An Approach to Prevention & Control of COVID – 19 : The Bissamcuttack Logic

A Continuum of Needed Interventions : From Community to Hospital and Beyond

Collated by Johnny Oommen for the CHB Task Force and the Christian Hospital Bissamcuttack Family

(Dr Hema Mohanty, Dr Sunil Jiwanmall, Sr Mercy John, Sr Manisha Nayak, Mr Luther Kondpan, Dr Riya Mathew, Sr Prativa Manjari, Sr Shanti Singh, Mr Binay Hial, Mr Suraj Khura, Mr Rabi Singh, Mr Bimal Bibhar)

(For private circulation only – just for sharing with other resource-starved, confused hospitals like us)

PART 1 : INTRODUCTION :

Anticipatory Bail :

This document is only looking at the pure health interventions. It is not covering other critical interventions that are needed such as

- humanitarian assistance, to mitigate the effects of the epidemic per se and the collateral damage of the strategies we choose
- economic interventions to protect the poor and the most vulnerable
- assurance of access to care for all the regular non-Covid needs of people, such as deliveries and emergencies and accidents etc

All this needs to happen in tandem ; but here we are looking at the specific question of a community health approach to the COVID epidemic in a local, rural, under-served area like south Odisha ; where the nearest ICU is over 200 km away ; and the nearest RT-PCR testing is 400 km away.

Also : We still have not had a single COVID suspect or confirmed case ; so this is just Preparedness. Once it begins, we may not have time to write like this.

Background :

CHB is a 66 year old, 200 bedded mission hospital of the JEL Church situated in a relatively remote part of India, the tribal hills of south Odisha. Given the lack of advanced health care in the region, we are normally up to our necks : an average bed-occupancy rate of 105 % for the last few years ; 260 outpatients and 210 inpatients on average days ; 17 surgeries and 12 deliveries per day. The hospital runs on a cost recovery basis ; no-profit-no-loss, and is able to make both ends meet since 1979. We also have a College of Nursing, a Lab Tech training school, an English Medium School, a Community Health program in 54 villages, and a residential school for tribal children. For all this, we have a total of about 350 staff, including 18 doctors and 170 in the nursing dept.

To the best of our knowledge, COVID has not yet got here. But reported cases have started rising in our state, including one reported from our neighbouring district. Since testing is minimal, the actual situation is unknown. My guesstimate is that suspect COVID cases will start coming in by 10th April or so, and the epidemic may peak by end April or mid May. We hope we are wrong.

But we do not have the luxury of swallowing the half-baked theories on great Indian immunity and hot summers protecting us. Our numbers as a country are probably low as yet, because our launch date is later than China, Europe

and USA, and ahead of Africa ; and because we do so little testing. We are allowed to hope for the best, but we have to prepare for the worst.

Let us share the things we are doing as part of our COVID Preparedness and Response initiative and lessons learnt so far.

The Continuum Approach : The Links in the Response Chain

A. Reduction of Transmission Pressure through Community Interventions
B. Large scale testing to identify infected persons and contain infection ; and to provide epidemiologic information for evidence based strategizing.
C. Hospital Based Interventions to provide care for those who need it, with systems for risk reduction to staff and to decrease risk for cross-infection between patients and families.
D. Preparation for and management of deaths : managing bereavement ; managing dead bodies and last rites.

PART 2 : INTERVENTIONS IN THE COMMUNITY :

Aim : Reduction in the Proportion of Population that is infected at any given time (flattening the curve) through reduction of transmission pressure and viral load in the environment.

The Math :

A Block has about 100,000 people : The predicted math is as follows :

If 50% are infected, that is 50,000; 10,000 (20%) may need hospital treatment; upto 1000 (2%) expected deaths

If 25 % are infected, that is 25,000 ; with 5,000 needing hospital treatment, and 500 deaths

If 10 % are infected, that is 10,000 ; with 2,000 needing hospital treatment and 200 deaths

If 1 % gets infected, that is 1000 ; with 200 needing hospital treatment and 20 deaths.

Everything depends on the Infection Rate especially as treatment capacity is very limited.

Key Interventions :

1. **Education / Awareness Campaign, focused on key Behavioural Changes needed such as :**

    a. Physical Distancing : Try to keep 2 metres apart ; Avoid crowded situations ; Avoid unnecessary physical contact.
    b. Hand-washing with soap and water, repeatedly, frequently and properly
    c. Mask for All : A people's movement, where everybody wears a mask (home-made or commercial) when outdoors ; and even indoors if they have cough or fever.
    d. Avoid touching one's face
    e. Cough Etiquette – using one's elbow to limit the spray when one coughs or sneezes
    f. Stop spitting all over

2. **A Mask For All campaign** that enables the community to stitch masks for all the members, possibly supported and guided by CBOs or panchayats or NGOs if needed. Each person ideally needs two re-usable, washable masks that can last for 4 months. We have targeted 23,000 people living in the region around us for supply of a cloth mask and advice on how to use them. This is run as a community campaign involving local youth volunteers, tailors, housewives who know how to stitch etc (See separate document on Mask For All and the 7 points of instruction to be given when handing out the masks). Any person going to a hospital should definitely wear a mask before setting put from home.

   (The primary purpose of a home-made cloth mask or face cover is to provide an outward barrier covering the nose and mouth of the unknown infected persons, including children, who could be asymptomatic or pre-symptomatic, and yet dispensing infected droplets while exhaling, speaking, coughing or sneezing. The secondary benefits are the inward barrier for what it's worth over the uninfected person's nose and mouth, and thirdly, the fact that we tend to touch our faces less if we are masked.)

3. **Home Quarantine (or Community-Based Institutional Quarantine) – 14 days**

- For people with history of travel to or from areas that have more Covid infections

- For people with fever, dry cough or breathlessness and are not very sick ; to wait out the symptoms as 80 % of the infected will not need to go to a hospital or require any treatment.

Remember that those on quarantine are also our people, not criminals or villains ; so this should ideally be done by the traveler himself or herself, out of love for their family members and community ; and therefore treated with respect, sensitivity and provision of basic amenities like food and shelter.

Outcome Indicator : Percentage of Population with Active Infection at any given time

Don't worry that you cannot measure it ; chase it anyway.

PART 3 : IDENTIFYING THE INFECTED : TEST, TEST, TEST - IN THE COMMUNITY AND IN INSTITUTIONS :

The next link in the chain is Diagnosis ; testing both for individual diagnostic and for epidemiologic trend analysis. This could be community based or hospital based. The current limitations are :

a. The Tests available so far :

   - The RT-PCR available at present has limitations of availability, sensitivity, cost, lab requirements, time delays etc. These are not accessible to us now.
   - The Antibody tests seem to be easier to use at point of care, but are useful only 7 – 9 days after infection. They would still be of use for diagnosis in areas like ours with no access to RT-PCR, but they would have even greater value to be used for socio-epidemiologic studies to indicate prevalence, burden and trends.

b. The policies that dictate and restrict who can test, where, why – and who can be tested : criteria that exclude almost everybody outside the urban areas, and so on.

This is a major lacuna in our present situation as we do not even know if it has reached our region. Odisha has no cases reported as yet from 25 out of 30 districts. **But the absence of evidence cannot be taken as the evidence of absence**. I hope the Antibody Detection Rapid Kits will provide some light…. And soon.

PART 4 : INTERVENTIONS IN HOSPITAL :

In the few hospitals available in rural and tribal areas, even in normal times we are short of required people, equipment, protocols and systems. We are constantly multi-tasking, multi-skilling, making do with what we have, practicing jugaad to an art form – this is our strength and our weakness ! COVID is occurring over and above this reality.

We have three aims at the hospital space which can contradict each other in specific situations :

1. To save lives by being able to provide competent and caring health care to every patient who comes in, whether they be for general health needs such as deliveries, appendicitis, diabetes, hypertension etc or for COVID-related ailments ; or a combination of the two.

2. To protect the health team (all the staff of the institution) from risk of COVID infection, complications and mortality.

3. To minimize the amplification potential of transmission pressure of hospitals that operates through cross-infections due to concentration of the potentially infected and the already vulnerable in limited space.

Even in the most developed of countries, systems are inadequate to do all three. And even they are short of adequate PPE, Ventilators and other much needed equipment. Ours is a totally different world. In our understanding, what is doable are the following :

a. Education and Training of all Staff of the Hospital :

Every member of the team needs to be part of the solution, or else they will be party of the problem. This requires sessions to be taken for multiple groups to get a basic understanding of the disease, the transmission, prevention etc. Specific sessions are needed for technical staff on diagnosis, treatment, use of PPE etc. Over and above this, we have a daily Staff Update on data trends, but also to keep everybody in the loop and motivated.

b. **Reduce Transmission Pressure on hospital campus** by pushing strict compliance with
A. Social Distancing,
B. Hand-Washing from entry point and while on campus ;
C. Mask For All from entry gate onwards ; nobody allowed on campus unless they are wearing a mask ; a supply is available for a contribution of Rs 10.
D. Hospital Disinfection

(Please see our CHB Hospital Notice to Public dated 5th April 2020)

c. **Re-Organise the Hospital** : They divide hospitals into COVID and Non-Covid Hospitals ;if we don't have that luxury, we divide the existing hospital into COVID zone and Non-Covid Zone, remembering all the time that this is actually a line drawn on water, and any patient or staff in either zone could be infected. Therefore the answer is Universal Precautions, but with far more stringent processes and provision in the higher risk area of the COVID Zone.

We have divided our available area into :

i. Entry Point and Entrance Protocol : Wash Hands, Wear a Mask and Triage

ii. Fever & Cough Clinic – fast-track clinic for anyone with fever and cough, where all services are at one counter including registration, examination, lab tests, portable xray, medications. This is set up close to the entrance to avoid people having to go further into the campus. It is manned by a senior doctor and a senior nurse, with home-made PPE as available and provided HCQ prophylaxis, who are supported by Nurses and Attendants outside the clinic.

iii. General Hospital – including emergency, wards, theatres, labour rooms etc

iv. Isolation Ward : This is consists of 2 single rooms, which can be increased to 7 and if needed 24 single rooms. If numbers increase, this will be made into double occupancy rooms for 48.

We have created a Staff Care Facility in the Isolation Ward area, with a rest room, geyser and bath facility, washing machine for work clothes used etc. One staff member is there to assist the Isolation team members in getting in and out of PPE. There are also 4 single rooms adjacent to this section, which could be accommodation for staff working in the Isolation Ward who cannot go home after work.

The Isolation Ward is divided into two areas : High Probability of COVID and Low Probability of COVID. We realise these are artificial divisions that the virus does not recognise, but they are still needed to know where to admit which patient.

(Please note : We have not yet had a single COVID-like patient yet, so we are still hypothesizing)

d. **The Levels of Care for COVID patients :** (Our own categorization)

Level 0 : Triage and a Fever & Cough Clinic – that provides OPD level treatment to this segment. They may include some COVID patients and some non-Covid patients with a wide range of problems like TB, Malaria etc.

Level 1 : Institutional Quarantine and treatment of mild suspect cases : These are patients who do not actually have to be admitted for their Covid-related problems ; they should be on Home Quarantine. But they are here because Home Quarantine is not possible or because they have some other medical problem such as Pregnancy with hyperemesis, and history of travel to Delhi in the last two weeks. Patients here are basically on a two-week quarantine and some simple treatment as needed. We have had only one patient in this area so far.

Level 2 : Suspect COVID patients admitted for treatment of pneumonia, hypoxia etc ; care is possible including antibiotics and upto oxygen therapy.

Level 3 : Intensive Care with Ventilators etc. We do not have this capacity and there are no referral centres within 200 km, and anyway the outcomes we see for patients with COVID on ventilators are not very encouraging either.

e. PPE and other needed materials :

a. Access to formal, recommended PPE ; We are in the wrong part of the country for this. We have placed orders for much material, but nothing can reach us due to the lockdown. So until then, we have to innovate.

b. We have our own CHB Production unit run by staff who volunteered to help. They produce a range of products :

- Level 1 Masks : Single layer cotton cloth masks – for non-Covid patients and relatives ; we plan to upgrade this for inpatients.

- Level 2 Masks : Double layer cotton cloth masks – for staff not in patient care areas

- Level 3 Masks : two outer layers of cotton cloth with a Polypropylene layer in between – either one layer of 90 gsm or 3 layers of 25 gsm (acquired from a Bag Making Factory that went kaput just in time for us)

- Polypropylene Gowns, head covers, shoe covers etc designed y trial and error and role plays, and made by our staff tailors.

(See our video on our earlier mask productions at https://youtu.be/NzxmN1QboIo)

c. Other things we have started stocking up for just in case :

i. Hand Sanitiser
ii. Rectified Spirit – for making our own sanitizer when the commercial one runs out
iii. 100 Plastic Rain Coats as substitute PPE if needed
iv. Drugs : Hydroxychloroquine, Chloroquine, Azithromycin – we have not yet got antivirals
v. Oxygen supplies
vi. Sewing machines and over 300 metres of cloth for making masks, gowns, scrubs etc

PART 5 : PREPARATION FOR AND MANAGEMENT OF DEATHS :

This is something we hear nothing of as yet in the Indian discussions. And while it is an unpopular and scary thought, as hospital leaders, we need to prepare. The least we can do is buy body bags if available or at least thick plastic sheets. Book the expense under some other name to avoid creating panic in the team. But buy it anyway.

And given our poly-cultural, multi-religious neighbourhoods, we will need to plan for cremations and/or burials – hopefully just a few ; but possibly many more.

PART 6 : CONCLUSION :

There are many other challenges we have to cope with. They include :

1. **A Core Team for Managing the Effort** : On 17 March, we constituted a 13-member Task Force to think through, guide and drive the preparations. This includes 4 doctors, 4 nurses, the Administrator, Head of Purchase, Pharmacist, Head of Lab Sciences and the person in charge of Maintenance. The team meets every alternate day and more often if needed. We type up minutes and share it on the Task Force Whatsapp Group as soon after as we can so all are in the loop and chasing the decisions taken. This group also handles our responses to all the Government directives for information and compliance.

2. **Staff Morale and Team Spirit** : We cannot blame anyone who wants to resign and leave in the face of the impending risk, but it makes it hard to strengthen the resolve of the rest of the team. We have to lead from the front ; not be being foolishly heroic, but by pretending to be brave and strong, even as you factor in the worst case scenarios and precautions to be taken. Crisis also reveals character – in each of us.

3. **Financial Challenges** : For a hospital that runs totally on just what the patients can pay, the Lockdown and the COVID psychosis have reduced patient number sand income to less than 50 %. We need reserves to survive. We have assure d the staff that come what may, we will pay salaries on time – even if we wipe out our savings in the process. And PPE et al don't come cheap. **We are very grateful to our good friends at the Azim Premji Philanthropic Initiatives,** that has so kindly allowed us to re-purpose a grant given for another project to be utilized for this far more urgent need of COVID Preparedness and Project. It has given us the courage to do what needs to be done and take the risks of ordering much needed stuff even when the transport is still uncertain.

4. **Hospital Disinfection** : Hospitals of the poor are never the spic-and-span, TV-ready models ; they are people friendly, crowded and messy. We are now forced to clean up our act and disinfect the hospital surfaces with Sodium Hypochlorite every day – as many times as is possible to sustain. That in itself is a tough act and needs a dedicated team to make it happen.

5. **The difficulty of Uncertainty** : We look at every patient with suspicion. Even a woman in labour can be a source of infection. Or maybe her husband outside the Labour Room ? How does one then care and serve with love ? How do you balance Patient Care needs with Staff Protection needs ? How do you balance the need to save lives with general health care even while we prepare for a probably OCVID onslaught ?

6. **Dealing with Government Directives and Demands and Media and other Distractions** : Preparing the hospital for COVID is tough enough. On top of that, is the challenge of coping with the lockdown, severed supply lines, claustrophobic children etc. And over and above that, is the need to keep up with multiple demands for information, training webinars to be attended without fail, threats from misled and scared public, media out to get a byte (bite !) out of you, and so on. Not easy. And this is before the first case has even come in !

But……Is it all gloom and fear ?

No.

There are so many lessons learnt.
The value of many people we barely noticed before.
The sincerity and hard work and creativity of many team members.
The forgetting of so many divisive issues as we unite for a cause bigger than us.
Team spirit.
Love and encouragement of so many.
Realising many of our weaknesses are also our strengths – like the resilience and creativity that comes from poverty of resources.
Finding that the old-fashioned, single-storey, spread-out, sun-dried hospital structures could be a major asset compared to the closed, air-conditioned ICUs that nurture infection.
But also our own discovery of ourselves, our facing up to our fears, and our finding that we have feet of clay.

What keeps one going, when the stakes are so high and so many look up to you and need to lean on you ?

This is when our spirituality has to kick in.

When we recognise the Divine ; God, who is, and understands, and walks with us. In whom we live, and move and have our being.

God is good.