Covid-19 Corona Virus Pandemic: Response of Health Department Government of Sindh

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Introduction

This study is a narrative study and describes the personal experiences of the author during the COVID-19 pandemic when he was working as the Secretary of Health department in Sindh province of Pakistan. The Health Department is the second largest department in Sindh Government after Education Department. Unlike Punjab, The Sindh Health Dept is single department and not divided as such into primary and secondary Heath care departments.

I was working as Secretary Health Sindh, when this global pandemic hit Pakistan in February 2020. After the first spike was almost over, I got myself transferred from Health department due to unavoidable personal reasons and went on leave, so after completion of my leave I joined the Population Welfare Dept. This paper is based upon my experiences during the pandemic crisis management, which I shared with the new secretary during our meetings.

A Brief Background: Deputy Secretary, Staff to Chief Secretary Sindh has informed me that Worthy Chief Secretary has desired that I may submit a complete report of the experiences of the first spike of the Covid, the challenges and the lessons learnt there of and submit recommendations through the new Secretary Health, who would personally pay visit to me soon.

In response to my services in containing the COVID-19 during its first spike, the next day new secretary health Dr. Kazim Hussain[1] visited me. Mr. Kazim has served with me as Assistant Commissioner UT when I was Assistant Commissioner in District Nasir Abad Baluchistan, so we already have good interaction with each other. At the start, he told me that the Worthy Chief Secretary spoke high about our efforts taken during the first spike and he was specially advised by Chief Secretary to visit me for experience sharing. He intimated that there was positive impression all over the country

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that the Sindh province during first spike of the Covid, successfully and effectively tackled the pandemic. And now during the second spike there would be high expectations from him to tackle this second spike with success.

I told him further that, yes, it is a good opportunity for experience sharing and learning, wherein I would narrate the issues of public policy and governance, institutional capacity, leadership roles, coordination failures, conflict management, interface with political bosses and implications of political pressure and political involvement in micro-management. I would also dilate upon the role of different stakeholders and coordination issues with Federal Government, Superior Judiciary and armed forces during their involvement in subject pandemic management. Lastly, I would like to tell the most important part, which was personal experience of leadership role and stress management, when I myself became victim of corona during such assignment and the same would be of much interest and value for the incumbents like him to be careful about one's psychological and physical health. After these outlines I started narrating my experiences with the new Secretary Health and asked him if appropriate he might note down important points as he had to submit the report to Chief Secretary also.

Statement of the Problem

In Pakistan's traditional Health care system, focus never remained on the prevention in general and on the infectious diseases in particular. The main focus always remained on the cure whether it be primary, secondary or tertiary health care systems. Hence, there exists an almost absence of specific infrastructure or expertise on infectious diseases control in our health systems. The public health establishment never remained fully successful to deal with earlier major outbreaks like Congo, SARS, Dengue etc. In recent global pandemic of COVID-19, our weak health system had to face a much challenging and gigantic task. Moreover, in case of Pakistan, the civil servants (public officer holders) are the principal agents and their role is very important in dealing with such pandemics. There is a dire need to critically analyze and assess how the pandemic challenges could be met successfully in future.

Key Questions

I. Did the Sindh Health Department remain successful in dealing with the challenges of COVID-19 pandemic?

II. What lessons are learned from these unprecedented challenges?

III. What sort of reforms should be introduced in our health system to deal with future pandemics?

Situation Analysis

I provided a brief situation analysis that after the devastating effects of Spanish Flu pandemic (almost 100 years ago) in early 20th Century, the Covid-19 Corona virus pandemic severely hit the world. Almost 99 million people in the world were infected by the virus and more than 2.13 million people died (Source Sindh Health Dept). This pandemic proved very lethal and has crippled the socio-economic fabric of not only developing countries, like India and Latin America but also that of developed world especially UK, USA and Europe.

Pakistan was not an exception in this regard, our economy was badly affected, but with the grace of Allah, Pakistan remained successful in controlling the first spike of pandemic to greater extent as compared to other regional countries. Sindh was the first province, where the first case of virus was detected in Karachi in mid February 2020. Being the Secretary of the Health Dept. Sindh, I was in the front line to tackle this historical pandemic in Sindh.

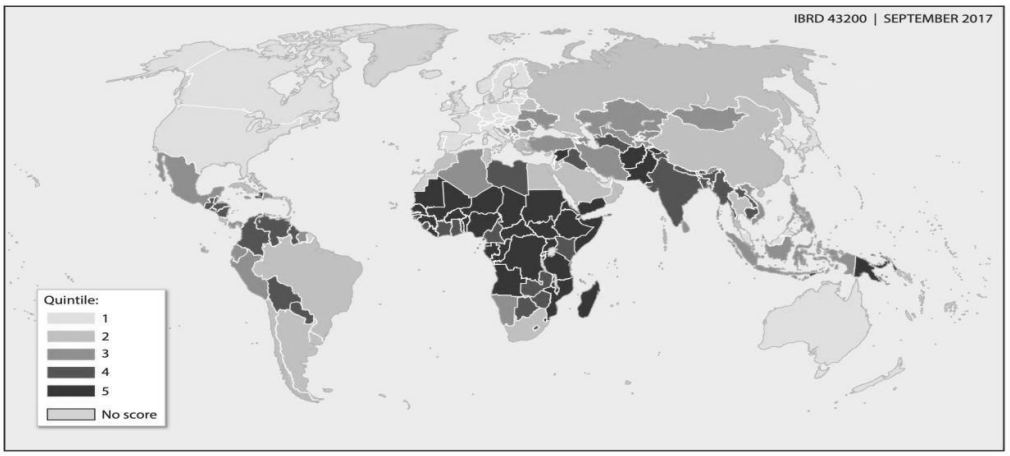
I mentioned where we stand as a country in this global Pandemic Preparedness Index. A country's ability to control pandemic spread can be shown using a preparedness index made by Oppenheim and others (Oppenheim, 2017). The index manifests global variation in institutional readiness to find out and respond to a huge outbreak of pandemic. It depends on core capacity metrics and other publicly accessible cross-national indicators. Nevertheless, it varies from themetrics in its breadth and focus on measuring underlying and enabling institutional, infrastructural, and financial capacities such as the following: Public health infrastructure capable of tracing, tracking and treating cases depends on adequate physical and communications infrastructure to transform information and resources ; basic bureaucratic and public management capacities; capacity to mobilize financial resources to bear the burden of disease response and the economic shock of the outbreak ; ability to execute effective risk communications.

Well-prepared countries have efficient public institutions, strong economies, and substantial investment in the health sector. They have built specific competencies relevant to tracing tracking outbreaks, including surveillance, mass scale vaccination, and risk communications. Ill prepared countries may suffer from weak public

administration, political instability, meagreresources for public health, and issues in fundamental outbreak detection and response systems.

Following figure represents the global distribution of epidemic preparedness with countries grouped into quintiles. A geographic analysis of preparedness shows that some countries of high spark risk also are the least prepared including Pakistan. The countries with high spark risk from domesticated animals (including China, North America, and Western Europe) have relatively higher levels of preparedness.

Figure 1: Global Distribution of Epidemic Preparedness 2017



Note: Countries are grouped into quintiles of epidemic preparedness (1 = most prepared, 5 = least prepared).

In view of the above figure though our country is not placed in better quintile in the map, yet as whole the country performed very well in dealing Covid-19, even compared to many developed countries.

1. Effective Tackling of Covid-19 Pandemic During the First Spike

From the very beginning our organization faced various internal and external issues, so here I would share what strategy we adopted and how we tackled the first spike successfully.

1.1 Solving Coordination Issues with District Administration

At the field level in such emergency situation, the execution of the testing, tracing and quarantine facilities and implementation of lock downs was not possible

without the active support of District administration. Initially the district administrations were not supportive and were not taking the subject emergency seriously, so I requested the honorable minster health to organize whole day marathon session with CS and CM along with all DCs and Commissioners so that we might brief them about details and importance of this emergency. Thus, on our request a meeting was organized in CM House where in we briefed the administration about the Covid-19 and the steps to be required from them in coordination with Health establishment at District level. Consequently, owing to this high level meeting the Quarantine centers and Isolation wards were established on war footings at districts level. (Annexure B&C). Had we delayed this strategy of involving higher ups; we would have faced further coordination issues in the field.

1.2 Establishment of CM Task Force

The other important decision taken in the subject meeting was establishment of CM Task forceon Covid-19 where in all relevant stakeholders from public and private sector were included, subsequently, task force under CM met almost daily to discuss day to day situation. Further itwas decided to establish an IT dash board in Health Dept and CM House to get daily systematic updates of Covid-19 from public and private labs and hospitals. The establishment of CM taskforce on the one hand was very important step which gave lot of importance to the subject emergency, and on the other hand it raised high expectation from us to perform well.

1.3 Establishment of Huge Quarantine Centers

If we look into the past pandemics, the quarantine practice started in the 14th century in response to the Black Death and the same is continuing till today (Mackowiak, 2002). Quarantine and social distancing (i.e.,prohibiting mass gatherings) during the 1918 influenza pandemic also reduced spread and mortality rates, particularly when implemented in the early stages of the pandemic (Bootsma, 2007). During the2003 SARS pandemic, the health professionals, who reported appropriate and consistent use of masks, gloves, gowns, and hand washing were less infected (Seto, 2003). During SARS and Ebola outbreaks, health management and hospitals administration-controlled disease spread by isolating symptomatic patients, quarantining patient contacts, and improving hospital infectioncontrol practices (Cohen, 2016).

So, the first practical step we took was establishment of quarantine centers. Accordingly, we established the huge quarantine centers at the divisional headquarters level in newly built vacant labor department flats. (Annexure: B). We also coordinated

with Ministry of Interior, NADRA and FIA in order to get the regular data of travelers coming from abroad and then we shared the data with district administration so that they trace these travelers and keep vigilance on them, and if they found symptoms in any of travelers, they must be tested forth with. By adopting this strategy, the first case of Covid was detected in Karachi in Feb 2020. The suspect had background of travel from Iran as a pilgrim, subsequently many pilgrims from Iran were tested positive. There were still thousands of Pakistani Zaireen stranded at Pak Iran border, who were to supposed to return by road to Pakistan, so we coordinated with federal govt to hold them in quarantine centers at Pakistan Iran border and after following mandatory quarantine period they then be sent to the provinces.

Meanwhile we established a huge quarantine center in Sukkur in newly built labor department flats on war footings in collaboration with Sukkur district administration. Since all these Zaireens were to travel by road from Quetta, Sibbi, Sukkur route in convoys so we planned to accommodate all these Zaireen in our Sukkur Quarantine center. A writ was also filed in Sukkur High court to desist us for establishing the quarantine center in Sukkur. I personally went to Sukkur and met the honorable judges of High court in Sukkur and briefed them that if we did not hold the Zaireen in quarantine center in Sukkur then the whole province would be infected. The honorable High Court endorsed our point of view and the writ was disposed in our favor. Thus around 2000 zaireens arrived Sukkur, we quarantined them there for mandatory period. The fact remains that, it was a huge task to take care of 2000 people at same time, taking care of them daily for their food and medicine needs, but with hectic collective efforts we managed successfully and also completed their testing, and gradually allowing such Zaireen to their homes, who tested negative after spending their mandatory quarantine period.

1.4 Human Resources Issues

Now it's important to mention as how we tackled the shortage and capacity issues of our HR during this emergency. Health Department was already facing shortage of doctors and paramedics since many years because the recruitment of doctors and paramedics was not initiated against the vacant posts. When we opened new isolation wards and quarantine centers, we needed more doctors and paramedics. So, after consultation with my health senior management, for quick hiring I proposed to the minister health and CM to bypass the public service commission rules and hire on contract basis during emergency against the sanctioned posts, for which the budget was already available in budget book. And an urgent meeting of cabinet was called and cabinet approved the subject proposal. Thus, in this way we covered the shortage of HR

and almost 1500 doctors and 2882 paramedics were hired on emergency basis. (Annexure: D). On this, Kazim inquired about the training and capacity building of these newly hired doctors and paramedics.

1.5 Training and Capacity Building of HR

Yes, we again faced the problem of capacity building of not only this new HR, which we hired but also the capacity of the existing HR was not up to the mark, since these doctors were never trained in dealing infectious disease at such a highest scale. Moreover, due to lock down and social distancing SOPs, we could not hold physical training sessions. So, I discussed the subjectissue with my senior Health management and Minster Health and finally we decided to involve Donor agency like WHO and Private sector like Agha Khan Hospital Management for capacity building of our doctors on Covid SOPs, critical care and other aspects of infectious disease management. Thus, these organizations agreed to train our master trainers, senior doctors and paramedics of tertiary care hospitals, subsequently we trickled down online training sessions of concerned doctors and paramedics all over the province. In this way we sorted out capacity building and training issues of health professionals.

1.6 Issue of Testing the Covid Suspects

I told Mr. Kazim that we have lot of public and private laboratories in Karachi to test the samples of Covid suspects, but we were worried about the testing of people in rural areas in interior Sindh, as there were no proper private laboratories and even the public sector laboratories were not up to the mark. I discussed the subject issue with DG health and with other senior health management and we came with the idea that we should involve medical universities and their teaching hospitals, since they have senior faculty and sufficient setup to initiate the process of testing and their labs have also the PCR machines to test the samples of Covid suspects. Accordingly, at the level of Minister Health an urgent meeting was called for VCs and MSs of Medical Universities of LUMS Hyderabad, PUMS Nawabshah and Chandka Medical University Larkana and GMM Medical University Sukkur. They agreed to start the testing after the proper training of staff and provision of testing kits. As per plan in each district the DHO teams collected the samples and sent these samples to divisional level labs of teaching hospitals. In this way we sorted out mechanism of Covid testing in interior Sindh.

1.7 Establishment of Critical Care Units

It was a fact that COVID was a comparatively new disease and we were learning by doing. Initially our focus was to establish as many as ICUs coupled with ventilators, where we could treat critical Covid patients, so we started making clusters of ICUs at divisional level in all tertiary hospitals. Until wereceived new ventilators, we shifted existing vents from district hospitals to tertiary hospitals since at the district level there was no proper expertise to tackle the serious and critical patients.Up on this shifting plan, we faced resistance from politicians in those districts who did not like shifting of vents from their districts therefore we involved the Minster Health and CM to convince these politicians, who finally agreed. So, after hectic persuasion we were able to establish these cluster of ICUs at Divisional Level.

However, as the infection rate increased, we felt later on that these ICUs were not sufficient and were not serving the purpose, because only serious and last stage patients were shifted to these ICUs, where they occupied the beds for longer times and their survival rate was just 10 to 20 %, so it was really a cause of concern for everyone. We discussed the issue with the experts from public and private sector and finally we decided that we need High Dependency Oxygen Units (HDUs) where we would treat the patients and stable their oxygen level. This was again a huge task to establish HDUs in each Divisional hospital for which first we had to setup huge oxygen plants in each hospital and then piping of oxygen gas in the wards. And it was month of Ramazan so availability of labor was also an issue.

Anyhow, we started our efforts and with hectic efforts these oxygen plants were established and these HDUs became functional within one month. On this, the new Secretary Health complimented and said, that, he has visited these HDUs and these were contributing a lot for saving the lives of thousands of patients at the initial stage of their disease and now there is less pressure also on the ventilators.

1.8 Encouraging Health Professionals

Health personnel were the first-line fighters treating patients with COVID-19. Every day, they faced a high risk of being infected and were working in long shifts to cater for the load of health emergency. They were exposed to distress which may exceed further due to the increasing load of work. Also being 8 to 12 hours in PPE suits became physically challenging. With the pandemic of this huge scale the doctors and paramedics were reluctant to perform this risky assignment owing to less availability of PPE material and they did not have the proper training to deal with such infectious

diseases. So initially there was a lot of resistance by the health professionals for joining the Covid duties. Many times, they went on strikes in various hospitals. So, I called the meetings of the doctor's associations and convinced them that their role is very important in saving the lives of the people and their reservations and demands will be fulfilled. So, I got summary approved for their additional health risk allowance and it was ensured that they would be provided the PPE material on priority. By taking these practical steps we encouraged the medical professionals to work with dedication.

1.9 Need for Establishment of Telemedicine Service

We used to advise the Covid patients with minor symptoms to isolate themselves at home and our medical teams deputed at control rooms of DCs and Commissioner office used to call them regularly to know their health condition and in case of emergency connected them with ambulance services and hospitals. But with the rise Covid patients it was difficult to properly follow up all the patients through control rooms, resultantly many causalities occurred and were reported in the media. Worthy CM took serious notice of it and was annoyed on this state of affairs. I discussed the subject issue with the minster and finally it was decided that we should involve the Doctors Association in order to seek volunteer services of doctors for online telemedicine. Subsequently a meeting was held with PMA association and they agreed to provide sufficient number of doctors voluntarily for our telemedicine services. Accordingly, around 100 doctors were trained on telemedicine and they were connected with our dash boards. These doctors regularly coordinated with patients, guided them and linked them with ambulances and hospitals in case of emergencies. Later on, two professional telemedicine organizations also shown interest, and we signed MOUs with them and their doctors located in USA, UK, Australia were connected with our dash board through telemedicine services. Thus the system of telemedicine proved very successful in situations of social distances and lockdowns.

At this the Kazim the new Secretary Health appreciated our prompt response to the Covid-19. He was really impressed on the quick and appropriate action we took during the first spike, then he asked about challenges and failures we faced. I told him that we faced a lot of challenges too, but would mention few challenges over here and propose few recommendations to tackle those challenges in future.

2. Challenges

We as a whole team in Health Department faced many challenges in the community during the response of COVID-19. We partly remained successful and partly faced failure in dealing with these challenges. Some of the challenges we faced are under:

2.1 Involvement of the Private Sector

Initially the private sector was totally reluctant to shoulder the responsibilities with government to fight against the Covid, as they wanted to keep their hospitals free from Covid patients and moreover they did not have the separate proper systems of critical units and high dependency units. Only the Charity hospitals and foundations like SIUT of Prof Adeeb Rizvi and Indus Hospital and Agha Khan Hospital were involved with us to fight against the Covid disease. Since the number of patients was rising so I requested the minster that we should call high profile meeting of the owners of all private hospitals under the chair of the Worthy CM.

Consequently, the said meeting was held and after heated discussions, with reluctance, they all finally agreed to establish the Covid wards and critical care units in their hospitals. After they started to establish the said services, subsequently it was noticed by Provincial Health Care Commission that they were charging too high from the Covid patients and the poor patients could not afford the treatment in these private hospitals. So, on the advice of the CM secretariat, we tried to sign the agreements with some private hospitals for treatment of Covid patients on government expenses but the rates they quoted were very high and some owners have the political connections, media and other agencies highlighted this issue so we could not be successful to sign agreements with them, resultantly only the rich patients who could afford went to private hospitals but the poor people continued to pour into the government hospitals. The Covid crisis in fact exposed the negative role of the private sector and once again the government came as panacea of the poor people in this hour of global emergency. Therefore, there was still need to reform private sector in this regard.

2.2 Coordination Issues with Federal Govt and Other Important Organizations

In such global emergency every important institution tried to play its role, for example, Supreme Court took Suo-moto notice on Covid to check what steps were being taken by Federal govt and Provincial govts. Then, after the 18th amendment the health subject

is devolved to the provinces but the Federal Ministry of Health created coordination body NCOC,which met daily in morning and took daily decisions and sometimes the PM himself presided such meetings. The provinces consider the involvement of Federal government as the interference in their affairs particularly when governments in province and center are of two different parties. Daily online morning meetings under the chair of Chief Secretary were held with NCOC and daily important decisions were taken by us after taking into the confidence the Provincial Task Forceheaded by CM. This was very difficult assignment as CM Task Force sometimes did not agree with the proposals of NCOC. It was also sometimes difficult to convince the Minster Health regarding the decisions taken by the Federal government so we as civil servants continued to face this problem of coordination with the Federal government.

We also got involved the Armed forces as they were also actively involved in other initiatives. With their involvement we established Mega Isolation center at EXPO Karachi. There were lot of coordination issues with them as they always wanted quick fixes and rapid response having different management styles. They generally did not know civil financial rules so they become frustrated, thus we faced day to day tension like situation dealing with them. This coordination problem continued during the first spike owing to different wave length on administrative issues.

2.3 The Fear of Stigma in the Community

We faced a serious issue with regard to reluctance of community for testing. The community especially from rural Sindh felt some stigma with COVID-19 due to the fact that if tested positive, they might be dubbed as "The Risk" for spreading the virus and would be isolated. The main reason for the stigma associated with COVID-19 was that the disease was new and still unknown. And they were thinking that if they were declared positive, they would be forcefully taken to hospitals and their neighbors and relatives would treat them with contempt. We continued to face this problem to convince the people that the testing was beneficial for them and for their families but we failed to do so. The outbreak of COVID-19 created concern and worry among the community in Sindh. People yet not affected were puzzled and afraid. Those affected by the virus were in great panic and fear. We continued to face this challenge convincing the community for cooperation.

2.4 Emergency Procurements

There was a need to establish several thousands more intensive care beds in a very short period of time either to install them in existing hospitals or in new facilities.

Standard procurement procedures (auctions, tenders, deferred payments, etc.) could not be adopted owing to health emergency. Further due to global lockdowns it was very difficult to procure the critical care equipment expeditiously and on competitive rates. It was a crucial decision to save lives and procure costly equipment under emergency clause particularly in a situation when accountability institutions like NAB were critical against the decisions taken by civil servants in good faith. Accordingly, at that time there was a trade off before me as principal accounting officer to save lives and take risk for procurement under PPRA Emergency Clause or other way around not taking risk and delay the procurements.

The department had to make huge procurements in the emergencies. Owing to the accountability scenario prevalent in the country, currently no civil servant in my team was willing to be involved in procurements and they used to delay the decisions. But not taking decisions in such emergencies was tantamount to criminal negligence. So, I called the meeting of my senior team members and convinced them that this is a global emergency and there are provisions in the PPRA for emergency procurement so we should not hesitate and follow the rules and regulation and save lives. But I felt that we faced overall delays in decisions of procurements.

2.5 Political Interface

During this emergency situation there was lot of political pressure on us to show the quick results. It was also very difficult to follow different chain of commands when worthy CM had taken over the day-to-day micromanagement on one hand and it was also difficult to reconcile it with different decisions of Minster Health. For example, daily press conference of Covid situation in province was conducted by CM instead of Minster Health. So, in such circumstances clandestine tensions emerged. Then there were different minsters who have their own different stakes and interests in the situation. Moreover, all MPAs, MNAs and Minsters have their families, relatives and close voters who were also affected in Covid and they always wanted priority and urgent help. I tried to create balance and to remain calm but in sort of emergency it was very difficult to deal with all politicians quickly. So, I felt this problem continued with us during the first spike.

2.6 Media Management

And most importantly how to tackle the exploitation of media particularly when human lives were involved. Media in our country has always played very negative role, created sensationalism and exploited the minor issues and present them in a way to pressurize

the government of the day. Our media is still not mature, even in this sort of human catastrophe, they continued to play a very negative role. Media exploited the minor incidents to huge scale and portrayed that the Sindh Government had failed to protect the doctors.

But I think fault was on our side too, we should have created proper repo with media and should have issued press releases regularly, and the journalists should have been called for the weekly briefings. I myself was not proactive to deal with media and did not keep them on board despite the fact that on daily basis we were taking very important decisions. Therefore, the gap between health department and the Media widened slowly. And ultimately media issued negative news.

2.7 Stress Management

The very important aspect, during this global emergency and war like situation was that how the civil servant should show the leadership qualities and sustain mental stress, their family and personal health issues. There was huge mental and physical pressure as it was round the clock emergency.

In this emergency when there was an immense pressure from all sides, and when the political bosses were expecting early establishment of critical units, and then there was also pressure from media. Moreover, Infront of us, daily people were dying due to Covid. So, in such situation the Civil servants' most important aspect of the job was to remain calm and manage the stress. Because this sort of situation created lot of mental stress and created negative impacton physical health too.

Unfortunately, in my case, I could not make balance between my own health and work and the level of stress rose due to less sleep and no physical exercise, which resulted in poor health.

Owing to weak health and being in the front line, I also was infected with Covid which further deteriorated my health condition. Therefore, it was not possible to continue this hectic job and therefore I requested my seniors for long leave. Thus, despite many successes this personal aspect of stress management was main factor which was neglected and became responsible for my failure to continue with this job and I had to leave the assignment during the crisis owing to my health conditions.

On this Kazim reacted and said that despite these challenges the Health Department was successful in dealing with the first spike of Covid-19. He then asked for future

recommendations for dealing the pandemic successfully. I told him that keeping in view of my experience during the first spike, I would like to propose a few recommendations.

3. Recommendations and Future Health Action Plan

3.1 Stress Management

In such sort of global emergencies, the civil servant's first priority should be to create balance between work and personal health and stress management. The imbalance will dilute the hardwork and efficiency of civil servant, as was in case of mine. This was the only factor which caused failure in my case. So, one should focus properly on diet, exercise and rest and keep cool and calm in such emergencies and make proper balance between work and family.

3.2 Media Management

Therefore, from the very beginning in such situations, one should not be shy with the media since media has right to know about the situation in such a huge emergency. Therefore, they should be kept on board on daily basis and they must be informed about the efforts being taken so that the media may create confidence among masses. We were doing many positive things but these were not visible on media. The media persons have also families and friends they also needed help in such emergencies so there should be close contact with them personally and through PROs who can facilitate them in case of emergencies with their families.

3.3 Political Interface

In the existing situation of pandemic of such a huge scale the anxiety of the political leadership was but natural. There was enormous pressure on them to deal with such an emergency situation so they became panicky and demanded quick fixes and sometimes frictions occurred. In such frictions the Civil servant has to play their role carefully and tactfully. Therefore the civil servants should not lose their temper and deal with politicians with utter respect and also make them realize the intensity of the situation so that in case of delays they do not mind. And in case of frictions between two political forces the civil servant should play the role of bridge and behave neutral on merits and should not take sides.

3.4 Emergency Procurements

Civil servants instead of delaying should take prompt decisions as per law under emergency clauses and if the time permits approval of the cabinet may also be sought for huge procurements. And then it must be ensured that the supplies should properly be distributed and fixed at appropriate places quickly. Accordingly, in the subject case funds were released under emergency clause of PPRA to all big major tertiary hospitals to establish immediately High Dependency Units (HDUs) in Hospitals on war footings. This helped a lot, consequently, in all major hospitals' high oxygen pipeline units along with high dependency units were established without delay. Had this not been done on urgent basis, many precious lives would not have been saved. The lesson learnt is that in such global emergency decision the civil servants should take quick prompt bold decisions in order to save the human lives.

3.5 Encouraging Health Professionals

The health department should start some tangible initiatives to uplift proper physical, mental, and social conditions of medical community, so that medical workers may acquire an optimal stateof health. This may be done by reducing working hours, while increasing rewards and incentives to encourage health care workers through awarding Health Risk Allowances to them.

3.6 To Remove the Fear and Stigma from Community

Health Department should increase awareness about COVID-19 without increasing fear. The department should engage the communicators and public health officials to help counter stigma during the COVID-19 response. Through media campaigns people at large may be educated as how to safeguard themselves and in case of infection they should cooperate for testing and should not hesitate for safety and security of other people. Through telemedicine individual sessions should be started with affected people for their psychological uplift and enhancementof morale.

In the end Kazim asked me about the future plans I would have initiated to combat pandemics in future.

3.7 Upgradation of Pandemic Management Information Systems

A comprehensive dashboard be developed with features of trainings on COVID with added features like monitoring, commodities, and inventory/logistics management into

the dashboard. Aside of this, a planned M&E framework may be formulated with clearly defined key performance indicators and its frequency such as Input indicators (e.g. budgets, human resources, supplies), Process indicators (e.g. training, interventions to review and update procedures, availability of policies and SOPs); Output indicators (e.g. trained health workers, improved procedures, geographical coverage); Outcome indicators (e.g. increased uptake of services, increased knowledge of infectious diseases , behavioral change); and Impact indicators (e.g. improved health, meeting Health related SDG targets). It is also increasingly important to monitor the quality of services and to measure impacts on the health system.

3.8 Infection Prevention through Hospital Waste Management

Then other component to prevent further spread of any infectious disease like Covid is Hospital Waste Management, so we should focus a lot on this in our long-term strategy. The poorly managed health-care waste in health-care establishments contribute heavily in spread of infections. Infectious waste may contain any of a great variety of pathogenic microorganisms like coronavirus etc., which are transferred to indigenous waste disposal system thus contributing to the existing burden of antibiotic resistance in the hospital and community. As a thumb rule 70-90% of the health care institute's waste falls under municipal waste and 10- 30% is hazardous waste. Health care waste includes all the waste generated by health-care establishments and diagnostic laboratories. Hospital produces generally six types of waste which grouped into three major categories such as general waste, infectious waste and hazardous waste. Individuals exposed to infectious and hazardous health-care wastes are potentially at risk, including those within health-care establishments and those outside these sources who either handle such waste or exposed to it as a consequence of careless management. This warrants safe disposal of hospital waste with appropriate segregated storage mechanism and proper disposal.

3.9 Establishment of Dedicated Infectious Disease Control Hospitals

In the long-term plan, it was also felt that and in view of the experience of Covid it is necessary that more proper dedicated infectious diseases control hospitals be established in the province.Once an epidemic is under way isolation accomplishes very little. Infectious Diseases like COVID-19 can make a general hospital very dangerous for its healthcare workers. Further it requires specialized skills with dedicated space to cater the patients. For COVID-19 and other similar infectious diseases, a dedicated large infectious diseases hospital is very essential. The infectious disease hospital should fulfil three important functions, namely, to save life by affording better

treatment than the average hospital, to diminish or control infectious diseases. Therefore, Government of Sindh has to establish a dedicated infectious disease hospital at divisional level.

3.10 Expansion of Telemedicine Services

Health Department should institutionalize robust telemedicine service which would provide telemedicine services from home for non-acute and recovering patients, including the requiredlogistical support for those who are not self-sufficient. This would also create non-hospital based care facilities for those less seriously-ill patients who do not require hospital treatment.

3.11 Upgradation of Diagnostics Services

There is no denying the fact that before Covid the public sector laborites were outdated and inmiserable condition and people used to rely on private labs like Agha Khan labs etc. for their routine diagnostics, so after Covid it was direly felt that the public sector labs may also be strengthened. Biosafety level 3 (BSL–3) labs are basically applicable to clinical, diagnostic, teaching, research, or production facilities where 'work is performed with agents that can lead to potentially lethal disease through inhalation, to the personnel, and may contaminate the environment'. Government of Sindh has to upgrade the existing diagnostic network all over Sindh and in this regard, a comprehensive plan should be formulated. Laboratories in the teaching hospitals should be upgraded up to the BSL-III and each DHQ Hospital should be equipped with BSL-II Laboratory. This upgrade would particularly assure the safety of medicaland paramedical staff. Under planned requirement, BSL-II should be established at 18 District Hospitals and BSL-III at all Divisional (6) Tertiary Care Hospitals.

3.12 Capacity Building of Health Care Professionals

It is also being felt that Health Department has no systematic training institute or academy to continuously train and build the capacity of personnel of Health department on regular basis so in the long term this aspect was also included. Health Department Government of Sindh should convert existing Medical College Project in Landhi into a "Provincial Institute of Health Care Trainings". This institute may be mandated to impart in service trainings to medics and paramedics of Health Department. Besides, this institute would award various degrees up to the level of post-graduation. COVID-19 has exposed that the department faces shortage of skilled health care workers and overall human resource in the province is not sufficient enough to cater the needs of

Pandemic Situation. Thisinstitute would create serviceable human resource for not just the province but for the country at large.

3.13 Diluting Socio-Economic Impact of Pandemic

I told Kazim that as we know pandemics can cause severe, short-term fiscal shocks as well as long-term damage to economic growth. There is lot of literature and history is replete with such sort of pandemics and their long-term socio economic and health impacts on large part of population. This sort of situation was witnessed during the 2014 West Africa Ebola epidemic in Liberia: where pandemic response led to costs surge, economic activity was slowed, and quarantines and curfews reduced government capacity to collect revenue (World-Bank, 2014).

A long term continuous, severe pandemic on the scale of the 1918 influenza pandemic could cause significant and lasting economic damage. This is also now being seen globally but in case of Pakistan due to smart lock down internally there was less effect on the economic conditions as a whole but since we are also depending on global trade so owing to contraction in economies globally there will be negative impact on the economy in long run. The low GDP growth results of Pakistan are in line with country specific estimate of UK, where an analysis of pandemic influenza's found that a low severity pandemic could reduce GDP by up to 1 percent, whereas a high-severity event could reduce GDP by 3–4 percent (Smith, 2009).

The Sindh province in general and Karachi in particular is economic hub of Pakistan. The pandemic has severely hit Karachi so in long term there will be negative impact on tax collection till the situation normalizes. The Sindh Government has recently established Social Protection Unit in Sindh. The Unit in collaboration with EHSAS program may plan short time and long-term poverty alleviation programs for population seriously affected by the pandemic in order to give them space to recover from this socio-economic shock. The Health department should actively engage the Social protection unit for finalizing the community development programs which are in pipeline like 1000 days to be funded by World Bank.

4. Conclusion

Despite the discussed issues and challenges, with grace of Allah we were successful to deal with first spike successfully and we faced less human loss as compared to even developed countries. This was mainly possible owing to the team work with dedication and the proper coordination of the Federal government with provinces and active role

of the political leadership in the provinces. There were many pitfalls in the department like shortage of HR and funds, lack of capacity todeal with pandemics and absence of critical care equipment and concept of telemedicine was almost nonexistent. The pandemic indirectly helped filled the gaps of HR, finances, critical care infrastructure and led the foundation of telemedicine and IT based Dash boards in the department.
As an individual since it was a life time experience, the challenges of pandemic like political interface, media management, public private partnership issues and working under stress was a very learning experience and built my capacities for future challenging assignments and emergencies.

In order to tackle the future spikes, we will have to work with same zeal and zest and focus on establishing institutional frame work for establishing dedicated infectious disease hospitals and prevent further spread of infection through hospital waste management, involve technology to expand telemedicine and establish Health Management Information system through robust dash boards.

In the end I told the new secretary health that, we have almost discussed each and every aspect in detail and this will help a lot in his new assignment and now he can easily make good report on Tackling Covid in Sindh. I wished him best of luck during this second spike of Covid. I hope with these strategies in mind he will successfully tackle the situation.

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