Learning from Covid-19 in real time: Expressions of resilient performance during the pandemic

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Part 1: A proposal for how to record reflections during the Covid-19 pandemic.

Many of us in the Resilient Health Care Network (RHCN) are working directly on the Covid-19 pandemic – as clinicians in Emergency Departments, Wards, ICUs and Operating Rooms, for example. Others are helping coordinate or manage things – as Managers, Quality and Safety Officers, Chief Medical Officers, or Policymakers. Everyone in these capacities are busy working on the virus or its consequences and few will have time to look at what is happening in real time through a "resilience" lens. We are all hearing reports of resilient practices occurring such as departures from rigid protocols, getting things done without waiting for approval or sign off, seeing patients via teleconferencing facilities rather than face-to-face, reusing Personal Protective Equipment, wearing PPE for an entire shift, working around ventilator shortages and so on.

It is not hard to predict that there will be many Inquiries, conference sessions, workshops and other events by the time the virus reaches its natural course. Many of these will contain analyses of inter and intra-country data about infection rates, deaths and the like. Some will be recriminations about what governments or local administrators did that was wrong, and which countries or health systems got it right. Mostly these will be retrospective views on what happened biased by hindsight. We therefore run the risk of not really understanding what took place before memories have faded.

There is a case for us in RHCN involved with the pandemic to help document our thoughts and bewilderment about what happened as it happened. Ideally, participants could record their thoughts and experiences in diary form as they occur, or at the end of a shift. But there may not always be the time and energy to do that.

We have therefore prepared a simple outline – an aide-memoire if you prefer – for people who may need some guidance to record what they observe. We propose that those in RHCN working in some pandemic role in the system accept the invitation to record their observations, and that others will help to analyse the data to help us all to make sense of what happened. We might do various things with the information – write a report with it, use it as learning materials, utilise it in a future volume of the Resilient Health Care series, or develop some academic papers, for example. Here is the proposal aim, and attached are the outline itself (**Part 2**), and some background information (**Part 3**) about the scope of the proposal, how we came to the potentially useful concepts in the outline, more detail about what to do if you would like to participate, and some references we used to shape the current document.

Proposal aim: To inspire and support documentation of reflections on RHC expressions during the Covid-19 pandemic for on-going learning and future research.

Part 2: An outline to support diary entries

Here is a simple outline for those who are doing COVID-19 work in order to gather data – essentially, diarised thoughts of what they are seeing, doing, or contributing. We have tried to make this as simple as possible – but we hope not simplistic. It is definitely not meant as a checklist; more as an aide-memoire and a stimulus to remind people who feel they can contribute to write up their experiences and learnings for later discussion.

Building blocks

Where do you see examples, good and bad, of changes in:

- Governance,
- Financing,
- Service delivery,
- Medicine and equipment,
- Supplies and resources,
- Health workers,
- Use of information.

Resilience potentials

In what ways are you, and the people around you:

- Responding to events,
- Monitoring what's going on,
- Learning over time, and
- Anticipating what will happen in the future?

Efficiency-thoroughness

The Efficiency-Thoroughness Trade-Off (ETTO) is well known. It says even in normal times, let alone in times of challenge, there will be give and take, back and forth, exchanges between people and *quid pro quo* behaviours being enacted. Where are these occurring? With what effect? Are they more obvious on some levels than on others?

Work-as-imagined and work-as-done

Where are people doing work-as-imagined? Work-as-done? Where are the gaps between the two narrowing? Widening? Is it possible at all to imagine what needs to be done – by oneself or by others? In the short term or in the longer term?

Muddling through

There's no one clear prescription for how best to handle the virus, and no game plan everyone agrees on. This goes both for what to do when the crisis is realised and when the crisis seems to be over. Yet people are often being purposeful and solving problems in real time. How are people handling this? Purposefully? Making it up as they go along?

Other considerations

As you go about your work, perhaps you are seeing things, or doing things, that are not captured by these preceding five headings. Write down any other observations you are making or thoughts you are having.

My diary entries

Here's some space for you to write in. Do this on as many shifts or occasions as you wish. Make extra copies of this diary sheet for each time you make your observations.

Name: ________________________________

Date: ________________________________

Role that day: __________________________

Diary observations:

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Part 3: Background information

Health care systems are obviously challenged at the moment, and the Covid-19 pandemic may turn out to be the ultimate test of the lessons of resilient health care we have learned during less taxing conditions. Some concepts and practices will prove their merit and some will fall by the wayside. Several members of the RHCN have already discussed how we can learn from the current situation so that we will be better able to cope with the next unexpected crisis – which may be another pandemic or perhaps something entirely different. The purpose of this note is to offer some suggestions of what to think of whenever there is a temporary lull or some time for reflection.

Scope

The Covid-19 pandemic is not just a severe challenge for health care systems worldwide, but also for how national and international (global) systems can continue to function and ultimately survive. Even if much of the immediate concern is with how well health care systems function on local and national levels, it is obvious that the pandemic in many ways has changed the conditions for how health care can be provided. In order to make sense of how an individual health care system copes with the challenges it is therefore necessary also to make sense of how national and international systems and institutions cope with their challenges – one of which is to make sure that individual health care systems have the resources and capabilities necessary to carry out their assignments.

Temporal scope of problems

There are already plenty of examples of practical problems in terms of lack of resources and materials (test kits, face masks, disinfection gels), available beds, ICU beds, equipment shortages, staff shortages, mortuaries, etc. Much of the immediate concern – and anxiety – will therefore rightly focus on these issues and how they can be solved in the short term.

The pandemic must, however, also be handled in the middle and long term on both the national (political) level and the international levels. On the national level there are already many examples of different national strategies as well as differences between politicians and health care professionals in what they recommend and how they interpret (and anticipate) the situation. On the international level the Covid-19 efforts are currently led by the WHO with the OECD, the UN, ISQua and other agencies in support but the impact on the national levels may not always be as intended or desired.

It will be valuable to learn from what happens at the various levels, how decisions are taken (e.g., based on evidence or political agendas), and not least how decisions taken at different levels affect each other. How are decisions made in real time, what is the impact of economic (and political) pressures (e.g., raising unemployment, businesses closures)? Which criteria are seen as most important and how do their priorities change? What is the time horizon of decisions? What weight is given to long-term consequences? What is communicated to citizens and how? How are the inevitable restrictions enforced? How does the public respond and how do the responses change over time?

Learning from previous epidemics / pandemics

Much of the public and practical concerns are understandably about how to cope with the excessively large number of people who are in need of treatment. Although many providers of care have disaster plans and some even have simulated or gamed pandemics and their potential responses, few if any health care systems have imagined this kind of

situation in sufficient detail and none have been fully prepared for it. This is not because there has been a lack of opportunity: think Ebola, SARS, MERS) but because earlier epidemics have been in "other" places, a phenomenon known as "Distancing through differencing" (Cook & Woods, 2006).

Some learning has, of course, taken place as seen by the very different strategies in different countries. These range from widespread testing (South Korea), contact tracing (Singapore, Faroe Islands), isolation of communities (China, Italy, and slowly the rest of the world), asking the population to take responsibility and do sensible things (Sweden) and even some levels of initial – or even persistent – denial (Brazil, the US, the UK, Russia). These natural experiments in managing the crises in different ways will create very valuable learning opportunities.

Potentially useful concepts

Resilient Health Care and Resilience Engineering, and the Safety-II approach, have introduced a number of concepts which may be useful in trying to make sense of the pandemic as it currently unfolds.

The resilience potentials

An article by Legido-Quigley, H. et al. (2020) considers six building blocks of a health system, namely Governance, Financing, Service delivery, Medicine and equipment, Health workers, and Information. These building blocks are clearly relevant for the health system (primary and secondary care). But since the pandemic is a problem for more than the health system, concepts or "building blocks" are needed that can be used across different levels of services and societies. One way of trying to characterise what happens (on all levels) is to use the four potentials for resilient performance (respond, monitor, learn, anticipate) as a way of understanding what goes on at the various levels.

While it is (fairly well) known how to respond to infections, the capacity to respond has in many cases been insufficient. The preferred or recommended responses (WAI) must therefore be adjusted to fit the circumstances (WAD) A critical part of responding has been when to respond, i.e., recognising that an epidemic existed. Here there have been notable differences among nations. Another interesting aspect is when the responses are no longer needed. Quarantine is typically for 14 days, closing of borders for 30 days, but what is the evidence for that? What will happen mid to longer term? Will there be, as some think, second or even third wave infections? Monitoring, in the form of testing, has become a major issue. Some countries already had the capacity to test, others have quickly developed it, and yet others have downplayed the importance of testing – at least initially. Monitoring is critical since much of what happens is based on outcome measures (people who need treatment) rather than process measures. Learning is clearly essential, and this note is an example of that. There will clearly be a lot of single loop learning, but how about double-loop learning? Anticipation has in this, as in many other cases, been the step-child, not unrelated to the lack of learning mentioned above but the importance of anticipation is now more readily recognised.

We should be particularly mindful of our capacities during the crisis: anticipating things likely (and not so likely) to happen, monitoring what occurs, responding to particular crises and other disturbances, learning from things that eventuate, and creating a capacity for manoeuvrability and flexibility over time. The Covid-19 experience might be used to develop sets of RAG-questions for future pandemic situations, for instance as a supplement to WHO's *Hospital Readiness Checklist For Covid-19*.

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Efficiency-Thoroughness

There is clearly a lot of Efficiency-Thoroughness Trade-offs (ETTOing) going on at the moment, and on all levels. In times of challenge and with scarce resources (time, expertise, funds) people inevitably trade-off efficiency and thoroughness – it is a fundamental aspect of all human behaviour. The idea of triaging patients is an exemplification of this principle. This is inevitable, but it might be interesting to try to understand the consequences of responding to pressures (clinical, economical political) and whether something can be learned from that.

Amongst many other examples which will come to the fore during this crisis, an interesting trade-off is in the development and testing of vaccines or treatments, where standard protocols are overruled because of the urgency.

WAI-WAD

As already mentioned, the crisis will provide countless examples of the difference between WAI and WAD. Both on the strategic level (the level of preparations in a country, for instance) and on the operational level when people at the sharp-end must to cope with unpredictable conditions and developments.

Muddling through

Muddling through is obviously another important lens by which to look at what happens. The pandemic requires continuous adjustments at all levels from local to international. There is a sweet spot to be found here – between slavishly following protocols, and anything goes. Either end of this continuum is undesirable.

Other issues

There are clearly other issues that are important even though their effects may be less direct. This includes the financial system, the transportation system, information and misinformation, individual and collective anxiety (already becoming apparent, and it will intensify), commercial pressures on acceptable (affordable) levels of safety, and probably much more.

What to do?

Now is not the moment to start ambitious research projects. But it is the moment for a bit of reflection on what it might be useful to pay attention to as the crisis develops. We hope the present note can be useful as a background document to help people in RHCN who are dealing with Covid-19 to look for resilience expressions as they do their work.

Data sources

From a research perspective we are clearly at the stages of establishing empirical data in order to generate hypotheses – or simply to make sense of what happens. This requires all the data and information we can possibly get, whether as numbers or as something else.

For the quantitative data there will most certainly be an abundance of measurements, statistics, and mathematical modelling. So getting quantitative data is probably not a major concern. (Making sense of the data may be, but that is another story.)

The situation is different for the qualitative data. Here it is important to pay attention to what happens. The ideal situation is to be part of what happens but with time to reflect or as an observer. To the extent that this is possible, it should be used. The most important source of data will be authoritative daily reports such as those of the World Health

Organisation (WHO) https://www.who.int/emergencies/diseases/novel-coronavirus-2019, the worldometer at https://www.worldometers.info/coronavirus/ and the Johns Hopkins Coronavirus Resource Center at https://coronavirus.jhu.edu/map.html. There will also be what is reported in the news and on social media – print as well as electronic – including critical comments and expert opinions, although many of these sources may be unreliable. Even though practically all of this information will be available afterwards, it is important actively to keep track of it as the pandemic develops – and to look for patterns.

References

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