



Research Article

ASYMPTOMATIC INFECTIONS OF COVID-19 IN GOLAGHAT DISTRICT, ASSAM, 2020 SCREENED  
AMONG CLOSE CONTACTS OF NIZAMUDDIN TABLIGHI JAMAAT: A CASE SERIES  
OBSERVATIONAL STUDY

Bishnu Ram Das\*, Gitali Kakoti, Sampurna Bora, Subhradeep Sonowal and Arpan Kumar Das

Department of Community Medicine, Jorhat Medical College, Jorhat-785001, Assam, India

ARTICLE INFO

Article History:

Received 4<sup>th</sup> February, 2020

Received in revised form 25<sup>th</sup>  
March, 2020

Accepted 18<sup>th</sup> April, 2020

Published online 28<sup>th</sup> May, 2020

Key words:

SARS-CoV-2, Asymptomatic carriers,  
COVID-19, RT-PCR, Pandemic

ABSTRACT

**Background:** Limited data are available for asymptomatic infections of COVID-19. The gaps still persist in the natural history of COVID-19 pandemic.

**Aim:** This study aimed to fill up the gaps of natural history of disease by reporting the epidemiological characteristics of 9 COVID-19 positive cases with asymptomatic infection screened from close contacts of Nizamuddin Tablighi Jamaat and to show the transmission potential of asymptomatic Severe Acute Respiratory Syndrome Coronavirus 2(SARS-CoV-2) carriers.

**Setting:** The study was conducted at IDSP unit of Golaghat district of Assam, India

**Methods:** In-depth investigations were conducted among close contacts of COVID-19 patients (or suspected patients) of Tablighi Jamaat religious congregation that took place in Delhi's Nizamuddin Markaz Mosque in early March 2020. Asymptomatic carriers were laboratory-confirmed positive for SARS-CoV-2 by testing nasopharyngeal/throat swab samples with Real Time Polymerase Chain Reaction (RT-PCR).

**Results:** Highest numbers of cases (67%) were from the age groups < 40 years and 45% were male and by occupation all of the participants were farmers. All the RT-PCR positive COVID-19 cases were asymptomatic at the time of testing and remained as such till the last follow up. On the other hand some of the asymptomatic cases (11%) remained virologically (RT-PCR) positive till 28<sup>th</sup> day from the date of first positive.

**Conclusion:** The present study indicates that in SARS-CoV-2 infection asymptomatic cases are occurring and virus shedding is noticeable during asymptomatic phase which was confirmed by RT-PCR assay.

Copyright © 2020 Bishnu Ram Das et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)[1] and is rapidly spreading worldwide from its place of origin in Wuhan City of Hubei Province of China [2]. On 30<sup>th</sup> January 2020 WHO declared the current novel coronavirus outbreak as Public Health Emergency of International Concern (PHEIC) [3]. Globally, as of 4<sup>th</sup> May 2020, there have been 34,07,747 confirmed cases of COVID-19, including 2,38,198 deaths, reported to WHO affecting 215 Countries, areas or territories with cases[4]. According to the Ministry of Health & Family Welfare, Govt of India (MoHFW, GOI), a total of 35043 COVID-19 cases (including 111 foreign nationals) have been reported in 32 states/union territories till 1 May 2020 (8AM). These include 8888 COVID-19 cases who have been cured/discharged, 1 who migrated and 1147 deaths.

On 24 March 2020, the Government of India under Prime Minister ordered a nationwide lockdown for 21 days, limiting movement of the entire 1.3 billion population of India as a preventive measure against the 2020 coronavirus pandemic in India. The period was extended for second time for a further period of two more weeks with effect from 4<sup>th</sup> May, 2020.

In early March 2020, a religious congregation took place in Delhi's Nizamuddin Markaz Mosque called Tablighi Jamaat. It is an Islamic missionary movement which encourages fellow members to practise and preach their religion as it was followed during the time of Prophet Mohammad [5]. As it was an accumulation of thousands of devotees it acted as a coronavirus super-spreader event resulting in more than 1,000 confirmed cases and at least 10 deaths related to the event across the country. Over 9,000 missionaries from various states of India and around 900 foreign national attendees concentrated the congregation [6]. The first case of the 2019–20 coronavirus pandemic in Assam was reported on 31 March 2020. The patient was a 52-year old man returning from Nizamuddin Markaz who tested positive at Silchar Medical

\*Corresponding author: Bishnu Ram Das

Department of Community Medicine, Jorhat Medical College, Jorhat-785001, Assam, India

College and Hospital, Assam. The COVID-19 outbreak in Assam has been traced to persons who attended the conference of the Tablighi Jamaat religious organisation at Nizamuddin Markaz (Delhi) and did not report to the authorities after their return to Assam [7]. The Ministry of Health and Family Welfare, GOI released a list of 503 people from Assam who were a part of the congregation. According to media as of April 4, 488 people were already traced and appropriate measures were taken while 15 people were untraceable [8]. As of 26 April 2020, 35 confirmed cases have been reported in Assam with 1 death affecting 12 districts across the state. Golaghat topped the list with 9 confirmed cases and all were attendee of the Jamaat congregation and asymptomatic [7].

In infectious disease transmission asymptomatic cases play a critical role in spreading the disease agents from reservoir to susceptible host [9]. Limited data are available on asymptomatic cases of COVID-19. Having high transmission potential it is crucial to study the epidemiological characteristics of asymptomatic cases and the disease dynamics to structure appropriate intervention strategy. The objective of this case series is to report 9 asymptomatic cases of COVID-19 detected in Golaghat district of Assam and to study their epidemiological characteristics at the early stage of the outbreak in India.

## METHODS

This is an observational case series study of the first 9 asymptomatic COVID-19 infected patients confirmed with Real Time Polymerase Chain Reaction (RT-PCR). Study participants were admitted in a secondary care centre in Golaghat district of Assam state from 31<sup>st</sup> March 2020 to 1<sup>st</sup> May, 2020 following community contact tracing of COVID-19 patients who participated in Tablighi Jamaat, at Nizamuddin Markaz Mosque, Delhi, India. The epidemiological, clinical, laboratory and outcome data were prospectively recorded in a standardised Case Investigation Form (CIF). All epidemiological, clinical, laboratory data were collected, including age, sex, religion, nationality, travel history, symptoms, duration of stay and geographic location of the study participants. All RT-PCR confirmed cases were eligible for inclusion in this study. Hospitalised patients were followed for 32 days from March 31<sup>st</sup> 2020 to May 1, 2020. Nasopharyngeal/throat swab samples were collected under all required precautions and transported in Viral Transport Media (VTM) to the Viral Research and Diagnostic Laboratory for detection of SARS-CoV-2 using a quantitative polymerase chain reaction assay. Data were obtained as a part of disease surveillance under Integrated Disease Surveillance Programme (IDSP), Govt of Assam, India. Patients were isolated in health facility and followed until two consecutive nasopharyngeal/throat swab samples taken 24 hours apart became negative. During the isolation period all appropriate measures were taken as per guideline of Ministry of Health and Family Welfare, Govt of India.

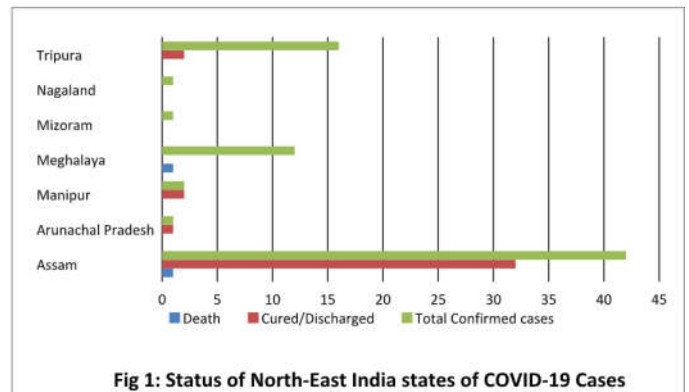
Data related to Global/ Indian and North East India States status of COVID-19 were obtained from public domains [4, 10, 11]. We also regularly visited the Ministry of Health and Family welfare, Govt of India/Assam website to obtain updated data on COVID-19 till 4<sup>th</sup> May 2020. Collected data were analysed and presented in the form of tables and graphs in this study.

## RESULTS

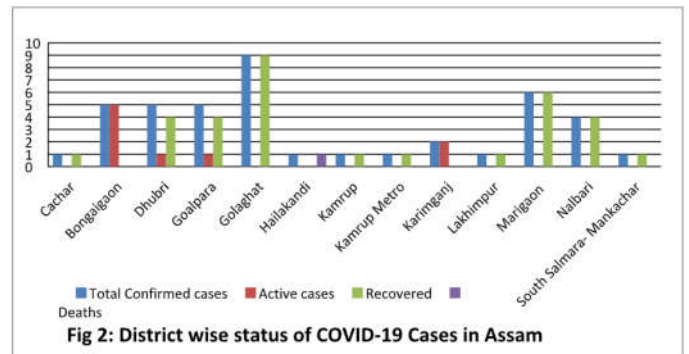
### Global and Indian Status

Globally, as of 4<sup>th</sup> May, 2020 as per WHO, the total confirmed cases has summed up to 34,07,747 with 2,38,198 confirmed deaths affecting 215 countries worldwide [4]. Coming to the Indian scenario, the total confirmed cases amounts to 29,685 with 11,761 cases being cured/discharged and 1389 deaths. Among the total 29 States and 7 Union Territories of India, 28 states and 5 Union Territories had been affected and Maharashtra tops the list with 12,974 confirmed cases. Delhi, Gujarat, Madhya Pradesh, Uttar Pradesh as well as Rajasthan have an alarming high rate of cases exceeding 2000. On a brighter side, Goa, Manipur, Mizoram as well as Arunachal Pradesh have all its previous cases cured and discharged with no new cases. Nagaland with 1 confirmed case being treated at Guwahati Medical College and Hospital also hasn't reported any new cases as of now. Sikkim still holds the distinction of maintaining 0 cases as of 4<sup>th</sup> May [10]. Assam reported 42 confirmed cases with 32 cured/discharged and 1 death in 13 districts as of 4<sup>th</sup> May, 2020.

### North East India Status



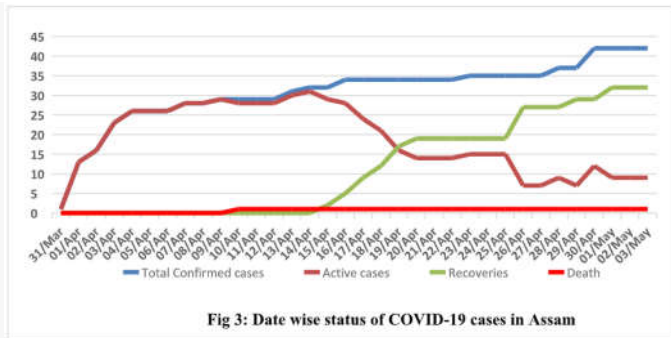
Among the 8 North-East States, Assam tops the list with total 42 confirmed cases, 32 recoveries and 1 death followed by Tripura with 16 confirmed cases and 2 cured/discharged. Meghalaya reported 12 confirmed cases and 1 death. Manipur reported 2 confirmed cases which were cured/ discharged. Arunachal Pradesh reported 1 confirmed case which has been cured/ discharged. Nagaland and Mizoram had also reported 1 confirmed case till 4<sup>th</sup> May (Fig: 1).



### District wise status in Assam

In Assam among the 42 confirmed cases, Golaghat district reported the highest number of confirmed cases (9) which have been cured /recovered. Bongaigaon had reported 5 confirmed cases which are still active. Similarly, Dhubri and Goalpara district had reported 5 confirmed cases with 1 active case till

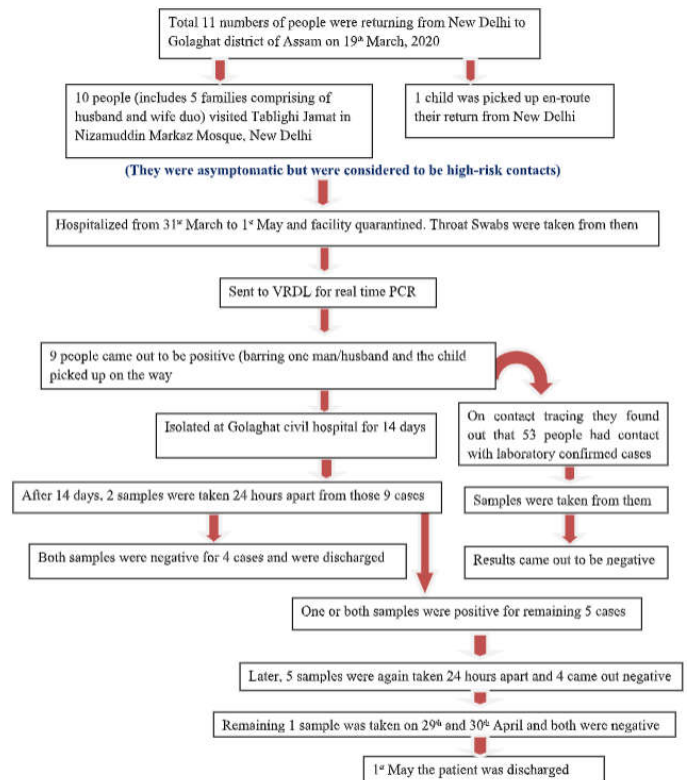
4<sup>th</sup> May, 2020. Nalbari district had reported 4 cases which have recovered and Morigaon district had reported 6 confirmed cases which have recovered. Rest of the districts (Kamrup, Lakhimpur, Kamrup Metro, South Salmara-Mankachar, Cachar) had reported 1 each which were cured/recovered. Hailakandi district reported 1 confirmed case and the patient expired. Karimganj reported 2 confirmed cases which were active at time of our study [11]. (Fig-2,5). The date wise distribution of Corona positive reflected that confirmed cases were increasing over a period of time and never touched the baseline (Fig-3). The recovery rate (76.1%) is visibly high in comparison to death rate (2.3%). We observed that the prevalence of active cases throughout the study period was 21.4%.



**Status in Golaghat District**

There were a total number of 11 people returning from New Delhi to Golaghat district, Assam on 19<sup>th</sup> March, 2020. Out of this, 10 people (which include 5 families comprising of husband and wife duo) visited Tablighi Jamaat in Nizamuddin Markaz Mosque, Delhi and one child was picked up en-route their return in train from New Delhi to Assam. Though all the cases were asymptomatic yet all of them were tracked following confirmation that many persons who attended Tablighi Jamaat turned out to be COVID-19 positive. And all together 11 attendee were brought to Golaghat Civil Hospital between 31<sup>st</sup> March to 2<sup>nd</sup> April, 2020 and were facility quarantined. Nasopharyngeal/throat swab samples were collected from all of them as they were considered to be high-risk contacts. 9 people who came out to be positive were isolated at Golaghat Civil Hospital barring one man/husband from one family and the child that was picked up on the way (Fig:4).

On Contact tracing of the 9 laboratory confirmed asymptomatic cases, it was found that 53 individuals had history of contact with them. The results of all the contacts came out to be negative following real time PCR. During their isolation period several throat swab samples were tested. After 14 days of isolation, 2 samples were taken 24 hours apart from each of the 9 positive cases according to Discharge Policy of 2019-nCoV case of GOI [12]. 4 cases were discharged as their consecutive two laboratory results came out to be negative. But remaining 5 cases could not be as one or both samples came out to be positive. Later, two samples were taken 24 hours apart for 5 cases and 4 came out to be negative and were discharged. The remaining case was tested on 29<sup>th</sup> and 30<sup>th</sup> April and both samples came out to be negative and hence the patient was discharged on 1<sup>st</sup> May, 2020.

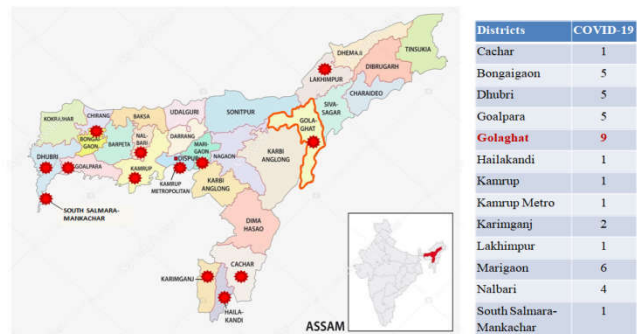


**Fig 4** Flowchart showing how study participants were followed

**Epidemiological profile of COVID-19 positive cases in Golaghat**

There were a total of 9 RT-PCR positive cases and all of them were asymptomatic. Highest numbers of cases (67%) were recorded in the age groups of < 40 years followed by 11% each in the age group of 41 - 50 years, 51 – 60 years and > 60 years respectively. Among the total cases, 45% were male and they were farmers by occupation while the others were female 55% and they were home-maker. All the study participants were Muslims and Indian national. All the Laboratory confirmed cases had a travel history to Nizamuddin Markaz Mosque, New Delhi, India sharing a common stay period of more than 30 days (Table–1). We explored the contact history and found that all the 9 cases had the exposure history with the laboratory confirmed cases of COVID-19 while they were in Nizamuddin Markaz Mosque.

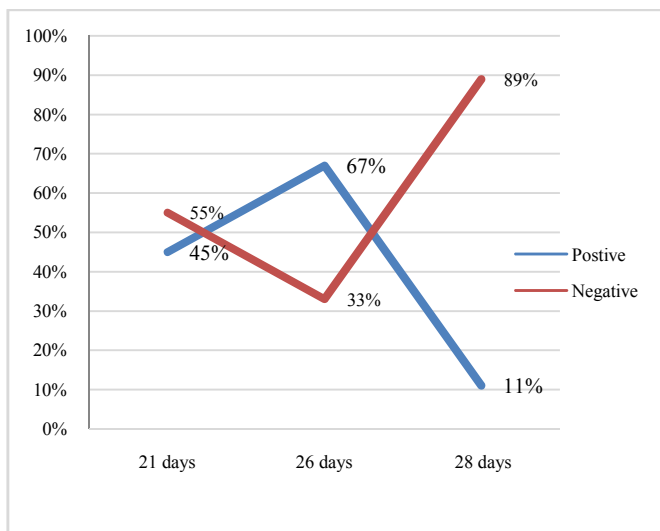
Geographic Position of all the 9 asymptomatic cases showed (Fig: 5) that they were belongs to 2 Health Blocks under Golaghat District namely Kamar Bandha Ali (55.5%) and Missamora (45.5%).



**Fig-5** Map showing district wise Lab confirmed Covid-19 Cases in Assam

**Table 1** Demographic Profile of COVID-19 Patients at COVID Treatment Centre, Golaghat

Variables	Frequency (n = 9)	Percentage (%)
AGE (in years)		
< 40	6	67
41 – 50	1	11
51 – 60	1	11
>60	1	11
SEX		
Male	4	45
Female	5	55
RELIGION		
Hindus	0	0
Muslims	9	100
Christians	0	0
OCCUPATION		
Employed (farmer)	4	45
Unemployed	5	55
NATIONALITY		
Indian	0	0
Foreigner	9	100
HISTORY OF TRAVEL		
Yes	9	100
No	0	0
EXPOSURE HISTORY TO COVID POSITIVE CASES		
Yes (Visited Nizamuddin Markaz Mosque, New Delhi)	9	100
No	0	0
DURATION OF STAY		
<30 days	0	0
>30 days	9	100



**Fig 6** Showing RT-PCR status among COVID-19 positive patients

Viral clearance of asymptomatic COVID-19 positive patients varies from person to person. It has been observed in the present study that 55% COVID positive patients took 21 days to become RT-PCR negative. While 33% became negative in 26 days and 11% study participants remained positive up to 28 days from the date of first positive test (Fig-6). However, all were negative after 30 days.

**DISCUSSION**

Our current series of 9 patients represents the first asymptomatic case series report on coronavirus from Assam. We studied the epidemiological characteristics of the 9 asymptomatic COVID-19 infected patients at the early stage of COVID-19 epidemic in Assam. COVID-19 has created devastation globally with an overwhelming statistics of more than 3 million confirmed cases worldwide [4]. This turmoil which started in India on 30 January 2020 has risen to a

mammoth 33514 active cases. Among the 8 North-Eastern states Assam tops the list with 42 cases, mostly arising from the Assam returned attendees of the religious congregation called Tablighi Jamaat held at Nizamuddin Markaz Mosque, New Delhi. This event acted as a corona virus super-spreader as a huge number of attendees of the event came out coronavirus positive. Hence the 11 attendees from Assam who attended the congregation were traced and tested.

9 of them came out positive but were asymptomatic at the time of testing and remained as such till the last follow up. On the other hand some of the asymptomatic cases (11%) remained virologically (RT-PCR) positive till 28<sup>th</sup> day from the date of first positive. Similarly, a study conducted by Arons M.M *et al.*, also found that more than half of the positive laboratory confirmed patients were asymptomatic at the time of testing [13]. This confirmed that some portion of the corona virus infected patients may remain asymptomatic in the natural history of the disease.

Among the 9 asymptomatic positive cases, 45% were male and majority (67%) belonged to the group < 40 years. All of them were Muslims and Indian national. They stayed at Nizamuddin mosque for more than 30 days. The prevalence of active cases throughout the study period were 21.4% which consumes huge amount of logistics and man power resources and it becomes a public health challenge in resource constraint settings. Earlier study conducted by Hu Z *et al.*, provided confirmation that transmission from an asymptomatic infector to close contacts led to severe COVID-19 pneumonia. These findings indicate that asymptomatic carriers can result in person-to-person transmission and may be considered as a source of COVID-19 infection [14]. In our study we found that the cases who came out positive were asymptomatic and they are very much ambulatory. This brings into focus the underlying fact that being asymptomatic, these positive cases have a lethal potency to spread the disease as an unsuspecting infector. Hence, test based strategy to detect the virus circulation in current pandemic may be a better option over symptom based strategy to interrupt the viral transmission. This statement has a strong stand out in the study conducted by Arons M.M *et al.*, where it was found that symptom based strategy for recognizing nursing residents were found to be insufficient for preventing transmission [13]. This showed that large numbers of asymptomatic patients might have been sub-clinical in the community. Therefore, it is noteworthy to strictly monitor the close contacts to map out the virus circulation in the community for containment of potential outbreaks. Therefore, at this juncture when there are no antiviral drugs or vaccines and ambulatory asymptomatic cases are in the community, it may be emphasised that a test based strategy for disease detection may be more appropriate to fight against corona enemy. Moreover in this situation the disease containment strategies for self-protection like frequent hand washing, use of face mask, following cough etiquettes, social distancing etc and quarantining of close contacts (either at home or facility) should be continuously stressed.

**CONCLUSION**

The present study revealed that in SARS-CoV-2 infection there is an asymptomatic phase in the natural history of COVID-19. The virus shedding is evident during this asymptomatic phase as established by RT-PCR assay. Analogous observations have also been reported in various studies worldwide in current pandemic. Therefore, Test based

strategy in disease surveillance may be recommended as an appropriate tool in mapping out the virus circulation in community.

#### Limitation

The study was based on a small cohort of 9 asymptomatic patients and hence we couldn't provide a generalized representation. The status of COVID-19 gets updated every day with changing data and figures. Therefore, the disease burden we depicted in this study is not static in nature.

#### Acknowledgement

We would like to extend our sincere thanks to the IDSP Team, Golaghat, Assam for their constant help and support in the form of detailed reporting and providing information of data.

#### Competing interests

The authors have declared that no competing interests exist.

#### Authors' contributions

B.R.D. was responsible for conceptualisation, drafting the study protocol and final editing of the manuscript. G.K. was responsible for conceptualisation, supervision and writing – review and editing. S.B. was involved in formal analysis, investigation, writing of the original draft. S.S. was involved in drafting the part of manuscript, methodology, resources, validation while A. K.D. involved in data curation, compiling and analysis,

#### Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

#### References

1. "Coronavirus disease 2019 (COVID-19)—Symptoms and causes". Mayo Clinic. Retrieved 14 April 2020.
2. <https://www.who.int/csr/don/12-january-2020-novel-coronavirus-china/en/> Retrieved 3 May 2020-05-03
3. World Health Organization. Accessed on 4<sup>th</sup> May, 2020. Available from: <http://www.euro.who.int/en/health-topics/health-emergencies/international-health-regulations/news/news/2020/2/2019-ncov-outbreak-is-an-emergency-of-international-concern>
4. World Health Organization. Accessed on: 4<sup>th</sup> May, 2020. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
5. Johnny, Stanly (2 April 2020), "Explained, Who are the Tablighi Jamaat?", The Hindu, Chennai
6. "Coronavirus: About 9,000 Tablighi Jamaat members, primary contacts quarantined in country, MHA says". The Times of India. Press Trust of India. 2 April 2020.
7. "Covid-19 Advisory Assam, list of districts". The Government of Assam. Retrieved 26 April 2020.
8. <https://www.indiatoday.in/amp/india/story/coronavirus-in-india-488-people-from-assam-traced-to-nizamuddin-markaz-15-yet-to-be-traced-1662665-2020-04-02#referrer=https://www.google.com>
9. Lai, Chih-Cheng; Liu, Yen Hung; Wang, Cheng-Yi; Wang, Ya-Hui; Hsueh, Shun-Chung; Yen, Muh-Yen; Ko, Wen-Chien; Hsueh, Po-Ren. Asymptomatic carrier state, acute respiratory disease, and pneumonia due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2): Facts and myths. *Journal of Microbiology, Immunology and Infection* February 2020: 1-9.
10. Ministry of Health and Family Welfare, Government of India. Accessed on: 4<sup>th</sup> May, 2020. Available from: <https://www.mohfw.gov.in/>
11. Government of Assam Covid-19 Advisory. Accessed on: 4<sup>th</sup> May, 2020. Available from: <https://covid19.assam.gov.in/>
12. National Centre for Disease Control. Accessed on: 4<sup>th</sup> May, 2020. Available from: <https://ncdc.gov.in/WriteReadData/1892s/23914145951584779119.pdf>
13. Arons M.M, Hatfield K.M, Reddy S.C, Kimball A, James A, Jacobs J.R, Taylor J, Spicer K, Bardossy A.C, Oakley L.P, Tanwar S, Dyal J.W, Harney J, Chisty Z, Bell J.M, Methner M, Paul P, Carlson C.M, McLaughlin H.P, Thornburg N, Tong S, Tamin A, Tao Y, Uehara A, Harcourt J, Clark S, Brostrom-Smith C, Page L.C, Kay M, Lewis J, Montgomery P, Stone N.D, Clark T.A, Honein M.A, Duchin J.S, and Jernigan J.A. Presymptomatic SARS-CoV-2 Infections and Transmission in a Skilled Nursing Facility. *The new England Journal of Medicine*, April 2020: 1-10.
14. Hu Z, Song C, Xu C, Jin G, Chen Y, Xu X, Ma H, Chen W, Lin Y., Zheng Y, Wang J, Hu Z, YiY, Shen H. Clinical characteristics of 24 asymptomatic infections with COVID-19 screened among close contacts in Nanjing, China. *Science China Life Science* 63:1-6.

#### How to cite this article:

Bishnu Ram Das *et al* (2020) 'Asymptomatic Infections of Covid-19 in Golaghat District, Assam, 2020 Screened Among Close Contacts of Nizamuddin Tablighi Jamaat: A Case Series Observational Study', *International Journal of Current Medical and Pharmaceutical Research*, 06(05), pp 5164-5168.

\*\*\*\*\*