Covid-19 pandemic puts heavy pressure on regular care delivery

GS Health, 26-03-2020

The impact of the outbreak of the new coronavirus that causes Covid-19 is enormous and affects all of us. Everybody is looking at the healthcare sector: do we have enough capacity, especially ICU beds, ventilators and staff, to help all the patients?

The GCC countries have learned from previous experiences with MERS-CoV: they take far-reaching measures to prevent the disease from quickly spreading further and prepare for worst-case scenarios. Because of the large scale of the crisis, it will put tremendous pressure on our healthcare system, it is therefore import to think about the downside of this approach: what happens in the meantime with the 'regular' patient that requires 'regular' care? We can postpone a vacation or an appointment with the hairdresser, but what about care? How long can we postpone that? The longer we postpone care, the higher the chance of permanent health damage. Postponing care can be a silent killer that could potentially affect more lives than the new coronavirus.

At the moment an estimated 50% of the regular care in the GCC is on hold as per our assessment amongst providers. This is a lot; 8 million patient contacts are cancelled every week, 400,000 doctors, nurses, dentists, allied health and other care professionals are not able to practice medicine. Most elective surgeries are postponed, visits to the family physician or dentist are cancelled, many mentally ill or disabled people receive less support. This means there is no healthcare for patients, but depending on the fee structure, it may also mean no income for many care providers. In some sectors, like dental care, this decrease is almost 100%. The impact is also substantial in hospital care; about 50% of the care is cancelled or postponed. And the situation does not seem to be changing anytime soon. Currently, mostly elective care is cancelled, but looking at developments in other countries, emergency care could also be at risk of cancellation.

Figure 1: The impact of the coronavirus crisis on the regular care delivery in the GCC

The reason to cancel care is evident: to prevent infections – of patients and care givers – and to make capacity available for Covid-19 patients. If the coronavirus outbreak would be under control within the next few weeks, the postponed care can reasonable be picked up where it had left of. However, what if the coronavirus crisis lasts until summer, or even longer? A backlog of care will build up and waiting lists will increase immensely, mostly at hospitals, dentists, primary care and mental care. If the crisis lasts until summer, this backlog of care will reach ~USD 4B. Moreover, a large part of the care (~USD 6B) will disappear; it will not be rescheduled. This means a loss for the care providers (their cost continues but their income may stop) but this could also mean that certain patients will deteriorate; a troubled spot on the skin could develop into cancer, a sensitive tooth may infect, and mental health patients could suffer a setback if they do not receive proper care.

To handle this backlog of care we have to come up with new solutions. We see three directions for this: 1) invest in care at home, 2) use the available capacity for regular care wisely and 3) limit care avoidance of vulnerable patient groups.

Please note: We believe the key message of this report is correct and hope healthcare stakeholders in the GCC find this report helpful in battling the Covid-19 crisis. There is however a degree of uncertainty in the numbers presented, which has two reasons: 1) publicly reported information has been used, the validity of the numbers is dependent on the quality of reporting, and 2) wherever information was unavailable, we have estimated bandwidths and based these on the publicly reported information combined with our experience and expertise as well as the consultation of our network of experts. Any feedback on the numbers is welcome and appreciated.

Current numbers

On the 27th of January the first case of the coronavirus was discovered in the UAE. Most other GCC countries started to detect cases at the end of February and since then every GCC state has been affected. The number of cases is increasing at a steady pace, as visualized in figures 2.

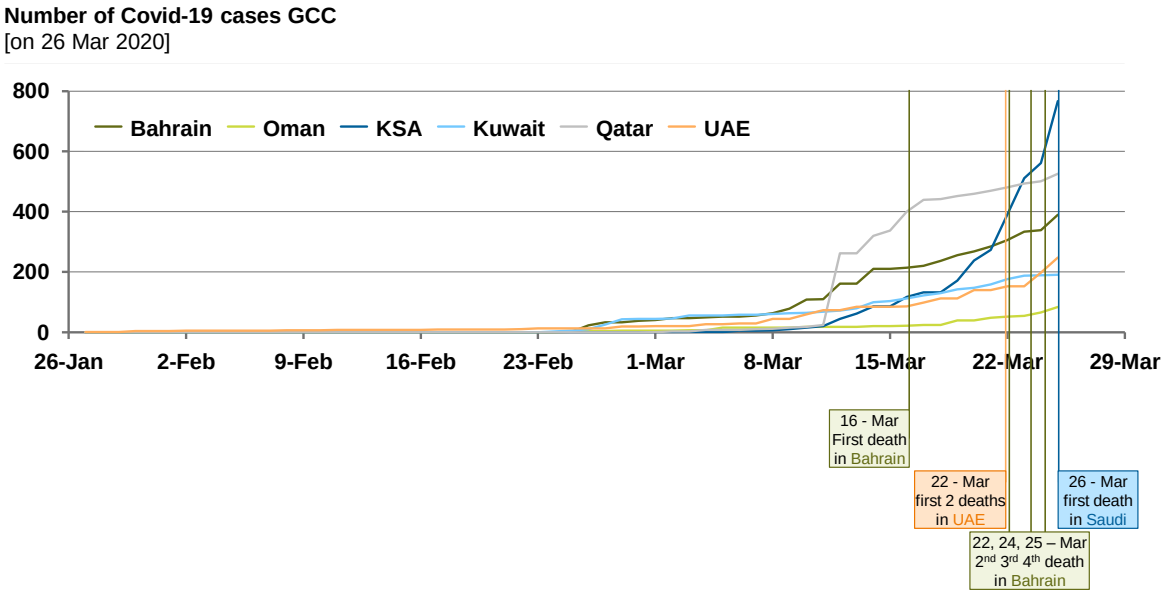

Figure 2: Development of total number of cases in GCC over time

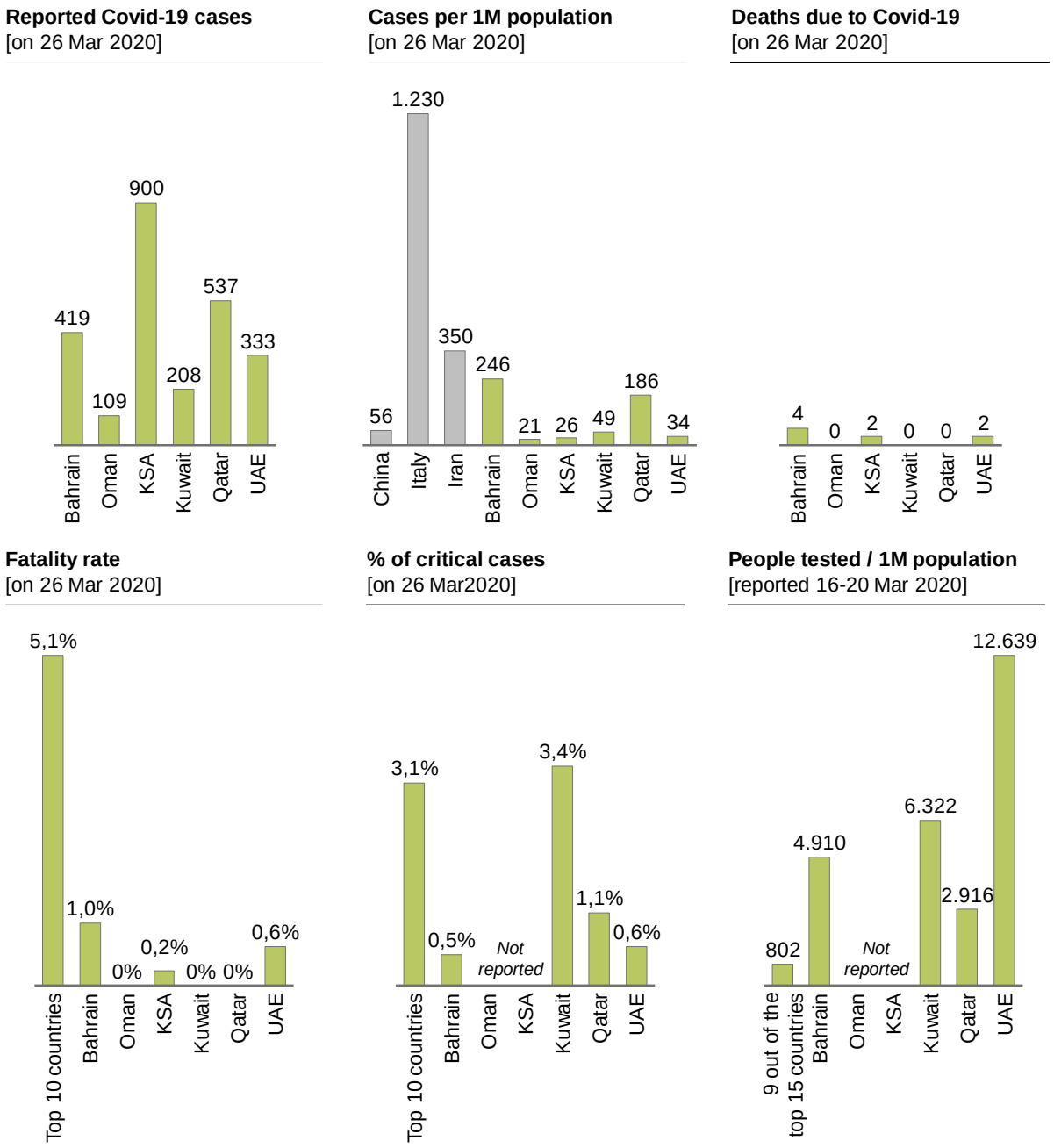

Figure 3: Total cases and total deaths in the GCC on 24/3/2020

There are two things to remark on these numbers:

- The **number of people tested** in the GCC is significantly higher than in most other countries. This could mean that the number of reported cases more closely represents the actual number of cases than in many other countries, which explains why the reported numbers per 1M population are higher than in countries where they perform fewer tests.
- The **fatality rate** and the **percentage of critical cases** in the GCC seem to be lower than in a lot of other countries. There are several effects that impact this number:
    1. It is challenging to calculate a meaningful fatality rate when fewer than 10 fatal cases are reported; the numbers are too low to be statistically meaningful.

2. The spread of the coronavirus in GCC countries lags a few months behind major infected countries such as China and Italy. It is likely more currently infected patients will succumb to the disease in the coming weeks.
3. The more people tested, the more cases are captured, including the less severe cases, which means that the fatality rate will be low.
4. The population in the GCC is on average a young population, which might impact the fatality rate considering that older people have an exponentially higher mortality rate.

Taking these effects into account, it is unclear what the impact is of the far-reaching measures that many GCC countries have taken to prevent further spread of the coronavirus. These strict measures are already evident in the relatively low number of infected patients and could very likely also reduce the fatality rate and the percentage of critical cases.

Measures taken so far to control the outbreak

By 26 Mar 2020, all GCC countries have imposed strict measures to prevent further spread of the coronavirus. These measures include:

- International travel and immigration restrictions
  - Closed entry (except for nationals) and implemented quarantine measures
    - Most countries have also suspended travelers with GCC citizenship from entering the country until there is a system for pre-testing for the coronavirus
  - Banned citizens from travel
  - Stopped issue of any new work permits
- Closure of facilities
  - Cancelled events (incl. Umrah pilgrimages in Saudi Arabia, Grand Prix in Bahrain) and closed tourist attractions (theme parks and arts and cultural centers)
  - Closed beaches, parks and swimming pools
  - Suspended Muslims from conducting their five daily prayers and the weekly Friday prayer in overflow areas
  - Closed all public and private schools and nurseries
  - Ordered the malls, restaurants, coffee shops, sports centers and cultural clubs and public parks and gardens to close - supermarkets, pharmacies and certain branches of banks are exempted and delivery is allowed
  - Issued a ban on shisha pipes
- Limitation of people movement within the country
  - Urged the public to stay at home unless necessary to acquire essential supplies
  - Moved many to work from home except the ones that perform essential jobs
  - Have either suspended all public transportation services (Qatar, Oman), instructed taxi drivers to take sanitation measures (Dubai) or suspended the option to book local taxi services with Uber and Careem (Saudi Arabia)
  - Declared a public holiday (Kuwait and Saudi Arabia); many public and private companies arranged for the majority of their staff to work from home
  - Imposed a curfew (Saudi Arabia and Kuwait only)

In most GCC countries healthcare clinics remain open but people are ordered only to visit in case of emergencies. In Kuwait all private clinics have been closed. With these measures the GCC countries have certainly bought themselves some time. But what is next? Do the GCC countries have the outbreak under control? Are they prepared for worst-case scenarios?

Measures taken so far to prepare for the worst

Many people all over the world are working on demand predictions in order to manage the vital care capacity in the country: ICU beds, ventilators, doctors, nurses and general hospital beds. Even experts are not able to predict the future with certainty. Therefore, most countries take measures to prepare for worst-case scenarios. Most GCC countries installed a crisis center to coordinate the medical response with health professionals triaging and managing healthcare capacity.

There are a few differences between what we can expect in the GCC compared to China or Western Europe. For one, the average age in the GCC is lower than in those countries. Since demand for hospitalization and ICU rises exponentially with age, we can expect fewer critical cases. Secondly, many countries in the GCC have experienced the previous coronavirus episode (MERS-CoV) and have learned a lot from that. Lastly there are differences in the way measures are adopted and actions are taken when cases are discovered. Countries in the GCC are successful in imposing measures. Social distancing might be more difficult for certain population groups (i.e. laborer's areas) but isolating these groups from the rest of the population is easier since they usually live in the same area. Moreover, these people are generally young and healthy, meaning we can expect less critical cases in these groups. Then again, GCC countries have fewer retired doctors and nurses that they can rely on in case more staff is required – all these things should be taken into account when looking at demand and predicting capacity.

In addition, we already see that it is possible for countries in the GCC to quickly add capacity, building two hospitals from scratch in 24 hours. In Kuwait non-MOH hospitals are preparing to transfer their facilities and resources to the MOH and the country already built field hospitals to increase capacity. Qatar established two field hospitals by the MOPH in cooperation with the Qatari Armed Forces with a capacity of over 4,500 beds and are establishing quarantine centers which will reach a capacity of 18,000 beds in the next few weeks.

We can conclude that the GCC countries take far-reaching measures to prevent the disease to spread further at a fast pace and the GCC countries go far in preparing for worst-case scenarios. This is admirable. But what happens in the meantime with the regular patient that requires regular care? We can postpone a vacation or an appointment with the hairdresser, but what about care? How long can we postpone that? The longer we postpone, the higher the chance of permanent damage. Postponing care can be a silent killer that could potentially affect more lives than the new coronavirus.

Impact of measures so far: the collateral damage

'Regular' care is cancelled or postponed on a large scale

On a regular day, there are more than 2 million contacts between patients and providers in the GCC. Since the outbreak of the new coronavirus, nothing is regular anymore. Regular care is being canceled or postponed, both by care givers and by patients.

At least 50% less regular-care delivery, large differences between sectors

Our assessment shows that an estimated 50% of the regular care is on hold due to the coronavirus. This means many patients do not receive the care that they normally receive, and many providers are not able to do their jobs. The majority of this is hospital care, of which roughly 50% has currently been cancelled. Other sectors where a relatively high share of care has been cancelled are dental care and primary care. Only intramural care for elderly, disabled people or mental health patients seems to proceed almost as normal, although in these sectors too measures were taken to decrease the chance of infections, such as limiting the number of visitors.

Please note: these numbers differ between the GCC countries. In Kuwait the impact of the measures currently appears to be the highest, mainly driven by the government mandating all private clinics to close. UAE still proceeds with some more regular care than the other GCC countries but seems to be tightening the screws as we speak and is therefore expected to be close to the same level by the end of this week.

Estimated drop in care delivery in the GCC
[As per Mar 22 – 28 width of the arrow estimates size of the sector]

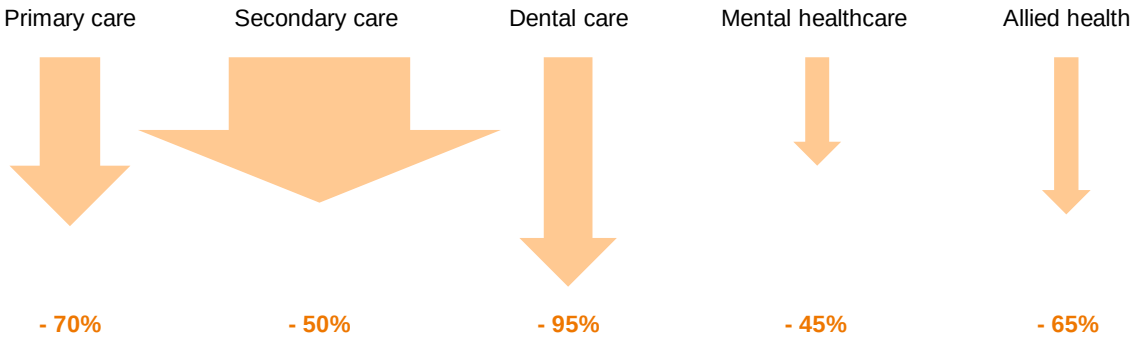

Figure 4: The impact of the coronavirus crisis on care delivery in 5 sectors

Hospitals drastically cut the provision of care. Healthcare providers and patients themselves have cancelled between 30% and 70% of care. Most elective surgeries have been canceled: appointments for new hips, cataract surgeries, incontinence procedures, varicose veins or plastic surgery do not proceed. Also, major procedures like gastric sleeves or heart valve replacements are postponed most of the times. Some oncology patients have to deal with postponed CT scans or chemotherapy and also for breast cancer diagnostics most hospitals have halted service. Moreover, most outpatient clinics are empty. A large number is canceled, a part proceeds via telephone or video call. The coronavirus also seems to have impact on the Emergency Department. People are scared and avoid hospital visits, meaning only the critical cases show up at the ED. Moreover, people wait as long as possible so they present late at the ED with worse symptoms.

In **primary care** patients avoid the clinics on a large scale. We see an average decrease of 70%. Most waiting rooms are empty and from an average 20 consults a day most family physicians currently do 2 consults a day. The primary care physicians find alternative ways to serve their patients, such as consultations by phone or online. Most patient seem to postpone their care. Most government clinics have started special 'corona practices' to split the patient flows.

Dental care is the sector where we see the highest collateral damage; it almost entirely stopped. Dentist only do emergency care, like replacing a crown or pain treatments. Regular check-ups, filling cavities, hygienic treatments and orthodontists are all postponed until further notice.

Many **mental care** patients do not receive adequate care. Outpatient treatments are decreased to a minimum and clinical treatments like electroshock therapy are postponed. Moreover, there are rarely any intakes and admissions are minimized. Individual, ambulant care proceeds, but often in a different manner, using online or phone solutions. Most people with light problems cancel their appointments.

Lastly also **allied health** is impacted; Physiotherapist, the largest group of allied health professionals, the decrease in care delivery is at least 65%. Some practices stopped all care delivery, in others the initiative is with the patient.

The reason to postpone regular care: avoid infections and free up capacity

There are two main reasons to delay care: avoid infections and free up capacity.

Care staff listens to the recommendations of the governments and socially distance themselves by minimizing contact between care giver and patient. Moreover, by keeping vulnerable and elderly patients away from locations where infected people might show up, we try to collectively avoid the chance of infection. Cancelling outpatient appointments is an effective strategy; normally 50% - 60% of the patients visit the hospital for an outpatient appointment. In some sectors the chance to infect the care provider is high, for example for the dentist and the podiatrist.

Freeing up capacity is mostly applicable for hospital care. By performing less surgeries that potentially required admission into the ICU, there literally is more space for corona patients. In addition, equipment normally used in the ORs that is currently unused is being prepared to use for corona patients in order to increase the ICU capacity. Capacity of course is not just about beds and equipment but also about staff. By cancelling elective surgeries, doctors and nurses can be deployed to care for corona patients. For most care providers it still feels like the calm before the storm; procedures are cancelled but they are not yet required to care for corona patients.

Very important to keep in mind is that it is not only the providers that take measures and availability of services that is limited, but patients are also worried about the risk of infection and actively avoid care.

How long can we keep going like this?

What is the impact of postponing non-emergency care, that is happening on a large scale in the GCC? This depends on how long the corona crisis lasts. To get a feeling on the impact we distinguish three scenarios: 1) it is a matter of three weeks, until early April, 2) it will last three months, until summer or 3) the situation will last for a year.

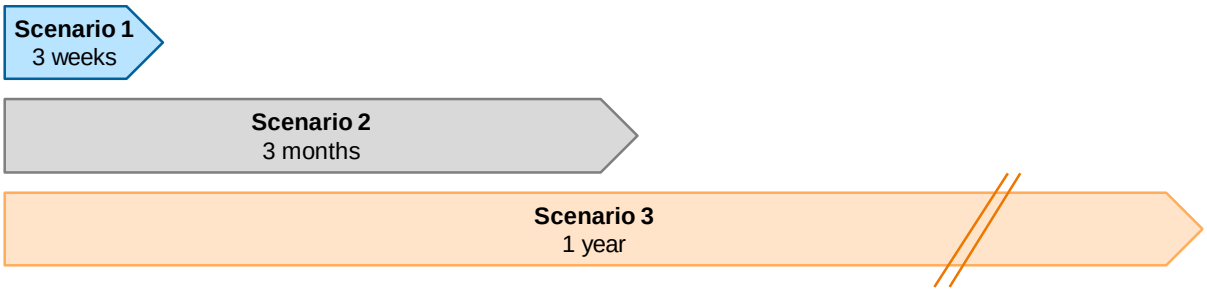

Figure 5: Three scenarios for the length of the current corona measures for healthcare

The current measures of cancelling most of the regular care fits with scenario 1. If the situation returns to normal after a few weeks, we can all work hard to catch up on the postponed care delivery. However, it does not seem realistic to think this crisis will be resolved in a few weeks.

The impact on the care system: A backlog of care and care that disappears

In scenario 2 and 3 a backlog of care builds up; waiting lists will increase at a fast pace. Patients that require new knees or a treatment for varicose veins will have to receive the required care at some point. In addition it is reasonable to assume that for many patients their symptoms worsen if they keep going without any treatment; a troubled spot on the skin could develop into cancer, a

sensitive tooth may infect, and mental health patients could suffer from a setback when they do not receive proper care in a timely manner. If the corona crisis lasts more than 3 weeks, the situation will be problematic for a lot of patients.

Figure 6 shows an estimation (with a bandwidth) of the part of the currently postponed care that most probably has to be caught up on.

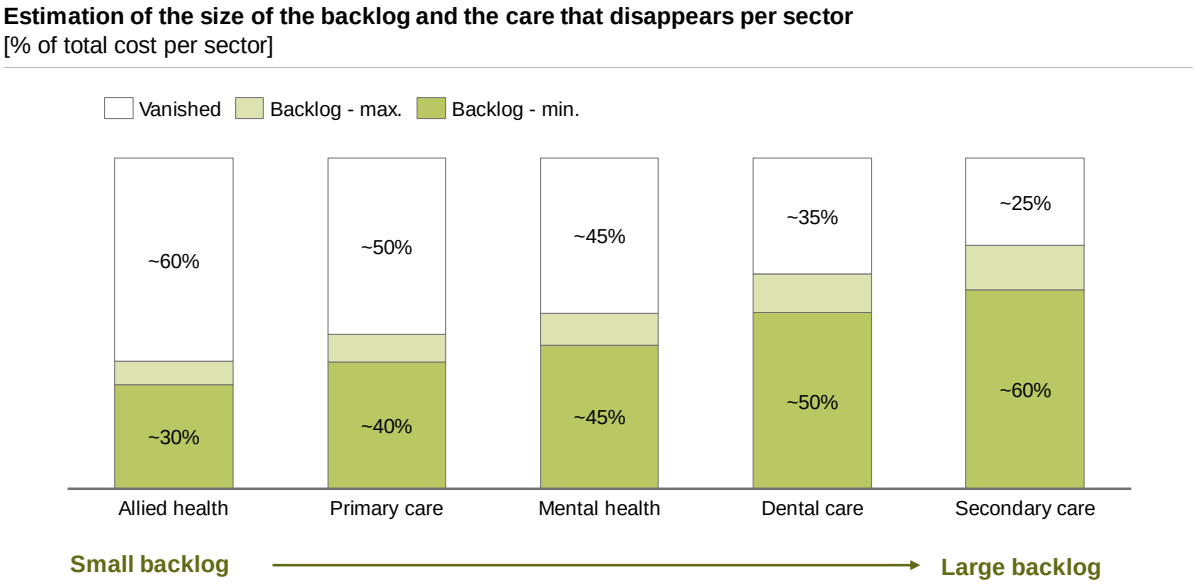

Figure 6: Estimate of the size of the backlog and the vanished care per sector

Another part of the currently postponed care is expected to disappear. It makes no sense to reschedule all missed outpatient appointments for chronically ill patients. Regular check-ups with the dentist will shift forward instead of being repeated. Ultrasounds to check pregnancies will be canceled and won't be rescheduled. Moreover, the decrease in sports activities and traffic will lead to fewer muscle strains and broken bones, meaning a lower demand for care. Another part of the care, mostly in the primary care and allied health, will no longer be needed: after a while many of the headaches, sore ankles or stiff backs will simply disappear.

Both the care being postponed as well as the care that vanishes has an immense impact on patients and care providers, as shown in Figure 7.

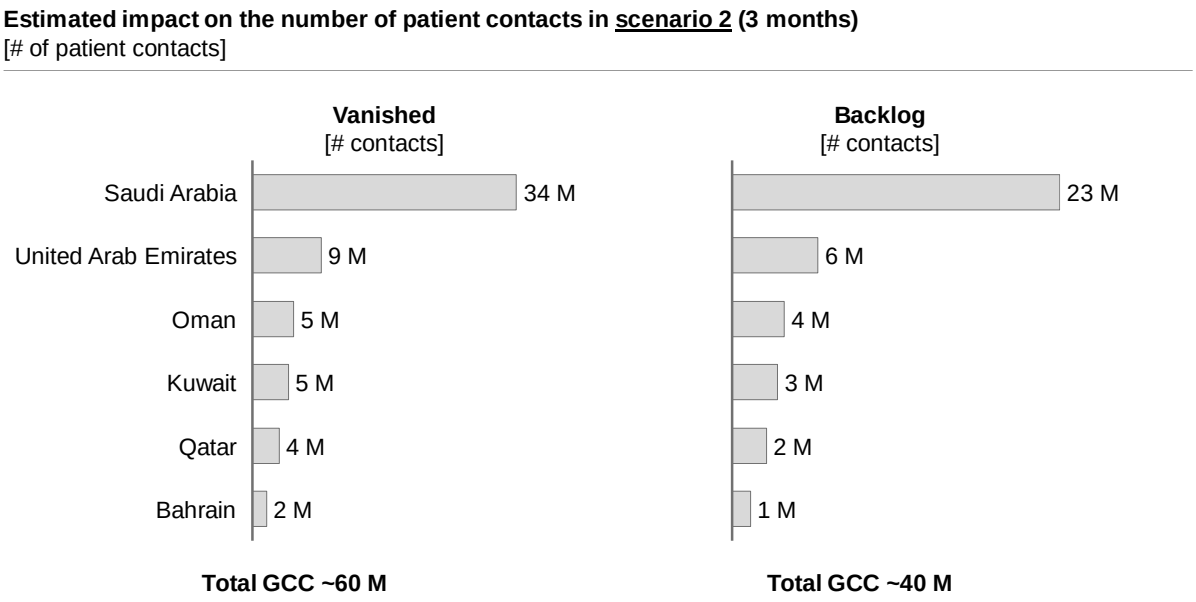

Figure 7: Estimate of the size of the backlog and the vanished care in the three scenarios

Economic consequences on the healthcare sector

Besides an immense impact on patients, the current situation has far-reaching economic consequences for care providers. The backlog can increase to billions if the situations lasts. Also, the vanished care is significant if the current measures will last for longer than three weeks, as presented in Figure 8.

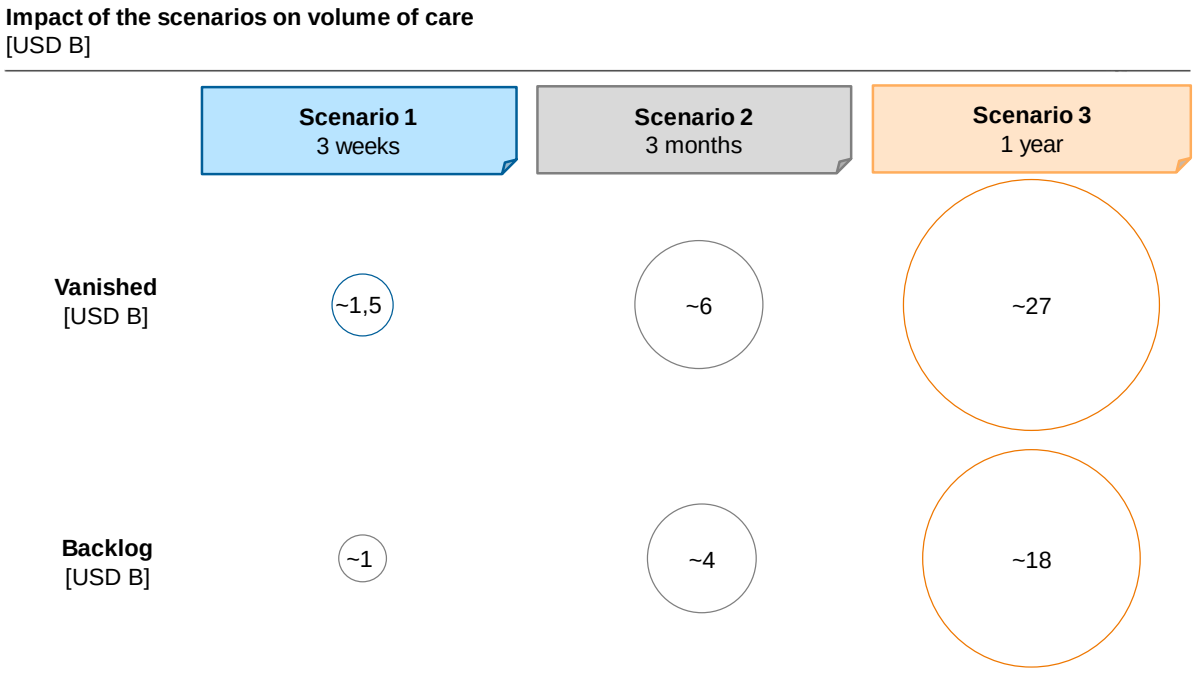

Figure 8: Estimate of the size of the backlog and the vanished care in the three scenarios in weeks of care and USD.

For the sectors where the majority of the care disappears, their income also decreases. Also, for sectors where the backlog increases, most costs continue while income stops. To reduce the backlogs at a later stage, extra funding is required, for example for extra staff. Moreover, many care providers currently have higher costs because of the coronavirus, for example for the

procurement of ventilators and face masks, although in the GCC the government bears these costs at the moment. Many governments also announced supporting companies with the financial impact of the corona crisis, for example by postponing loan installments and granting new loans. In addition to that, it is important to establish an emergency plan for the financial continuity of (private) care providers and create a shared plan to tackle the care backlog.

In conclusion, it is important to make the trade-off between the measures to prevent the disease from spreading further and the impact of these measures on regular care delivery and to actively minimize the collateral damage.

Recommendations to minimize the impact on regular care delivery

If scenario 2 or 3 would become reality, and the corona crisis will last for months or longer, it is essential for the quality of healthcare to start thinking about the organization of continuity of regular care as soon as possible. Otherwise the 'regular' patients bear the brunt. We see three recommendations for this:

1. Invest in the shift of care to home
2. Use the capacity for 'regular' care as good as possible
3. Limit care avoidance at vulnerable patient groups

To implement these recommendations strong central coordination is required. Although this seems to happen across the public providers of many GCC countries, these exceptional circumstances ask for exceptional interference, where we need to focus even more on coordination and alignment, within the public sector but also including the private sector.

1. Invest in the shift of care to home

A solution that is unavoidable to control the growth of the backlog is to organize care as much as possible remotely: at the patient's home. The movement of care from the hospitals or clinics towards homes has started a couple of years ago. In 2016 we proposed in our study 'No Place Like Home' that 46% of the total care could be delivered at home. Many people talk about 'the right care at the right location' these days, but the shift towards care at home is still slow. Hospitals and primary care physicians do not exactly know how to deliver the care at home and have questions around privacy, IT and financing.

Driven by the coronavirus, the number of (video) calls as an alternative for outpatient visits and primary care consults is increasing fast; within the past week a lot of the hospitals that we spoke to offer phone or video consults or are even launching apps to deliver care to patients.

However, this is not enough. It is crucial to start delivering other forms of care at home, for example monitoring chronic patients (i.e. heart, lung or diabetes) or the treatment of vulnerable patients that require dialysis or chemotherapy. The same applies for prevention- or treatment programs in primary care and mental healthcare, as presented in figure 9. The introduction of various apps by certain (private) providers in the region proofs that digitization of care can happen fast when needed. To shift care towards homes of patients as quickly as possible and on a large scale, it is important to coordinate an acceleration program at a national level.

Can remote care be part of the normal care delivery process?
[estimation of possibilities of care at home per sector]

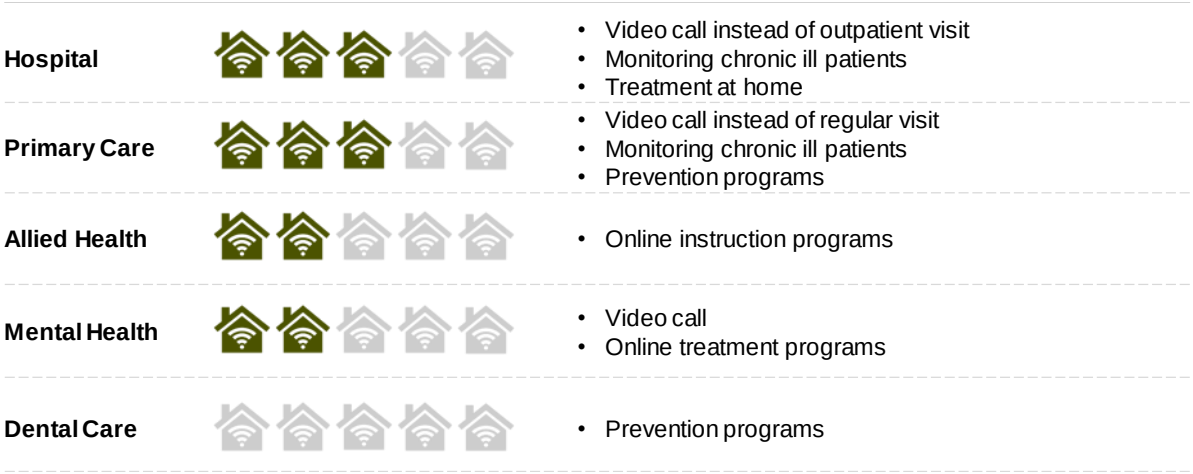

Figure 9: Possibilities for remove care delivery per sector

2. Use the capacity for 'regular' care wisely

Even if remote care can be arranged very soon, it will not be enough to deliver all the care. For a surgery or a dental treatment, you require a professional treatment area and many care types require physical contact between care giver and patient.

How do we ensure that the backlog does not increase unnecessarily, especially when it leads to deterioration of the patient? This requires a national task force of medical specialists and other care professionals to avoid and digest the backlog as much as possible. It requires a plan to prioritize per type of care and make capacity available to catch up on the backlog. Part of this could be to concentrate corona patients and create corona-free locations where you can proceed with the regular care that has been given the highest priority by the experts in the national task force. Moreover, it is important to redesign the patient pathways to ensure safety for patients and healthcare providers. For example, by including home testing before admission to a corona-free hospital.

3. Limit care avoidance at vulnerable patient groups

The third measure that we propose is a fast-track plan to avoid 'care avoidance' for vulnerable patient groups. Many patients are currently scared to visit the hospital or clinic. The risk of care avoidance by vulnerable and elderly patients seems high, especially if this crisis lasts longer. Think of all the vulnerable elderly patients that live at home and are scared to contact care providers, or patients that are awaiting diagnostics or treatment. Or mentally fragile patients that are not able to ventilate their issues via online tools and because of that do not receive any guidance. Finally, there is a large group of people with limited digital skills that we should not forget about. The aforementioned task force is required to assess which patient groups have the highest risk and to quickly design a practical national plan for these patient groups.

Last but not least, there are also positive developments in healthcare due to the coronavirus; the ED departments are running more efficient because patients triage themselves and don't visit the hospital if they don't really have to. There is a movement from care towards home. The corona crisis could immensely accelerate these positive developments if we are able to seize the moment.

About this study

GS health is a strategic healthcare advisory company. In the Netherlands we support the national crisis team to predict demand and coordinate care during the corona crisis. Between 24th and 26th of March we performed an independent study to assess the impact of the corona measures on the regular care delivery in the GCC. For this we asked care professionals (both clinical staff as well as managerial staff) what the impact of corona measures currently is at their organizations. We compared this with the same research done in The Netherlands the week before.

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