The COVID19 pandemic and some thoughts for resource limited settings

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ICMDA

Overview

- Prevention
- Mitigation by early diagnosis and quarantine
- Health care systems to treat
- Concluding thoughts

A. Prevention

FLATTENING THE CURVE…

The core strategies being discussed

Social distancing

Hand Hygiene

Test test test

Isolate, quarantine or refer

Respiratory Hygiene & Masks

Social distancing and Lockdowns…

Social distancing = Lockdown and restrict all to home

Social distancing in cities where 30 – 40% live in urban slums and or resettlement colonies with no space to distance?

Social distancing in villages where there is a single or two room house with 5 – 6 people living in the same room?

How long….?

How long?

WILL LOCKDOWNS AND SOCIAL DISTANCING ALONE WORK?

Health care systems, testing etc., unlikely to change fast….

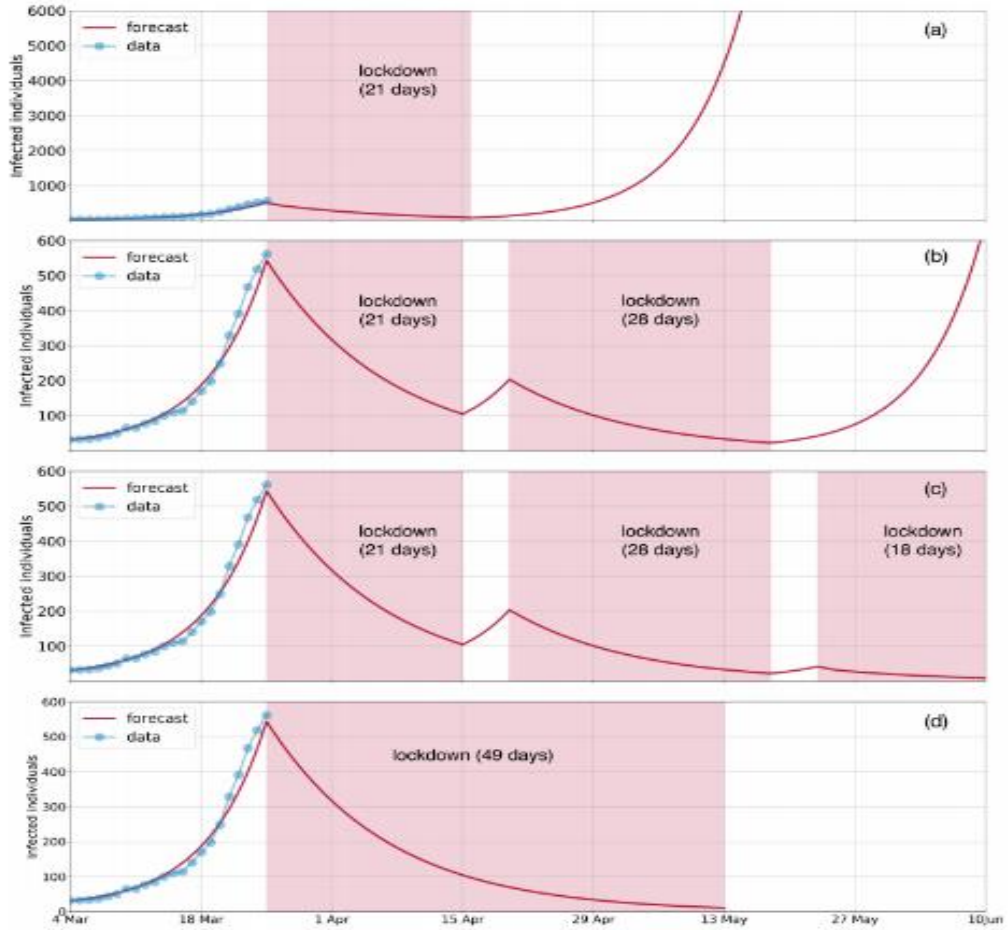


Figure 4. **Forecast of the COVID-19 epidemic in India with mitigatory social distancing.** Each of the four panels shows the variation in the number of infectives with lockdowns of various durations. The three-week lockdown starting 25 March does not prevent resurgence after its suspension as shown in panel (a). Neither does a further lockdown of 28 days spaced by a 5 day suspension, shown in panel (b). The protocols in panels (c) and (d), comprising of three lockdowns with 5 day relaxations and a single 49 day lockdown reduce case numbers below 10. This forecast is based on all cases being symptomatic so $\tilde{\alpha} = 1$. The fit parameter is $\beta = 0.0155$ and we set $\gamma = 1/7$.

Expert opinions emerging from research institutions based on "modelling"

The elderly

People with co-morbidities

The Disabled

Others?

Table 1. Options for housing high-risk persons into designated 'green zones'.

Option	Description	Applicability	Notes
1. Household-level shielding	Each household demarcates a room or shelter for high-risk members. If necessary, a carer from the household is isolated with them.	Settings with multi-shelter compounds or multi-room houses.	Likely preferable to families with space available but also more likely to be 'leaky' if isolation is not strictly enforced.
2. Street- or extended family-level shielding	Neighbouring households (e.g. 5-10) or members of an extended family within a defined geographic locale (neighbourhood, district) voluntarily 'house-swap' and group their high-risk members into dedicated houses / shelters.	All, but especially urban settings.	Infection control and social distancing measures would also have to be strictly observed within each green zone.
3. Neighbourhood- or sector-level isolation	Sections of the settlement are put aside for groups of high-risk people (e.g. 50-100).	Displaced persons' / refugee camps, where humanitarian actors can provide supportive services and smaller scale isolation is not possible.	Ideally located at the periphery of camps to facilitate such measures. Infection control and social distancing measures would also have to be strictly observed within each green zone.

But will this really work?

The “Red zoning” of infected, the “Green zoning” of the vulnerable

The “Blue zoning” of economy drivers while rest are zoned off?

The “high prevalence based” lockdowns? – Where few numbers have been tested?

All these only when lock-down gets over – will it be too late by then?

Others

Or universal hand wash hygiene and respiratory hygiene?

But hand washing with no “running water” – what options?

Respiratory hygiene in crowded dwellings?

Universal mask use as an alternate option? – but how?

The impact of “lock downs” and mandatory social distancing?

60- 80% of rural communities – migrant laborer’s – caught between temporary homes and permanent ones – with jobs lost

Many in “protection centers” – protecting whom?

30 – 40% of urban communities in slums and resettlement colonies

Economic

Food security

Morbidity due to in-accessible health care

Mortality due to non COVID19 illnesses

A true reality

"This whole pandemic apart from exposing the frailty of our 'powerful' in our nations and the cracks in our society between rich/middle class & the poor, the organized labour & the migrants, urban & distant rural, it also exposes the 'poverty of our churches.' We are busy encouraging the flock at this time of social distancing (important primarily for the middle/rich). It not only shows we are out of depth in offering a perspective to this new situation but more importantly that we are 'absentees in the public domain' — no one is even missing us (no surprise)." (Jayakumar Christian)

The desire – the “us” and the “them”

“US” - CONTAIN THE EPIDEMIC

The priority – with good intentions

- Social distance
- Wear masks
- Wash hands
- Protect the vulnerable

“THEM” - PROTECT THEMSELVES

The priority

- The food for today
- The money for today
- The job for tomorrow
- Desire to somehow reach their homes (stuck in urban slums or half way protection camps)

What is our role?

Do “we” tell “them” what to do? Or do we come alongside and support in finding the right answers?

WE THINK WE KNOW, BUT THEY KNOW BETTER!

Cultivate a “listening community” and not give “technical answers” only!

TO LISTEN TO THE VOICES THAT ARE UNHEARD AND SUPPORT THEM TO PROTECT THEMSELVES AND SET UP SYSTEMS OF PREVENTION

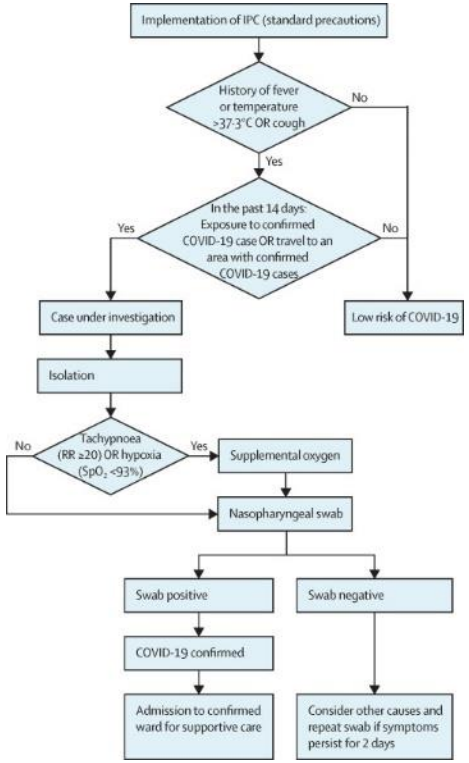
B. Mitigation by early diagnosis and quarantine.

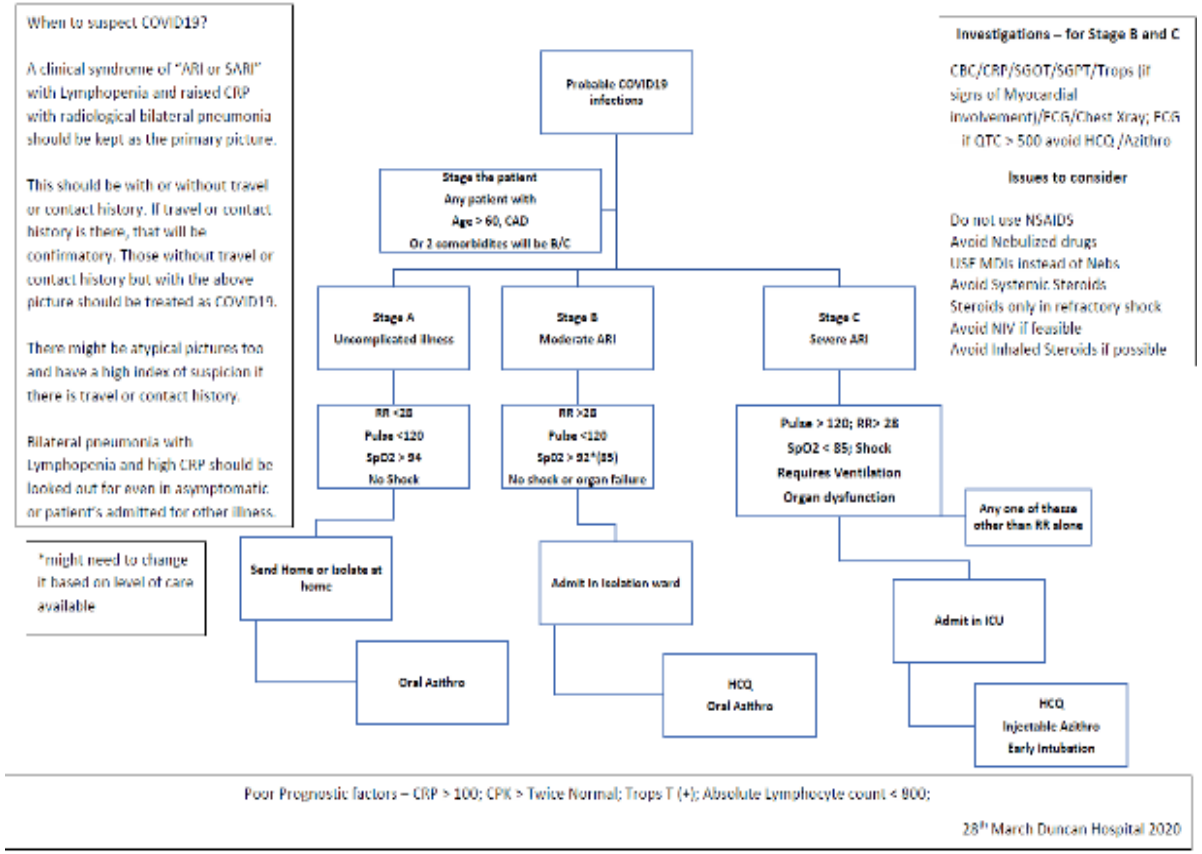
TESTING WHERE THERE IS NO TESTING!!!

Where testing is a dream!

CLINICAL PROTOCOLS FOR DIAGNOSIS?

PRESUMPTIVE TREATMENT AND ISOLATION OR QUARANTINE?





Some examples

A recent article

Mandatory criterion

Fever of 3 or more days duration without other obvious localizing symptoms (such as dysuria, skin or soft tissue infections)

Epidemiologic setting

1. Travel within the past 4 weeks to or from any other country or a big city in India
2. Visit within the last 4 weeks to a crowded place (bus stand, railway station, movie theatre, airport, place of worship etc)

Major criteria:

1. Dry cough
2. Anosmia or loss of taste of recent sudden onset in the absence of nasal block
3. Findings such as crepitations on chest auscultation
4. Chest X Ray showing peripheral patchy infiltrate (not lobar pneumonia or cavitating lesion)

Minor criteria

1. Diarrhoea
2. Severe Body aches (Myalgia)
3. Normal or low normal total WBC count & lymphopenia (Lymphocytes < 20 % on Differential count)

In the presence of the mandatory criterion,

1. Presence of 1 epidemiologic setting along with 2 major criteria or 1 major criterion and 1 minor criterion can be considered to be the clinical syndrome
2. Even in the absence of the epidemiologic setting, the presence of 2 major criteria and 2 minor criteria or one major criterion and 3 minor criteria can be considered to be the clinical syndrome.

Therefore we can consider 2 groups of subjects as having the COVID 19 syndrome. 1. Cases confirmed by laboratory tests 2. Cases which fulfil criteria for clinical syndrome in the absence of laboratory confirmation.

Some other questions

C. Self isolation vs mandatory quarantine

- Red zoning – what about stigma?
- (People who have not been allowed in homes those who have come from cities/Hospital staff are being thrown out of homes)
- Will the support reach the zoned?

D. Support to green and red zoned people

- Home visits and support?

Our role to come along side families/homes, (or get in touch) and be there.

THAN PROVIDING A SET OF STANDARDS THAT ARE UN-ATTAINABLE?

AN ACCOMPANYING COMMUNITY

TO BE THERE TO SUPPORT AND WALK ALONGSIDE, HOME VISITS, SUPPORTIVE CARE AT HOME – A HOME CARE PROGRAM

C. HEALTH CARE SYSTEMS TO TREAT

Evidence emerging for the 5 – 7% of those who need critical care

WHAT ABOUT THE REST 93 - 95%?

What are we being told?

Set up COVID19 hospitals

Close down regular work

Provide home based refilling of prescriptions

Mobile services for regular medical problems

Have full PPE systems in place

Where basic health care systems do not function optimally

Where access to regular health care itself is difficult

Where the morbidity due to non COVID19 illnesses are very high

Where none of these are feasible due to resource or systems issues

Hospital based care for the moderately and severely sick

Triaging and ARI clinics

SARI section in emergency.

A respiratory isolation section

- HDU/ICU
- Open wards
- Rooms
- Graded or levels of protection for staff and relatives with custom made PPEs,

PPEs and other requirements

PPEs based on levels of care			
Level of care	Principles of protection	Procedures to avoid	Suggested PPEs
ARI OPD	Respiratory droplets, fomite transmission	Throat examination, suction, any other procedures	Double gloves, Surgical mask, Goggles, surgical gown
SARI Emergency	Respiratory droplets, fomite transmission	Suction, NIV or intubation	Double gloves, Surgical mask, Goggles, surgical gown, head cover
Respiratory Isolation section			
Open wards	Respiratory droplets, fomite transmission	Suction, NIV or intubation	Double gloves, Surgical mask, Goggles, surgical gown, head cover
Isolation rooms	Respiratory droplets, fomite transmission	Suction, NIV or intubation	Double gloves, Surgical mask, Goggles, surgical gown, head cover
HDU	Respiratory droplets, fomite transmission, aerosol producing procedures like suction	NIV and Intubation	Partial PPE including surgical gown/Suits, goggles, head cover, etc.
ICU	Respiratory droplets, fomite transmission, aerosol producing procedures	NIV	Full PPE including suits, goggles, head cover, etc.

COVID-19 Respiratory Critical Care Escalation Decision Model

	Normal Capacity	Moderate Capacity	Limited Capacity
Fit and well patient	Early ICU referral[1] and early consideration of intubation and ventilation	Early ICU referral[1] and early consideration of intubation and ventilation	For full escalation to ICU but may need HDU/ward trial of NIV[2] initially
Patient with significant co-morbidities	Early ICU referral[1] and early consideration of intubation and ventilation	Ward trial of NIV[2], consideration of intubation and ventilation or ceiling of care	Ward trial of NIV[2], early recognition of futility and palliation
Frail patient or with end-stage co-morbidities[3]	Consider HDU referral for *reversible* single organ dysfunction	Ward-level care, early recognition of futility and palliation	Palliation

All admissions require early GIM Consultant treatment escalation decision-making (post-take ward round), incorporating patient wishes and likelihood of benefit, with early recognition of futility and resuscitation status (CPR is very high risk).
Escalation decisions require use of clinical judgement on a case-by-case basis.
GIM Consultants should identify those patients in green and red categories; ICU Consultants welcome referral and assistance in making decisions around those in yellow categories, dependent on availability.
Early data from Wuhan, China (small sample size = 10) suggests critically ill patients >70 years old with positive COVID-19 have a very high mortality ~90%.[4]

[1] "Early ICU referral" = FiO_2 >60% to maintain saturations >92%, respiratory rate >30 or other organ dysfunction.
[2] "NIV" = non-invasive ventilation, primarily continuous positive airway pressure (CPAP) in the context of COVID-19 ARDS and type 1 respiratory failure, but may require bi-level NIV.
[3] "End-stage co-morbidities" may include:
(Metastatic) cancer, unstable angina, heart failure, COPD with poor functional status, diabetes with multiple complications, dialysis-dependent CKD, significant cognitive decline etc.
[4] https://doi.org/10.1016/S2213-2600(20)30079-5

Critical care decisions

Should we have much more stringent criteria?

COVID19 Critical care decision making model			
	Enough critical care beds, ventilators and PPEs with trained staff	Less than optimum critical care beds or ventilators or staff but can expand if required	Limited number of critical care beds and trained staff
Fit and well patient, below 60	Early Critical care referral and early consideration of intubation and ventilation	HDU or ward trial of High flow oxygen and consider intubation and ventilation	HDU or Ward level care with High flow Oxygen and ceiling of care
Patient with multiple co- morbidities	HDU or ward trial of High flow oxygen. May consider intubation and ventilation	HDU or Ward level care with High flow Oxygen and ceiling of care	
Above 70 and / Or with multiple end-stage comorbidities			
CPR - high risk. Escalation decisions should be taken case by case. Definition of elderly might have to be considered based on context and social factors. (>70 high mortality)			
Early Critical care referral - FiO2 >60 to keep Sats >92 or, RR >30 or organ dysfunctions			
Multiple end stage co-morbidities: CAD; COAD with poor functional status; Heart failure; Malignancies; DM with multiple end organ damage; ESRD; Significant cognitive decline			
Adapted from model developed by Dr. James Haslam UK			

Constraint in all Settings:
High Flow Oxygen Supply
For Palliation – Adequate Supplies & Training

In rural areas for the poor – anyone above 65 – to 70 with multiple co-morbidities are usually not offered critical care due to limited facilities

What is our role if such a context arises?

We should strengthen our palliative care systems

TRAIN, PLAN, REPOSITION TEAMS

The mental health of everyone – who will take care of this?

RAISE AN ARMY OF COUNSELLORS

A caring community – plan for tomorrow when the burden of care increases

EXPLORE LOCALLY RELEVANT STRATEGIES

Continue to cultivate a sound mind - *sophronismos*

"SELF-CONTROL" (ESV),

"SELF-DISCIPLINE" (NIV, NLT),

"DISCIPLINE" (NASB),

"GOOD JUDGMENT" (GW),

SOUND JUDGMENT" (CSB).

A MIND UNDER THE CONTROL OF GOD'S HOLY SPIRIT.

CAREFUL, RATIONAL, SENSIBLE THINKING.

AND SUPPORT TO INNOVATE

HTTP://CMAI.ORG/INNOVATIONS

Recognize who the most vulnerable are – and explore how to support them…

INNOVATIVE WAYS

Summarizing

Cultivate a “listening community”

- To listen to the voices that are unheard and support them to protect themselves and set up systems of prevention

An Accompanying Community

- To be there to alongside through home visits, and or other ways of accompaniment – A home care program?

A caring community

- We should strengthen our palliative care systems
- Raise an army of counsellors

An innovative community

- Innovate to support the most vulnerable in our midst

BE A PROPHETIC COMMUNITY

BY BEING A LISTENING, ACCOMPANYING AND CARING COMMUNITY….AND USE TECHNOLOGY TO DO THIS!

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