (Timor Tengah Utara, Pasaman, Garut, Jember, Alor, Palu). In Pasaman, where attendance was down by about 50 per cent, the midwife attributed this to the 3M messaging, saying, "moms have been told to not come to a crowded place, and moms think this is a crowded place." In some places, mothers were only attending when their babies were due for immunizations rather than every month (Pasaman, Sorong). However, in other communities, health workers said they did not see a decline in attendance, or attendance rose because mothers had few other places to seek health advice (Alor).

Many midwives and cadres visited women at home, especially pregnant women. Health workers tried to make monthly visits in most communities, except in Pasaman, where health workers visited in August 2020 and February 2021 to weigh babies and distribute vitamins. Many pregnant women who were not attending

In most places, *posyandu* activities such as immunisation had returned to normal around August of 2020 after being suspended at the start of the pandemic (Pulang Pisau, top picture). In some *posyandu*, mothers were told to now bring their own sheets for weighing their babies. However, in some locations such as in Timor Tengah Utara (left picture), they were still using one sheet for all babies.

Lombok Timur. This is a pregnancy class, a programme from the *puskesmas* for mothers 7 months pregnant or later. The class is done over two mornings, where *puskesmas* staff discuss and give education materials related to pregnancy, health and nutrition. It is normally held twice a year, usually in June and December. However, due to COVID-19, this year the June class wasn't held until October.

posyandu sessions due to fear of COVID-19 said that midwives actively checked in with them (Alor, Pasaman, Timur Tengah Utara). In Pasaman, pregnant women were told to go directly to the midwife or *puskesmas* for check-ups. One mother said she prefers to go to the midwife directly rather than the *posyandu* or *puskesmas* because she feels it is safer and that many mothers prefer the extra attention. In Alor, the one-on-one approach was considered better, as the midwife could provide more attention and advice than at a crowded *posyandu*. Midwives and cadres felt that pregnant women are getting sufficient care, although they noted that scheduling home visits was often challenging.

The burden of more home visits and individual consultations fell heavily on midwives. Midwives were now typically people's first point of contact for any health issue, even those unrelated to pregnancy and babies (Lombok Timur, Palu, Alor, Garut, and Bandung Barat). A midwife in Palu said the increased workload and responsibilities was "actually too much, and it is risky." She said she might resign if there was a positive COVID-19 case in the community. The midwife in Garut also felt like retiring given the burden of dealing with COVID-19 cases in the subdistrict. While the midwife in Sintang was happy about the increased attention to health issues by the local government, this also meant added responsibilities as she was now asked to join the local budget planning and allocation process. Cadres did not share the same sense of being overworked as midwives, although they were also required to make home visits. In most areas, this additional work was not compensated. However, in Seram Bagian Barat, cadres received IDR 50,000 for every shift (5.5 hours) watching the village checkpoint.

VIEWS ON COVID-19 VACCINATIONS

Most people did not plan to get vaccinated or were unsure about vaccination. This opposition was based on a variety of beliefs, including that vaccines are only useful for children (Alor, Sintang), for people who have already been infected with COVID-19 (Lombok Timur, Alor, Pasaman), or that it would give them a reactive result when taking a rapid test (Lombok Timur). Others felt that because they lived in a rural area they were not likely to be exposed to COVID-19 and others wanted to avoid negative side effects (Timor Tengah Utara, Jember, Lombok Timur). Often these views were supported by suspicion and lingering questions about the veracity of COVID-19 risk.

"The cases are zero, and the majority of people do not understand COVID. Even though I force myself to persuade them, I don't think they will be willing to get the vaccine."

- Village head, Sintang

People relied on social media for vaccine information which was often incomplete or confusing. Some people said it was difficult to find information they could trust on the Internet (Cirebon) and others wanted more information on the vaccine and how it works in the body before they could make a decision. Others also saw news about vaccines on the TV but some said that information on side effects were not often shared on the news.

People were concerned that COVID-19 vaccines were not halal. A number of people drew parallels between this vaccine and the rubella vaccine, which people suspected was not halal. People in Pasaman were particularly worried that it was not halal and stated they would not get it. Others said they would get the vaccine as long as it was certified as halal (Lombok Timur). In Bandung Barat, one mother noted that people in her neighbourhood are already sceptical of vaccines for their children, so this vaccine would be no different.

Jakarta Timur. At the neighborhood level, people shared that mask use is more limited as can be seen here for those hanging out at this family's food *warung*.

Some people were open to getting the vaccine, but did not see it as a priority. People said they would take it when it was available but felt that those living in red zones or cities should get first preference (Buton). Health workers most commonly shared that they planned to get the vaccine "as long as it was safe and halal" (Bandung Barat) and affordable (Cirebon), though some were still undecided (Garut). [8] One cadre in Lombok Timur said that she plans to get it, but only if it is offered in the village rather than the *puskesmas*. A number of health workers feared being among the first to get the vaccine while it is still being trialed, saying they felt like an "experiment" (Lombok Timur).

8 Note the Indonesian Government did not announce plans for the national COVID-19 vaccination programme until January 2021, after this round of the study was conducted.

Implications

A number of key implications for policymakers seeking to understand how to better support health services and disseminate trusted information on COVID-19 can be drawn from these findings.

SHARING INFORMATION ON COVID-19

Mainstream or popularize reliable information sources to strengthen people's understanding of COVID-19. There is no single information source on COVID-19 that people seek out or feel is reliable. Making government websites, scientific sources and other official information sources more accessible, well known and trusted is important. Presented simply and clearly, key messages should address both the 'what' and the 'why' behind COVID-19 recommendations, including the severity of COVID-19, people at most risk and vaccine safety. Endorsement of messages by trusted individuals or the use of official logos/mark would also support authenticity. Many local health providers, officials and religious leaders are influential and trusted in their communities but receive insufficient or basic information and messaging about COVID-19.

Improve socialization and information activities at the village level. Socialization activities represent an opportunity to address misinformation shaping people's views and decisions related to COVID-19. These activities should emphasize collective responsibility and highlight the possibility of asymptomatic transmission. Messages can also address vaccine safety, reasons to get a vaccine, how vaccines work, and be endorsed by trusted individuals.

Support health workers with information. Midwives, cadres and nurses are influential and trusted people in their communities, yet they receive insufficient or basic information and messaging about COVID-19. Use of existing communication channels such as WhatsApp and webinars can help build a deeper understanding of COVID-19 among health workers so that they can inform others. Clear guidelines for COVID-19 modifications to standard practices, such as *posyandu*, should be shared with midwives and cadres, including how to do home visits for pregnant women. Empowering local health providers as local sources of reliable information would also strengthen community-*puskesmas* relations.

Address misinformation and stigma related to COVID-19 health services provision and testing. The strong opposition to testing poses a challenge to COVID-19 surveillance and suggests that current case numbers likely underestimate the real number of cases. Clear information about testing and quarantine procedures would help address rumours and suspicions. Explain why testing is needed, including the possibility of asymptomatic cases, and make a case for collective social responsibility. Communities should also have more clarity on what happens following a reactive test result. District protocols for positive test results should also consider people's reluctance to be separated from their family or being labeled as 'positive' in their own communities.

Address vaccine misinformation. Much of the vaccine hesitancy is based on misinformation on how vaccines work and why they are important. Messages that directly counter misinformation should form the basis of communication campaigns such as through social media and TV, and be distributed through other informal channels to midwives and cadres. People often have specific vaccine concerns, including safety, local distribution and halal certification. Ensuring these concerns are respected and addressed may help encourage those considering the vaccine to step forward and serve as examples. Offering mosques as vaccination centres may address concerns that the vaccine is not halal.

Counseling and socialisation at *posyandu* in Palu (left) and Sintang (right), although these information sessions had not restarted in all locations. Many people don't wear masks, despite being told to by the midwife or cadres. As some people shared to our researchers, "No corona in our village, no need to wear masks."

Use personal stories to describe the impact of COVID-19. Many people who changed their views on COVID-19 did so after someone they knew was infected. Using personal stories related to the impact of COVID-19 may help communication campaigns reach people in a way that sharing information alone cannot.

IMPROVING HEALTH SERVICES

Build on the importance of personal relationships between families and local health providers to provide better health services. This study found families relied more on local health providers who live in the community and provide informal or remote consultations. Building on this approach may involve the expansion of home visits or mobile-based check-ins (including WhatsApp) for pregnant women and parents of children under two years old. Guidance and standards for remote consultations and monitoring will be needed.

More support for pregnant women is needed to address gaps in care caused by the pandemic. Pregnant women may not be receiving as much care or advice during the pandemic. Service provision for pregnant women should emphasize the roles of midwives or cadres, given the importance of personal relationships with local health providers. Assess the need at the local level for renewed outreach campaigns to encourage both pregnant women and women with young children to attend posyandu sessions.

Better integrate village-level health providers and health facilities to improve health services. COVID-19 disruption has highlighted the important role of village-level health providers, as many families continue to avoid formal health care facilities and services. A health care system that better complements the work of, and looks for ways to empower, village-level care providers is needed. Ensuring families can feel more comfortable visiting health facilities is important.

More support for midwives is needed. Midwives have increased workloads in managing village health care. Support for midwives can include how cadres can be supported to carry out some of the activities normally done by midwives, with training, guidance and management. Look for opportunities for cadres to shadow midwives and other health professionals to gain experience and training. Facilitate regular feedback and sharing of experiences among midwives and cadres to widen their support network and enable them to learn from others.

Contextualize the local health response. This may include providing more decision-making power at the district level to consider trade-offs for local service closures (e.g., balancing the long-term impact from service closures with local COVID-19 infection rates) and modified approaches to service provision (e.g., offer remote consultations with local health providers).

Pasaman: midwife measuring children at the *posyandu*.

Annex: Study locations and COVID-19 zone status

DISTRICT	ZONE STATUS IN EARLY JANUARY 2021
Aceh Selatan	Orange
Alor	Green
Banda Aceh	Orange
Bandung Barat	Orange
Buton	Orange
Cirebon	Orange
Garut	Orange
Hulu Sungai Utara	Yellow
Jakarta Timur	Red
Jember	Orange
Lombok Tengah	Yellow
Lombok Timur	Orange
Manggarai Timur	Orange
Minahasa Utara	Orange
Palu	Red
Palangkaraya	Red
Pasaman	Orange
Pulang Pisau	Orange
Seram Bagian Barat	Orange
Sintang	Yellow
Sorong City	Orange
Timor Tengah Utara	Green
Yogyakarta	Red

Government COVID-19 zones are determined from a combination of epidemiological (incidence rate of positive cases per 100,000 population, mortality rate of positive cases per 100,000 population, weekly increase or decrease in positive cases and hospitalizations, among others), community health surveillance (including the increase of diagnostic sample tests over the past 2 weeks and positivity rate), and health service provisions indicators (including the number of beds in the local referral hospital and the number of beds currently available). https://covid19.go.id/peta-risiko

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