

## Original Study from initial data of ongoing study

Title :How safe/ unsafe to allow Home Quarantine of covid19 positive for themselves and their immediate contacts: A study within Home Quarantines of Kamrup Metro, Assam

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## Introduction

Till date 23000 polulation within Guwahati Metro have been in Home Quarantined and 19000 completed the mandatory period. Under certain conditions persons are allowed to directly isolate at home by Government of Assam. Assam Police is currently taking voluntary participation of civil society to help them to monitor the people under quarantine . The Pratishruti Cancer and Palliative Trust conducting the monitoring of Home quarantines and educating them on quarantine rules and at the same time providing psychosocial counseling by experts , Offering Telemedicine consultations of those with health issues and providing regular ration requirement data and SOS inputs in emergency . All requests used to routed to District Administration through Assam Police.

Those people directly quarantined at Home used to get Covid swab reports after 4 to 14 days and in positive cases it is generally less than 10 days. Transmission of SARS-CoV-2 can occur through direct, indirect, or close contact with infected people through infected secretions such as saliva and respiratory secretions or their respiratory droplets, which are

expelled when an infected person coughs, sneezes, talks or sings<sup>1</sup> We wanted to understand whether during this waiting period till they receive the reports already spread to another person living closely with them at home environment and what were the probable high risk behaviour. The aim was to understand

‘How safe/ unsafe to allow Home Quarantine of covid19 positive for themselves and their immediate contacts’

This will result into significant clarity Of following issues

- I. Is it safer for covid positive persons to be home quarantined,?
- II. Whether the family members have increased risk of getting infection ?
- III. What is the relation of symptomatic/asymptomatic cases and subsequent positive members in the family?
- IV. Whether presence of co morbidity is associated with presence of severe symptoms
- V. Whether common toilets and spread to close contacts have independent relation to transmission

Study population: Home quarantines of Kamrup Metro

Inclusion Criteria : Confirmed covid 19 positive cases by RT-PCR who consented to participate in the study

Exclusion Criteria: Who declined to participate

Materials: 2 sets of Quarantionaire tool with performa in google real time form submission at ‘docs.google.com’ and data collection. One set general performa for all quarantines and one only specific to covid 19 positive

Methods: Volunteers involved with Pratishruti Cancer Cancer and Palliative Trust with this project of Assam police initially identified covid positive persons during distant monitoring over phone and video call . Then Investigators spoke to covid positive persons to get further medical history and other data along with verbal consent of participation in the study . The investigators continue to follow up till last RT PCR reports and exchange of reports through whatsapp of immediate contacts at home.

Results:

Parameters	Numbers	Comments
Total cases covid positive	94	
Symptomatic	18[19%]	Found in quarantine confirmed by RT-PCR

Asymptomatic	76 [81%]	No change of their normal well being till 14 <sup>th</sup> day
Evidence of transmission case to family members	4[4.2%]	Mild symptoms -fever cough sore throat, malaise, diarrhoea
Total persons with co-morbid conditions	26%	High BP, Cancer,Diabetics, Liver ,Heart disease
Days required to receive PCR reports	4-10 days Average 7 days	Equal to total days of exposure to family members
Intensive care required during Hospital stay	Nil	All symptomatic cases were treated by paracetamol, cough serups and vitamins
Age groups <20 years 21-30 years 31-40 years 41-50 years 51-60 years >61 years	5.7% 35.7% 26.6% 18.9% 9.0% 4.1%	81% cases with 20-50years age group
Agencies quarantine facility positive cases [CRPF,BSF, ITBP etc ]	35 cases [37%]	21 cases tested positive only in second test

## Discussion

The common symptoms among symptomatic cases were cough fever sore throat, malaise, diarrhea headache etc and no cases had any breathing difficulty in our study . They all were cared in covid care centers or in hospitals however non of the cases required intensive care. SARS-CoV-2 transmission appears to mainly be spread via droplets and close contact with infected symptomatic cases.<sup>1</sup> One of the biggest concern and confusion of covid 19 virus is extremely high infectivity rate . Four individual studies from Brunei, Guangzhou China, Taiwan China and the Republic of Korea found that between 0% and 2.2% of people with asymptomatic infection infected anyone else, compared to 0.8%-15.4% of people with symptoms.<sup>2,6,7,8</sup> systematic reviews suggests that individuals without symptoms are less likely to transmit the virus than those who develop symptoms.<sup>1 2,3,4,</sup>

There were series of debate whether asymptomatic cases spread to others or not. Transmission from infected people without symptoms is difficult to study<sup>1</sup> Definition of asymptomatic means no symptoms or physical discomfort experienced by covid test positive person in entire duration of 14 days of quarantine.Once World Health Organization commented that aympotomatic doesn't transmit and then later changed the stand. This was arose due to some studies did not clearly describe how they followed up with persons who

were asymptomatic at the time of testing to ascertain if they ever developed symptoms. Others defined “asymptomatic” very narrowly as persons who never developed fever or respiratory symptoms at a particular point of time, rather than as those who did not develop any symptoms at all.<sup>14,15</sup>

In an analysis of 75,465 COVID-19 cases in China, 78-85% of clusters occurred within household settings, suggesting that transmission occurs during close and prolonged contact.<sup>13</sup> A study of the first patients in the Republic of Korea showed that 9 of 13 secondary cases occurred among household contacts.<sup>16</sup> Our study shows very small percentage of transmission 3.4 % [ 3 cases] within house hold setting as 4<sup>th</sup> case was not in household setting. Index case means first case detected in the family and transmission from him to others was confirmed by second or subsequent tests in family members after exposure from him.

#### Case report 1.

The first Covid positive [ Symptomatic ] person while travelling with family quarantined with 2 small children and wife. During quarantine he developed fever and cough . His report came as positive after 6 days and second tests for 2 children and wife were done. The children report came as positive after 13 days who were asymptomatic and still wife was negative in spite of living with children.

#### Case Report 2:

Second person was symptomatic, a health care worker ,working from home tested Covid positive and along with another member to his family indicating he was the source. They used family toilet .The source could be surface , droplet or toilet anything within family .

#### Case Report 3:

Another asymptomatic person travelled with minor son quarantined at home . His result came as positive and son was negative. The second test was positive for son and another 2 members in the family. So it could to be source of common toilet they are using .Index person also had physical disability.

#### Case Report 4:

CRPF Personals and family have different kind of common quarantine facility. With 2 kids couple was quarantined and their 1<sup>st</sup> tests results were negative. However some other persons of the facility results were positive so all people living in was retested . The father become positive and in second tests daughters were positive who were symptomatic. Finally mother was positive in 3<sup>rd</sup> tests. So it could be due to 2 factors, mother from symptomatic daughters and daughters from father but where from father did contacted

? This kind of centers maintain good social distancing in living and regulation of movement but big issue was the use of common toilet. So highly likely that they all got infection from toilet.

The caveat was basically pulling of data from multiple hurried studies where asymptomatic cases were designated as asymptomatic at the time of sample collection or initial assessment. It is likely that a proportion of cases later become symptomatic and wrongly categorized as asymptomatic due to lack of system to follow up to correct. But in our data though small contained all complete followed up information of not only index covid positive persons but also family members of close contacts. Indian reports showed 69-80% cases are asymptomatic and our data also within this range[81%]

Current evidence suggests that transmission of SARS-CoV-2 occurs primarily between people through direct, indirect, or close contact with infected people through infected secretions such as saliva and respiratory secretions, or through their respiratory droplets, which are expelled when an infected person coughs, sneezes, talks or sings.<sup>1</sup>. When we detailed the 4 families house hold conditions, we found that their common factor was common toilets for all members. The nature of transmission of 4 families suggest a strong possibility of transmission through use of common toilet. Three studies have cultured SARS-CoV-2 from stool specimens.<sup>9,10,11,12</sup>. Multiple families were using common toilets in case no 3 and large nos of individuals use random toilets in quarantine facility in case no 4. The members in a single family[ case no 4] sequentially tested positive from an unknown source whereas their first tests after travel were negative. Our data from special quarantine facilities of CISF,BSF,ITBP etc of similar nature with common toilets and we found majority of them turned positive after positive cases detected in quarantine and others need to undergo further tests. So it strongly indicates a common source like toilets irrespective of their symptomatic or asymptomatic clinical condition

The prevention of transmission is best achieved by identifying suspect cases as quickly as possible, testing, and isolating infectious cases.<sup>17,18</sup> In addition, it is critical to identify all close contacts of infected people<sup>18</sup> so that they can be quarantined<sup>19</sup> to limit onward spread and break chains of transmission. However as the literature reflected 7 out of 13 can be infected in home contacts, which is a very infectivity rate, so merely home quarantine will not prevent transmission. So education of quarantine rules [ social distancing withing within home etc safe practices and monitoring of home quarantined population to ensure is another critical aspect. Very low infectivity in our study could be linked to 80% asymptomatic cases, education of home quarantine rules and strict monitoring by strict monitoring by voluntary agency on the job. The study also found home quarantine is safer if conditions laid down by Indian Council of Medical Research Guidelines are followed.<sup>20</sup>

## Summary of answers against 5 key questions

- I. Yes we found it safer for covid positive persons both asymptomatic and mildly symptomatic to be home quarantined.
- II. The family members have increased risk of getting infection however it can be minimized by strictly adhering the home quarantine norms .
- III. The relation of symptomatic/asymptomatic cases and subsequent positive members in the family is not much clear as other confounding factors were not controlled [ it is not a case control study]
- IV. The presence of co morbidity is associated with presence of severe symptoms were not found as it could be due to largest proportion of covid positive between 20 to 40 years age group
- V. The sharing of common toilets by family members and living within the facility [Quarantine centre of CRPF, all tenants of a single campus ]found to be the common risk behavior and strongly suspected to have caused transmission to close contacts

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20. <https://www.mohfw.gov.in/pdf/Guidelinesforhomequarantine.pdf>, the required instructions for the care giver and the patient

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