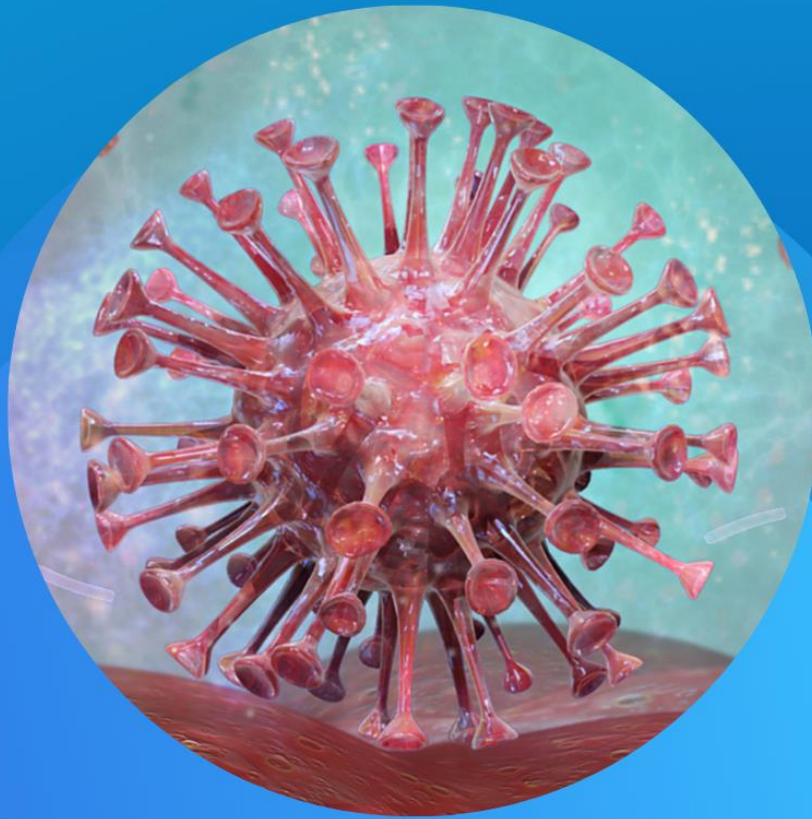


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COVID 19: CASE STUDY

Dr. Vaishali Badwaik



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PREFACE

COVID-19: CASE STUDY is the book of cases studied during second variant of Covid pandemic in Nagpur district. In this edition, 1005 RTPCR test data is given with all its disease condition, origin and characters coronavirus, its pathophysiological conditions and epidemiology. It gives all the information of broad dead cases from both whether they were asymptomatic and symptomatic or disease or healthy, of any age group. This data is beneficial to monitor, control and prevent the spread of further viral outbreak in and around Nagpur District. The cooperative efforts achieve the better management of Covid- 19 in society.

- Dr. Vaishali Badwaik

ACKNOWLEDGEMENT

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DEDICATED TO

All the corona warriors, who helped directly or indirectly to the corona victims, my family and my students.

CHAPTER 1

ORIGIN AND CHARACTERISTIC OF HUMAN CORONAVIRUS

The COVID-19 epidemic caused mayhem over the entire world. The coronavirus 2 that causes severe acute respiratory syndrome is very contagious. (SARS CoV-2). The virus first appeared in Wuhan, China, and quickly spread worldwide. Coronaviruses are members of the family Coronaviridae, order Nidovirales, and subfamily Orthocoronavirinae. The exterior of the virus structure is covered with a crown of spikes.

Coronavirus is a single-stranded (ss) RNA virus mostly affects the respiratory system, although it also affects other body systems. It is having variety of hosts, including humans. The illness might range from a simple cold to a more serious respiratory condition. The capsid surrounds the viruses.

These viruses have caused a number of epidemics across the globe, including the Middle East respiratory syndrome (MERS) outbreak in South Korea in 2015 and the severe acute respiratory syndrome (SARS) pandemic of 2002–2003. An outbreak in China in December 2019 was caused by a new coronavirus (SARS-CoV-2, also known as COVID-19), raising worry across the globe. While certain coronaviruses have triggered catastrophic outbreaks, others are responsible for mild to severe respiratory infections like the common cold.

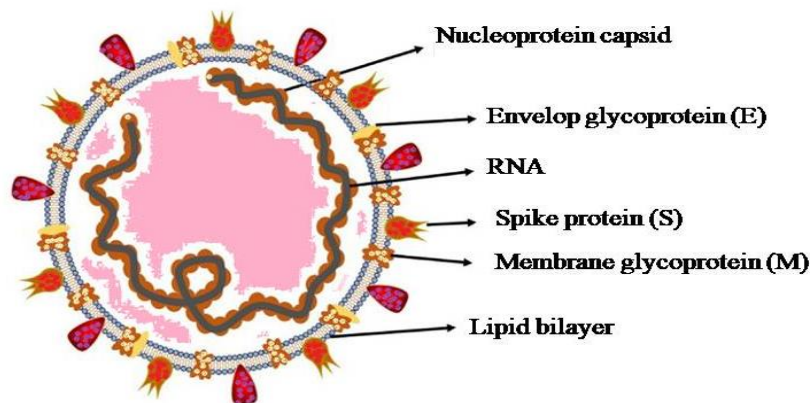
Coronaviruses are positive-sense RNA viruses that have a wide range of effects on many natural hosts and systems. From the ordinary cold to more severe respiratory illnesses like SARS and MERS, coronaviruses can cause clinical problems in humans. The recently identified SARS-CoV-2, which has wrecked havoc in China and sparked a pandemic crisis for the entire world's population, is the target of intense endeavour. Because of this, disease outbreaks have taken more time to stop.

The family Coronaviridae, to which the SARS-CoV-2 belongs, is made up of the four genera Alphacoronavirus, Betacoronavirus, Gammacoronavirus, and Deltacoronavirus. Coronaviruses have a 30-kb, unsegmented, single-stranded (ss), and positive-sense RNA genome. It is covered with a 3' poly-A tail and a 5' poly-A cap. The genome of SARSCoV-2 is 29.891 kb long and includes 38% G + C. These viruses are encapsulated in an envelope containing viral nucleocapsids. For positive-sense RNA viruses, CoV nucleocapsid organisation exhibits helical symmetry, which is unique.

The evolutionary analysis of the structural genes also showed that SARS-CoV-2 is more closely related to the CoV associated with bat SARS. SARS-CoV-2 may have originated

in bats as a result, and additional amplifier hosts may have helped the disease spread to people. Notably, the other two zoonotic CoVs with bat origins are the ones associated with MERS and SARS. However, SARS and MERS are amplifying hosts for camels and civet cats, respectively.

These viruses have been responsible for several outbreaks around the world, including the Middle East respiratory syndrome (MERS) outbreak in South Korea in 2015 and the severe acute respiratory syndrome (SARS) pandemic of 2002–2003. Most recently, a novel coronavirus (SARS-CoV-2, also known as COVID-19) that triggered an outbreak in China in December 2019 caused concern all around the world. Other coronaviruses are responsible for mild to severe respiratory infections, such as the common cold, while certain coronaviruses have caused disastrous outbreaks.



Coronaviruses (CoVs) have been linked to large disease outbreaks in East Asia and the Middle East over the past 20 years. In 2002 and 2012, respectively, the Middle East respiratory syndrome (MERS) and the severe acute respiratory syndrome (SARS) first appeared. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes coronavirus disease 2019 (COVID-19), just surfaced in late 2019. It has caused an ongoing pandemic in many nations and territories and poses a threat to world health.

In the first quarter of 2020, the World Health Organization proclaimed COVID-19, also known as Novel Corona Virus, to be a global epidemic and pandemic. This respiratory illness in humans is linked to this virus. The varied group of viruses known as coronaviruses can infect a wide range of animals and cause mild to severe respiratory diseases in people.

Emerging coronaviruses have become a new public health concern in the twenty-first century as a result of the emergence in humans in 2002 and 2012 of two highly pathogenic coronaviruses with zoonotic origins, the Middle East respiratory syndrome coronavirus (MERS-CoV) and the severe acute respiratory syndrome coronavirus (SARS-CoV). In the Chinese city of Wuhan at the end of 2019, a brand-new coronavirus known as

SARS-CoV-2 arose and spread an uncommon viral pneumonia outbreak. This new coronavirus illness, also known as COVID-19 (coronavirus disease 2019), is extremely contagious.

The COVID-19 epidemic has spread to 206 nations around the globe. Mortality and morbidity constitute a concern to humans, but they also have an indirect impact on us due to their effects on the economy. The goal of the analysis was to identify trends across different Indian states. The diversity of India topography and demographic groups underline the necessity for a state-specific approach to tracking and containing the current pandemic. This would make it easier to develop a customised plan for each state to slow down and stop the disease spread.

The southernmost state of Kerala reported the first COVID-19 case, and from there it spread to all other states. However, conditions are particularly bad in states with significant international migration. The state most impacted at the moment is Maharashtra. Maharashtra has the fastest-growing and steepest slope epidemic curve out of all of these states.

Due primarily to international travel, with the first patient arriving from Wuhan, China, COVID-19 was introduced into some Indian states. The connections of positive cases were then tracked down, and places like Gujarat, Rajasthan, Maharashtra, Kerala, and Karnataka showed identified spread. Using the patient travel histories, the COVID-19 phase spread was tracked, and it was discovered that the majority of transmissions were local. The epidemiological features and dynamics of the disease transmission in India was not clear initially which makes it difficult to take the necessary steps to contain the pandemic. The population density was linked to a trend in the number of COVID-19 cases, with higher numbers often being reported in India's eastern, southern, and west-central regions. During the pandemic period under consideration, India's death rate was lower than the global average.

In India, 81% of the cases were centred mostly in areas with high population densities. In the first lockdown, the Indian states of Gujarat (8195), Tamilnadu (7204), Delhi (6923), Rajasthan (3898), Madhyapradesh (3614), and Uttarpradesh (3467) were reported as having the highest COVID19 infection rates, followed by Maharashtra.

CHAPTER 2

PATHOPHYSIOLOGY AND CLINICAL MANIFESTATION

Pathophysiology is the study of the physiology of abnormal states, particularly the functional alterations that go along with a given syndrome or disease. The outward sign of a disease or infection is referred to as a clinical manifestation. In December 2019, Wuhan, China, saw the onset of SARS-CoV-2, an acute atypical respiratory disease. At first, it was thought that the market for seafood was a zoonotic source of its transmission. But later, it was greatly spread from person to person, leading to a pandemic outbreak.

Epidemiology

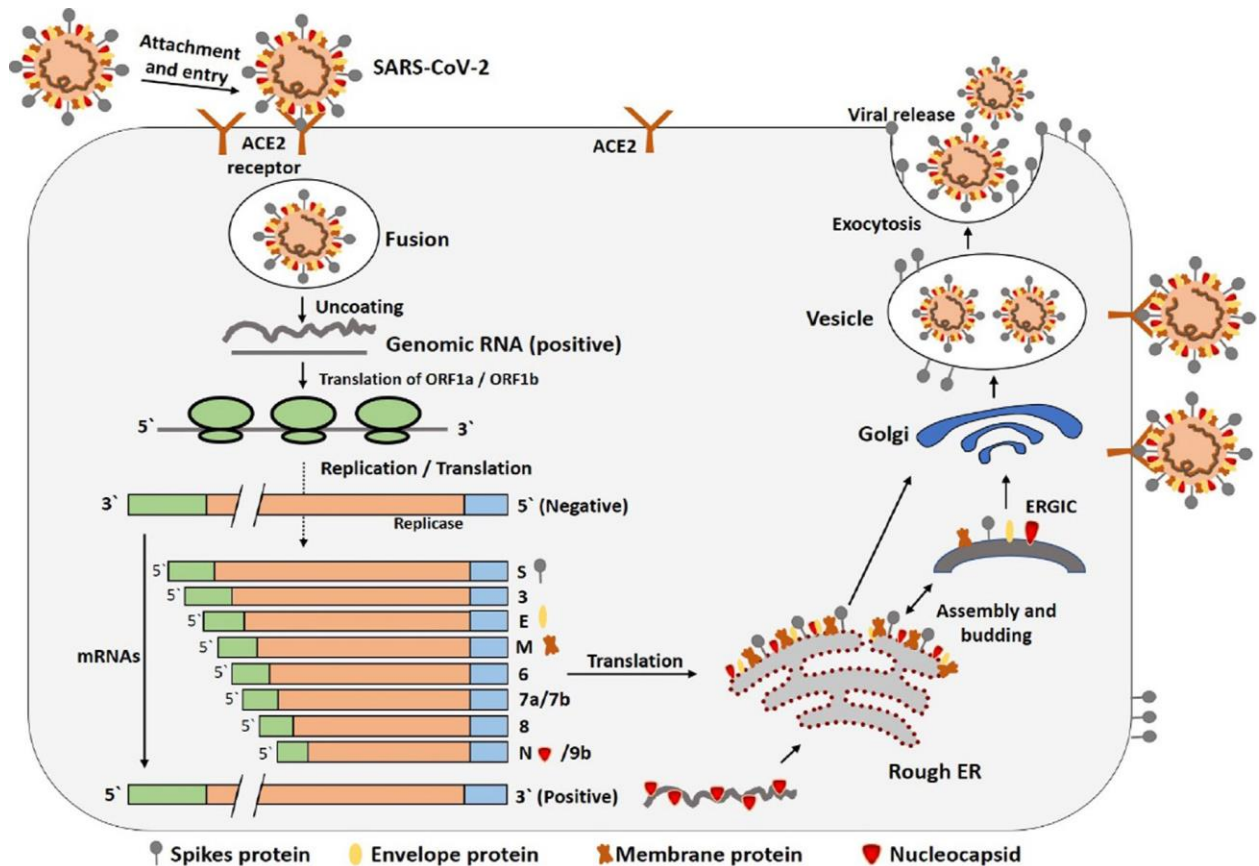
At the beginning of pandemic outbreak, the male patient and elderly person were frequently observed infected with COVID-19 but after some days it was observed that there is no significant gender difference for spreading of disease. More than that the people were at risk if they are already suffering from some diseases like coronary disease, blood pressure, hypertension, diabetes etc. Severe infection leads to the increase value of d-dimer and multiple organ failure which linked with variable risk factor.

More than that, the people were at risk if they were already suffering from some diseases like coronary disease, blood pressure, hypertension, diabetes, etc. Severe infection leads to the increase value of d-dimer and multiple organ failure which causes death. At the beginning of the pandemic outbreak, the male patients and elderly person were frequently observed infected with COVID-19 but after some days it was observed that there is no significant gender difference for spreading of disease.

Very few children were impacted by COVID-19. This outbreak is regarded as being quite minor, possibly because it only affected 20% of the population. This study's finding indicates that COVID-19 may be decreasing its prevalence in the paediatric population. The data also demonstrates a connection between gender and the start and spread of diseases. In general, the severity of COVID-19 in men will be correlated with smoking and alcohol consumption.

Coronaviruses are positive-sense, single-stranded, encapsulated RNA viruses that are roughly 30 kb in size. They infect a wide variety of host species. They can be generally divided into four genera α , β , γ , and δ based on their genetic makeup. Only mammals are susceptible to infection from coronaviruses α and β .

Serious issues have also been connected to thrombosis and pulmonary embolism, in addition to respiratory symptoms. This is in line with the finding that high levels of d-dimer and fibrinogen were linked to severe diseases. Three functions of the endothelium in the body are vasodilation, fibrinolysis, and anti-aggregation. Given that endothelium plays a substantial role in thrombotic regulation, hypercoagulable profiles observed in patients with severe diseases are likely indicative of extensive endothelial damage. Notably, endothelial cells make up one-third of lung cells.



**Figure 1: The life cycle of SARS-CoV-2 in host cells (pathogenicity of SARS-CoV-2)
(Shereen *et al.*, 2020)**

The five phases of the virus life cycle with the host are attachment, penetration, biosynthesis, maturation, and release. Viruses enter host cells after attachment either through membrane fusion (penetration) or endocytosis. After viral components have been released inside of host cells for reproduction, viral RNA enters the nucleus of those cells. Viral mRNA is used for viral protein synthesis (biosynthesis). More viral particles are produced following maturation and release. The four structural proteins that make up coronaviruses are spike (S), membrane (M), envelop (E), and nucleocapsid (N).

The downstream ORF1 regions of all coronaviruses contain specific genes that encode proteins required for viral replication, nucleocapsid development, and spike generation. The coronavirus's ability to attach to and penetrate host cells is due to the glycoprotein spikes on its exterior. Due to the weak connections between the virus's receptor-binding domains (RBD), the virus may infect a variety of hosts. While other coronaviruses primarily detect aminopeptidases or carbohydrates, SARS-CoV and MERS-CoV both identify exopeptidases as a primary receptor for entrance into human cells.

A coronavirus entrance method is dependent on cellular proteases, including the human airway trypsin-like protease (HAT), cathepsins, and transmembrane protease serine 2 (TMPRSS2). These enzymes divide the spike protein and produce further penetrating alterations.

Clinical Manifestation

Tyrrell and Bynoe made the initial discovery of human coronavirus cases in 1965. They realised they might spread the B814 virus. It was observed in adult human embryonic tracheal organ cultures obtained from adult respiratory systems that these individuals showed symptoms of the common cold. The initial cases, which were originally noted in Wuhan City of Hubei Province, China, in December 2019, have been connected to the Huanan Seafood Market (South China). The sickness has since spread to a number of other countries.

After having its beginnings in the Hunan seafood market in Wuhan, South China, where raccoon dogs, bats, snakes, palm civets, and other animals are sold, the novel coronavirus soon spread to 109 countries. Bats were regarded as the main reservoir by the sequence-based research, despite the fact that the zoonotic origin of SARSCoV-2 is uncertain. It was shown that the spike glycoprotein that connected the SARS-CoV (CoVZXC21 or CoVZC45) with the RBD of another Beta CoV was crucial for DNA recombination, which may be the reason for quick infection and cross-species transmission.

The highly contagious and severe coronavirus disease 19 (COVID-19) virus is primarily transmitted by contact with respiratory droplets as opposed to through the air. The majority of COVID-19 transmission occurs between infected and uninfected individuals. During one cough, up to 3,000 droplets may circulate. A large number of tiny particles will stay in the air even though some of these droplets may land on surrounding things and people.

Anyone who does not properly wash their hands after using the loo runs the danger of contaminating anything they touched because the virus is also shed for a long time in faeces. Sneezing, a cold, or mouth-and-nose coughing are a few examples of how close contact with tiny droplets released from infected individuals' upper respiratory tract secretions might transmit Covid-19. Because of this, it's advised to maintain a minimum of one metre (3 feet) away from someone who is ill. They catch COVID-19 when these droplets land on surrounding objects or surfaces and someone touches them before touching their eyes, nose, or mouth. The virus can also propagate by contaminating surfaces.

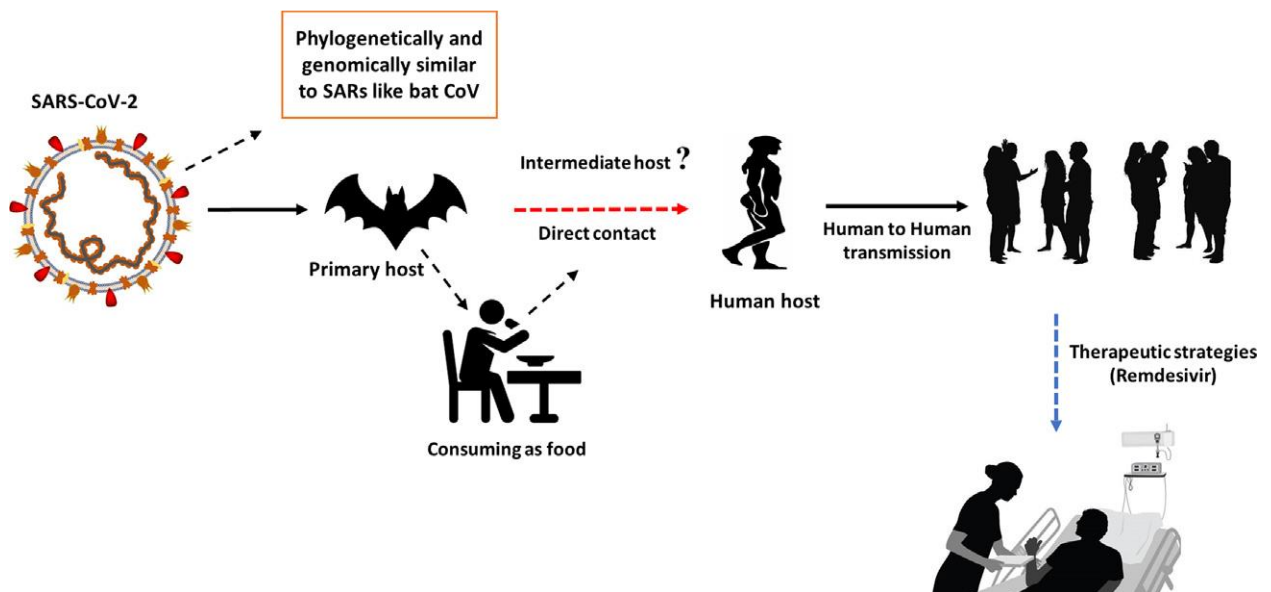


Figure 2: Pathogenicity of COVID-19 infection (Hafeez *et al.*, 2020)

CHAPTER 3

COVID-19 ANALYSIS IN NAGPUR DISTRICT DURING MONTH OF MARCH 2021

C OVID- 19 was declared as Public Health Emergency of International concern by the WHO. During the second variant, in March to April 2021, the outbreak of disease is tremendous and become out of control for some days. Under the project, the 1005 RTPCR test carried out among which 489 cases were positive for COVID- 19. The samples were taken from all age group i.e. from 2 day to at the age of 90. In this chapter the detail procedure of RTPCR is given with needed instruments.

Material and Method

1. Nasopharyngeal Nylon Flocked Swab
2. Oropharyngeal Nylon Flocked Swab
3. Viral Transport Mediam
4. Cold Box
5. High Speed Centrifuge
6. Cold Centrifuge (Zentrifuge)
7. Cryovials
8. Cryocube Box
9. Forcep
10. Nuclis Acid Extraction Kit (1) Manual (2) Automated
11. Nortex
12. PCR Machine (Thermocycles)
13. Laminar Air Flow
14. PCR Work Station
15. Ethyl Alcohol
16. PCR Coller
17. PCR Plate
18. Adhesive Film
19. Sealer
20. Ice Flaxer
21. Micropipette 0-10 ul – (2)
22. Micropipette 10-200 ul – (2)
23. Micropipette 100-1000 ul – (4)

24. Micro Tips
25. Appondroff Tubes (Micro Centrifuge Tube)
26. Nas Mask
27. PPE Kit
28. Face Shield
29. RTPCR Peagent Kit
30. Cotton Bundle
31. Beaker
32. Bio Hazard Bags
33. 1 % Hypochlarite
34. Nitrile Gloues
35. -20 Refrigeration

Media Preparation

Composition of V.T.M. (Viral Transport Media)

Hanks Balance salt solution (A&B)

A) Hanks A- (Zox) 100 ml

NaCl	16.00 gm
KCL	0.80 gm
Mg 504.7420	0.40 gm
CaCl ₂	0.28 gm

Dissolve the above (except CaCl₂) in 80 ml of Double Distilled Water. Dissolve CaCl₂ separately in 10 ml of D.D.W and add it to the main solution. Bring up the volume to 100 ml with D. D.W. Add 0.2 ml chloroform (preservative) store at 4°C.

B) Hanks B (20 x) 100 ml

Nu ₂ HPO ₂ H ₂ O	0.12 gm
KH ₂ PO ₄	0.12 gm
Glucose	2.00 gm

D. D.W. to make 100 ml Add 0.2 ml of chloroform (preservative) Store at 4°C.

For the preparation of Hanks Balance Salt Solution

Hanks A (20x)	5.0 ml
Hanks B (20x)	5.0 ml
DDW	88.0 ml

Phenol Red (0.5%) 0.2 ml

Autoclave at 10 cb. 10 min. at 110°C of store at 4°C

Nucleic Acid Extraction Kit (0 gen) contents.

- 1) Lysis Buffer
- 2) Carrier RNA (lyophilized)
- 3) Wash-I solution
- 4) Wash -II solution
- 5) Elution Buffer
- 6) Spin Column Tube
- 7) Collection Tube.

- **Preparation Carrier RNA:**

5.65 ug of carrier RNA + adding 6.65 ml of elution buffer in it.

- **Preparation of Lysis Buffer:**

560 ul of Lysis Buffer +add 5.6 carrier RNA in it

- **Preparation of wash sol-I:**

98 ml of wash Buffer I add 130 ml of Ethanol in it. Store at 12-15 °c.

- **Preparation of wash Buffer-II:**

In 66 ml of concentrate wash Buffer II +add 160 ml of Ethanol in it and store at 15-25°C.

- **Contents of RTPCR kit (Labsystems Covidsure)**

- 1) Nuclease Free water
- 2) Primer Probe
- 3) Master mix 2x

- **Sample Collection of Nasopharyngeal Swab**

PPE (Personal Protective Equipment) properly with nitrile gloves, face mask and face shield. Take Nasopharyngeal swab stick and insert the stick in Right Nostril. Rub the swab stick over there and remove from one Nostril to another nostril and again do some procedure. After collection sample put the swab stick to viral transport medium and label properly on VTM and kept that VTM in cold Box.

- **Sample collection of oropharyngeal swab**

Wear PPE (Personal Protective Equipment) properly with nitrile gloves, face mask and face shield. Take oropharyngeal swab stick and tongue depressor. Insert tongue depressor to patient mouth and press tongue by using tongue Depressor and Insert oropharyngeal swab stick. To the pharyngeal region rub the stick and collect swab. Label them Properly and place this VTM in cold box for maintaining cold chain.

- **Sample Processing**

- 1) Once sample comes to Lab first of all check leakage sample. Label unique patient ID to the sample.

2) Sample Processing:

Take the ice flacks and put the sample in this ice flacks for maintaining cold chain Vortex the sample over vortex – 5 min. Then by using sterile forceps store the swab stick in VTM and Discard this swab stick in discard Jar containing 1% Hypochlorite solution. This all process should be done under Laminar Air Flow Bs II.

Then again vortex the sample for 10-20 sec. and then transfer sample in 5 ml serological Tube. Centrifuge it at 4°C for 1000 RPM For 5 min (cold centrifugation). After cold centrifugation, supernatant of sample in respective vials and store this vials at –70°C for long term storage.

• Nucleic Acid Extraction:

Take 560 ul Lysis Buffer of containing 5-6 ul carrier RNA add 200 ul sample in microcentrifuge tube. Add 560 ul ethanol, spin it for 10-15 sec. over vortex and spinner. Incubate at room temperature for 10 min. Transfer 630 ul of lysate in to spin column Tube. Centrifuge with high speed centrifuge at 3000 RPM for 1 min. Discard the deposit and transper spin tube to another column Tube. Transfer 630 ul of lysate into spin column tube and again centrifuge it at 8000 RPM for 1 min. Discard the deposit and transfer spin tube into another column. Add 500 ul wash Buffer I (which is previously Reconstituted) in to these spin column tube. Centrifuge it at 8000 RPM for 1 min. Discard deposite and transfer spin to another column. Add 500 ul wash Buffer II (Which is previously Reconstituted) into these spin column tube. Centrifuge at 14000 RPM for 3 min. Discard deposite and transfer spin for another column.

Now without adding any reagent just centrifuge spin column tube at 14000 RPM for 1 min. This is Dry spin. Place in new sterile microcentrifuge tube. Now add 60 ul Elution Buffer in this spin tube and centrifuge at 8000 RPM for 1 min. Now Discard spin tube and take microcentrifuge tube which is contains Eluted solution with nucleic Acid Which is used for further Investigation. Store this MCT at -80 ultra d- for long term storage.

• Master mix preparation:

Master mix or reagent mix preparation is done in clean room. Every reagent mix preparation is vary by kit manufacture. The Lab system Covid sure RTPCR kit. Following are the content of lab system

1. Nuclease Free Water
2. Primer Probe
3. Master Mix 2x
4. Positive Control

For single reaction we need to take reagent as follows:

Master mix	=	10 ul
PP	=	2 ul
NFW	=	3 ul
Total	=	15 ul

This 15 ul reagent mix place in PCR tube well on in 96 well. 0.2 ml plate cover it with Adhesive Film for PCR capstrip and place this in PCR coller.

- **Template Addition:**

Add 5 ul Extracted Nucleic Acid in to preped master mix. Seal it with adhesive Film on PCR cap strip and place this strip on plate in Thermo cycles.

- **PCR Run:** In Quant studio 55 by (Thermo Fishey we need to Add program)

- **Programing:**

1. Start Thermocycler and PC
2. Now open software of Quant studio Design and Analysis Software VI 5.1
3. Set the Experiment properties:

We need to select

- a) Experiment Name: Labsystem
- b) Barcode
- c) User Name
- d) Instrument type: Quant studio 55
- e) Block type: 96 wc 0.2 ml Block
- f) Experiment type: Standard arrive
- g) Chemistry: Tagman Reagent
- h) Run mode: Standard

- **Run Method:**

In Experiment Run method we need to add Temperature cycle in 2-35. First stage is holding stage, in this Deraturation is dry stage. Transcriptase process is done. In Holding stage our temperature ranges are 46 °C for 1 min, 95 °C for 2 min

- **PCR stage or cycling stage:**

In this DNA to copies of DNA done by Annealing & extension done at 95 °C for 10 sec. and 58°C for 30 sec and this repeat for 40 cycles.



Automated extraction



Manual extraction



Lot 96 well



Viral transport media (VTM)



Positive sample in -20 refrigerator



Quantstudio PCR Machine



-20 Refrigerator



Laminar air flow



Table 1: RTPCR tested sample data

Sr. No.	Date	Sample ID	Age/Yrs	Sex	Test
1	01-03-2021	187930	36	Male	Negative
2	01-03-2021	187931	23	Male	Negative
3	01-03-2021	187932	21	Male	Negative
4	01-03-2021	187933	50	Male	Negative
5	01-03-2021	187934	33	Male	Negative
6	01-03-2021	187947	22	Male	Negative
7	01-03-2021	187950	65	Female	Negative
8	01-03-2021	187951	48	Male	Negative
9	01-03-2021	187952	58	Female	Negative
10	01-03-2021	187953	50	Male	Negative
11	01-03-2021	187892	64	Female	Negative
12	01-03-2021	187893	23	Female	Negative
13	01-03-2021	187894	26	Female	Positive
14	01-03-2021	187804	32	Male	Negative
15	01-03-2021	187954	45	Male	Negative
16	01-03-2021	187963	61	Male	Negative
17	01-03-2021	187964	61	Male	Positive
18	01-03-2021	187965	68	Male	Negative
19	01-03-2021	187966	70	Male	Negative
20	01-03-2021	187967	70	Male	Negative
21	01-03-2021	187968	42	Female	Negative
22	01-03-2021	187984	44	Male	Negative
23	01-03-2021	187985	21	Male	Negative
24	01-03-2021	188019	68	Male	Negative
25	01-03-2021	188086	30	Female	Negative
26	01-03-2021	188087	30	Female	Negative
27	01-03-2021	188788	60	Female	Positive
28	01-03-2021	188537	38	Female	Positive
29	02-03-2021	188782	21	Female	Positive
30	02-03-2021	188884	67	Male	Negative

31	02-03-2021	188885	28	Male	Negative
32	02-03-2021	188886	54	Male	Negative
33	02-03-2021	188887	44	Male	Negative
34	02-03-2021	188888	55	Female	Negative
35	02-03-2021	188889	28	Female	Negative
36	02-03-2021	188893	23	Male	Negative
37	02-03-2021	188894	23	Male	Positive
38	02-03-2021	189198	29	Female	Negative
39	02-03-2021	189202	30	Male	Negative
40	02-03-2021	188934	28	Female	Positive
41	02-03-2021	189203	17	Female	Negative
42	02-03-2021	189204	16	Female	Negative
43	02-03-2021	189205	61	Female	Negative
44	02-03-2021	189206	75	Male	Negative
45	02-03-2021	189207	59	Female	Negative
46	02-03-2021	189247	34	Female	Negative
47	02-03-2021	189248	23	Female	Negative
48	02-03-2021	189627	62	Female	Negative
49	02-03-2021	189628	80	Female	Positive
50	02-03-2021	189629	44	Male	Negative
51	02-03-2021	189630	16	Female	Negative
52	02-03-2021	189635	56	Male	Negative
53	02-03-2021	189636	17	Male	Negative
54	02-03-2021	189661	29	Female	Negative
55	02-03-2021	189848	45	Male	Negative
56	02-03-2021	189842	21	Female	Negative
57	02-03-2021	189803	60	Female	Positive
58	02-03-2021	190290	22	Male	Negative
59	02-03-2021	190291	38	Female	Negative
60	02-03-2021	190295	55	Male	Negative
61	02-03-2021	190296	50	Female	Positive
62	02-03-2021	190297	74	Female	Negative

63	03-03-2021	190299	54	Male	Negative
64	03-03-2021	190536	45	Female	Negative
65	03-03-2021	191038	45	Male	Negative
66	03-03-2021	191039	43	Male	Negative
67	03-03-2021	191040	28	Male	Positive
68	03-03-2021	191041	27	Male	Negative
69	03-03-2021	191047	25	Female	Negative
70	03-03-2021	191048	23	Female	Positive
71	03-03-2021	191049	21	Female	Negative
72	03-03-2021	191050	22	Female	Negative
73	03-03-2021	191051	33	Female	Negative
74	03-03-2021	191052	21	Female	Positive
75	03-03-2021	191053	18	Male	Negative
76	03-03-2021	191183	26	Male	Negative
77	03-03-2021	191184	35	Male	Positive
78	03-03-2021	191194	44	Male	Negative
79	03-03-2021	191195	43	Male	Positive
80	03-03-2021	191207	26	Female	Negative
81	03-03-2021	191482	38	Female	Negative
82	03-03-2021	191495	24	Female	Positive
83	03-03-2021	191501	15	Male	Negative
84	03-03-2021	191483	58	Male	Negative
85	03-03-2021	191484	32	Male	Negative
86	03-03-2021	191485	70	Female	Positive
87	03-03-2021	191486	54	Male	Negative
88	03-03-2021	191487	13	Female	Positive
89	03-03-2021	191488	38	Female	Negative
90	03-03-2021	191489	70	Female	Negative
91	03-03-2021	191490	75	Female	Negative
92	03-03-2021	191491	24	Female	Negative
93	03-03-2021	191492	26	Female	Negative
94	03-03-2021	191493	37	Female	Negative

95	03-03-2021	191494	27	Female	Positive
96	03-03-2021	191864	38	Male	Negative
97	03-03-2021	191865	50	Male	Positive
98	04-03-2021	191984	27	Female	Negative
99	04-03-2021	191985	28	Female	Negative
100	04-03-2021	192200	69	Male	Negative
101	04-03-2021	192201	28	Male	Negative
102	04-03-2021	192202	35	Female	Positive
103	04-03-2021	192203	52	Male	Positive
104	04-03-2021	192204	25	Female	Negative
105	04-03-2021	192205	26	Female	Negative
106	04-03-2021	192213	53	Male	Negative
107	04-03-2021	192214	54	Male	Negative
108	04-03-2021	192215	69	Male	Positive
109	04-03-2021	192137	22	Male	Negative
110	04-03-2021	192138	44	Male	Negative
111	04-03-2021	192485	1 day	Male	Negative
112	04-03-2021	192514	20	Female	Negative
113	04-03-2021	192515	21	Female	Negative
114	04-03-2021	192519	30	Female	Negative
115	04-03-2021	192520	29	Female	Negative
116	04-03-2021	192521	65	Male	Negative
117	04-03-2021	192522	32	Female	Positive
118	04-03-2021	192523	34	Male	Positive
119	04-03-2021	192524	22	Male	Negative
120	04-03-2021	192527	25	Male	Negative
121	04-03-2021	192528	21	Male	Positive
122	04-03-2021	192529	20	Male	Negative
123	04-03-2021	192731	28	Male	Negative
124	04-03-2021	192642	24	Male	Positive
125	04-03-2021	192923	51	Male	Negative
126	04-03-2021	192924	71	Male	Negative

127	04-03-2021	192950	19	Male	Positive
128	04-03-2021	193024	29	Male	Negative
129	04-03-2021	193230	75	Male	Negative
130	04-03-2021	193242	48	Male	Negative
131	05-03-2021	193243	27	Male	Negative
132	05-03-2021	193246	23	Male	Negative
133	05-03-2021	193247	19	Male	Positive
134	05-03-2021	193248	25	Male	Negative
135	05-03-2021	193249	29	Male	Negative
136	05-03-2021	193250	48	Male	Positive
137	05-03-2021	193251	49	Male	Positive
138	05-03-2021	193252	54	Male	Positive
139	05-03-2021	193253	30	Male	Negative
140	05-03-2021	193258	48	Male	Negative
141	05-03-2021	193574	23	Female	Negative
142	05-03-2021	193575	23	Female	Positive
143	05-03-2021	193576	26	Female	Negative
144	05-03-2021	193577	24	Female	Positive
145	05-03-2021	193578	28	Female	Negative
146	05-03-2021	193579	32	Female	Negative
147	05-03-2021	193580	19	Female	Negative
148	05-03-2021	193581	19	Female	Positive
149	05-03-2021	193582	28	Female	Negative
150	05-03-2021	193590	36	Male	Negative
151	05-03-2021	193591	21	Male	Positive
152	05-03-2021	193592	51	Male	Negative
153	05-03-2021	193596	73	Female	Negative
154	05-03-2021	193597	56	Male	Positive
155	05-03-2021	193604	26	Female	Negative
156	05-03-2021	193681	30	Female	Positive
157	05-03-2021	193984	55	Male	Negative
158	05-03-2021	193985	17	Male	Positive

159	05-03-2021	193986	65	Male	Negative
160	05-03-2021	193987	80	Male	Negative
161	05-03-2021	193988	82	Female	Positive
162	05-03-2021	193770	20	Female	Negative
163	05-03-2021	193995	53	Male	Negative
164	05-03-2021	193771	28	Male	Positive
165	05-03-2021	193996	27	Male	Negative
166	05-03-2021	193997	38	Male	Positive
167	05-03-2021	193998	21	Male	Negative
168	05-03-2021	193999	28	Female	Positive
169	05-03-2021	194000	20	Female	Negative
170	05-03-2021	194618	45	Male	Negative
171	05-03-2021	194619	23	Female	Negative
172	06-03-2021	194368	28	Female	Negative
173	06-03-2021	194369	33	Female	Negative
174	06-03-2021	194370	30	Female	Positive
175	06-03-2021	194371	1day	Female	Negative
176	06-03-2021	194372	36	Female	Negative
177	06-03-2021	194381	12	Female	Negative
178	06-03-2021	194476	28	Male	Positive
179	06-03-2021	194477	47	Female	Negative
180	06-03-2021	194478	23	Male	Negative
181	06-03-2021	194479	75	Female	Negative
182	06-03-2021	194480	26	Female	Negative
183	06-03-2021	194878	27	Male	Negative
184	06-03-2021	194879	20	Male	Negative
185	06-03-2021	194880	26	Male	Positive
186	06-03-2021	194884	47	Female	Negative
187	06-03-2021	194885	26	Male	Positive
188	06-03-2021	194886	27	Female	Negative
189	06-03-2021	194887	44	Female	Negative
190	06-03-2021	194888	23	Female	Negative

191	06-03-2021	194956	60	Female	Negative
192	06-03-2021	194957	45	Male	Negative
193	06-03-2021	194958	72	Male	Positive
194	06-03-2021	195081	32	Female	Negative
195	06-03-2021	195082	65	Male	Negative
196	06-03-2021	195083	65	Male	Negative
197	06-03-2021	195084	35	Female	Negative
198	06-03-2021	195085	40	Male	Negative
199	06-03-2021	195086	20	Female	Positive
200	06-03-2021	195087	20	Female	Negative
201	06-03-2021	195093	63	Male	Negative
202	06-03-2021	195621	33	Female	Positive
203	07-03-2021	195584	30	Male	Negative
204	07-03-2021	195623	2	Female	Negative
205	07-03-2021	195624	26	Female	Negative
206	07-03-2021	195625	25	Male	Negative
207	07-03-2021	195626	45	Male	Negative
208	07-03-2021	195627	28	Male	Negative
209	07-03-2021	195633	23	Female	Negative
210	07-03-2021	195634	47	Male	Negative
211	07-03-2021	195635	24	Female	Positive
212	07-03-2021	195636	53	Female	Negative
213	07-03-2021	195637	26	Female	Negative
214	07-03-2021	195816	35	Male	Negative
215	07-03-2021	196160	29	Male	Negative
216	07-03-2021	196166	26	Female	Negative
217	07-03-2021	196167	29	Female	Positive
218	07-03-2021	196168	63	Male	Negative
219	07-03-2021	196169	42	Male	Negative
220	07-03-2021	196170	58	Male	Negative
221	07-03-2021	196205	21	Male	Negative
222	07-03-2021	196206	70	Male	Negative

223	07-03-2021	196207	48	Male	Negative
224	07-03-2021	196208	50	Female	Negative
225	07-03-2021	196209	50	Male	Positive
226	07-03-2021	196210	40	Male	Negative
227	07-03-2021	196211	28	Male	Negative
228	07-03-2021	196374	27	Female	Negative
229	07-03-2021	196501	27	Female	Negative
230	07-03-2021	196502	24	Female	Negative
231	08-03-2021	196514	45	Male	Negative
232	08-03-2021	196515	35	Male	Positive
233	08-03-2021	196516	26	Male	Negative
234	08-03-2021	196525	42	Female	Negative
235	08-03-2021	196526	36	Male	Positive
236	08-03-2021	196527	16	Male	Negative
237	08-03-2021	196534	60	Male	Negative
238	08-03-2021	196535	47	Male	Negative
239	08-03-2021	196536	29	Male	Negative
240	08-03-2021	196537	40	Male	Negative
241	08-03-2021	196538	23	Female	Positive
242	08-03-2021	196548	37	Male	Negative
243	08-03-2021	196549	60	Female	Positive
244	08-03-2021	196550	39	Male	Negative
245	08-03-2021	196551	28	Male	Negative
246	08-03-2021	196552	28	Female	Negative
247	08-03-2021	196560	21	Male	Negative
248	08-03-2021	196561	31	Male	Positive
249	08-03-2021	196562	21	Male	Negative
250	08-03-2021	196563	18	Male	Negative
251	08-03-2021	196564	20	Female	Positive
252	08-03-2021	196568	30	Female	Negative
253	08-03-2021	196569	62	Male	Positive
254	08-03-2021	197027	26	Female	Negative

255	08-03-2021	197028	27	Female	Positive
256	08-03-2021	197029	54	Female	Negative
257	08-03-2021	197030	28	Female	Negative
258	08-03-2021	197035	23	Female	Positive
259	08-03-2021	197036	25	Female	Negative
260	08-03-2021	197308	01 day	Female	Negative
261	08-03-2021	197309	22	Female	Positive
262	08-03-2021	197310	27	Male	Negative
263	08-03-2021	197327	36	Male	Positive
264	09-03-2021	197313	65	Male	Negative
265	09-03-2021	197314	55	Male	Negative
266	09-03-2021	197315	22	Male	Positive
267	09-03-2021	197316	32	Male	Negative
268	09-03-2021	197317	55	Male	Negative
269	09-03-2021	197318	26	Female	Positive
270	09-03-2021	197326	74	Male	Negative
271	09-03-2021	197327	36	Male	Positive
272	09-03-2021	197328	60	Male	Positive
273	09-03-2021	197329	75	Female	Negative
274	09-03-2021	197330	35	Female	Positive
275	09-03-2021	197331	36	Male	Negative
276	09-03-2021	197332	70	Male	Positive
277	09-03-2021	197333	20	Male	Negative
278	09-03-2021	197345	7	Male	Negative
279	09-03-2021	197346	82	Female	Positive
280	09-03-2021	197347	51	Male	Positive
281	09-03-2021	197670	22	Female	Negative
282	09-03-2021	197671	23	Female	Positive
283	09-03-2021	197672	25	Female	Negative
284	09-03-2021	197789	36	Male	Negative
285	09-03-2021	197796	65	Male	Negative
286	09-03-2021	197833	62	Male	Negative

287	09-03-2021	197834	20	Female	Negative
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289	09-03-2021	197923	26	Male	Positive
290	09-03-2021	197924	18	Female	Negative
291	09-03-2021	197927	58	Female	Negative
292	09-03-2021	197928	21	Male	Positive
293	09-03-2021	197929	49	Female	Positive
294	09-03-2021	197930	22	Female	Positive
295	09-03-2021	197931	22	Female	Positive
296	09-03-2021	197932	25	Male	Positive
297	09-03-2021	197933	20	Female	Negative
298	09-03-2021	197934	56	Male	Negative
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300	09-03-2021	197936	25	Male	Negative
301	09-03-2021	197937	70	Male	Positive
302	09-03-2021	198455	55	Male	Positive
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304	09-03-2021	198463	66	Male	Negative
305	09-03-2021	198472	28	Female	Positive
306	09-03-2021	198473	28	Male	Negative
307	09-03-2021	198546	26	Male	Negative
308	09-03-2021	198547	23	Male	Positive
309	09-03-2021	198548	25	Male	Negative
310	10-03-2021	198671	42	Male	Negative
311	10-03-2021	198672	55	Female	Positive
312	10-03-2021	198673	29	Male	Negative
313	10-03-2021	198674	45	Male	Positive
314	10-03-2021	198675	32	Male	Negative
315	10-03-2021	198832	37	Female	Negative
316	10-03-2021	198833	40	Female	Positive
317	10-03-2021	198834	29	Female	Positive
318	10-03-2021	198835	20	Female	Negative

319	10-03-2021	198836	33	Female	Negative
320	10-03-2021	198837	43	Female	Negative
321	10-03-2021	198838	29	Female	Positive
322	10-03-2021	198844	46	Female	Positive
323	10-03-2021	198845	25	Female	Negative
324	10-03-2021	198846	40	Female	Negative
325	10-03-2021	198849	30	Female	Negative
326	10-03-2021	198850	28	Female	Positive
327	10-03-2021	198939	23	Female	Negative
328	10-03-2021	198940	30	Female	Positive
329	10-03-2021	198941	21	Female	Negative
330	10-03-2021	198942	35	Female	Negative
331	10-03-2021	198943	40	Female	Positive
332	10-03-2021	198944	27	Male	Positive
333	10-03-2021	198945	21	Female	Negative
334	10-03-2021	198948	57	Male	Negative
335	10-03-2021	198949	45	Female	Positive
336	10-03-2021	198950	54	Male	Negative
337	10-03-2021	198951	21	Male	Positive
338	10-03-2021	198952	20	Male	Negative
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340	10-03-2021	198954	20	Female	Negative
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342	10-03-2021	198956	64	Female	Positive
343	10-03-2021	198957	66	Male	Negative
344	10-03-2021	199020	48	Male	Negative
345	10-03-2021	199106	43	Female	Positive
346	10-03-2021	199107	58	Female	Negative
347	10-03-2021	199108	35	Male	Negative
348	10-03-2021	199109	62	Male	Positive
349	10-03-2021	499110	9	Female	Negative
350	10-03-2021	199111	14	Female	Positive

351	10-03-2021	199112	19	Female	Negative
352	11-03-2021	199690	15	Female	Positive
353	11-03-2021	199691	19	Male	Negative
354	11-03-2021	199692	16	Male	Positive
355	11-03-2021	199693	42	Female	Positive
356	11-03-2021	199694	50	Male	Positive
357	11-03-2021	199708	39	Male	Negative
358	11-03-2021	199709	27	Female	Negative
359	11-03-2021	199710	26	Female	Positive
360	11-03-2021	199711	26	Female	Negative
361	11-03-2021	200001	17	Female	Positive
362	11-03-2021	200002	19	Female	Negative
363	11-03-2021	200005	37	Male	Negative
364	11-03-2021	200006	30	Female	Positive
365	11-03-2021	200007	60	Female	Negative
366	11-03-2021	200015	25	Male	Negative
367	11-03-2021	200016	45	Male	Positive
368	11-03-2021	200017	50	Male	Negative
369	11-03-2021	200018	30	Female	Positive
370	11-03-2021	200022	37	Female	Negative
371	11-03-2021	200023	51	Female	Positive
372	11-03-2021	199784	57	Male	Negative
373	11-03-2021	199903	10	Male	Positive
374	11-03-2021	199993	10	Female	Negative
375	11-03-2021	200102	20	Female	Negative
376	11-03-2021	200103	31	Female	Positive
377	11-03-2021	200104	26	Female	Positive
378	11-03-2021	200105	25	Female	Negative
379	11-03-2021	200110	62	Male	Negative
380	11-03-2021	200111	60	Male	Positive
381	11-03-2021	200112	47	Male	Positive
382	11-03-2021	200939	43	Female	Positive

383	11-03-2021	200940	18	Female	Positive
384	11-03-2021	200941	16	Male	Positive
385	11-03-2021	200942	45	Female	Positive
386	11-03-2021	200943	42	Male	Negative
387	11-03-2021	200944	42	Male	Positive
388	11-03-2021	200945	32	Male	Negative
389	11-03-2021	200948	15	Female	Negative
390	11-03-2021	200949	36	Female	Positive
391	11-03-2021	200950	38	Male	Negative
392	11-03-2021	200951	50	Male	Negative
393	11-03-2021	200952	32	Female	Positive
394	11-03-2021	200953	40	Male	Negative
395	11-03-2021	200236	34	Male	Negative
396	11-03-2021	200239	30	Male	Negative
397	11-03-2021	200240	51	Female	Positive
398	11-03-2021	200241	34	Female	Negative
399	12-03-2021	201103	34	Female	Negative
400	12-03-2021	201104	34	Female	Positive
401	12-03-2021	201105	65	Female	Negative
402	12-03-2021	201113	46	Female	Negative
403	12-03-2021	201114	29	Female	Positive
404	12-03-2021	201115	27	Female	Negative
405	12-03-2021	201123	25	Female	Negative
406	12-03-2021	201124	24	Female	Positive
407	12-03-2021	201125	25	Female	Negative
408	12-03-2021	201129	18	Female	Negative
409	12-03-2021	201130	26	Female	Positive
410	12-03-2021	201131	60	Female	Positive
411	12-03-2021	201132	80	Female	Positive
412	12-03-2021	201133	74	Female	Negative
413	12-03-2021	201223	35	Female	Negative
414	12-03-2021	201224	25	Female	Positive

415	12-03-2021	201225	29	Male	Negative
416	12-03-2021	201226	34	Female	Positive
417	12-03-2021	201227	31	Male	Negative
418	12-03-2021	201235	60	Female	Negative
419	12-03-2021	201236	51	Male	Positive
420	12-03-2021	201237	71	Female	Positive
421	12-03-2021	201238	43	Male	Positive
422	12-03-2021	201251	49	Female	Negative
423	12-03-2021	201252	26	Male	Positive
424	12-03-2021	201253	52	Male	Negative
425	12-03-2021	201257	31	Male	Negative
426	12-03-2021	201258	19	Male	Positive
427	12-03-2021	201304	31	Female	Positive
428	12-03-2021	201305	30	Female	Negative
429	12-03-2021	201306	27	Female	Positive
430	12-03-2021	201307	24	Female	Negative
431	12-03-2021	201308	22	Female	Negative
432	12-03-2021	201309	23	Female	Positive
433	12-03-2021	202055	24	Female	Negative
434	12-03-2021	202056	29	Male	Positive
435	12-03-2021	202057	35	Female	Negative
436	12-03-2021	202058	35	Female	Negative
437	12-03-2021	202059	40	Male	Positive
438	12-03-2021	202060	62	Male	Positive
439	12-03-2021	202061	70	Female	Negative
440	12-03-2021	202062	39	Male	Positive
441	12-03-2021	202074	35	Female	Positive
442	12-03-2021	202075	69	Male	Negative
443	13-03-2021	202370	26	Male	Negative
444	13-03-2021	202371	23	Male	Positive
445	13-03-2021	202372	54	Male	Negative
446	13-03-2021	202392	57	Female	Positive

447	13-03-2021	202393	20	Female	Negative
448	13-03-2021	202398	52	Male	Negative
449	13-03-2021	202399	31	Male	Negative
450	13-03-2021	202400	48	Male	Positive
451	13-03-2021	202401	26	Male	Negative
452	13-03-2021	202402	28	Male	Negative
453	13-03-2021	202403	48	Female	Negative
454	13-03-2021	202404	32	Male	Negative
455	13-03-2021	202405	37	Female	Positive
456	13-03-2021	202406	28	Female	Negative
457	13-03-2021	202407	21	Male	Negative
458	13-03-2021	202408	51	Female	Negative
459	13-03-2021	202409	27	Female	Negative
460	13-03-2021	202410	29	Female	Negative
461	13-03-2021	202411	52	Female	Positive
462	13-03-2021	202412	63	Male	Negative
463	13-03-2021	202484	11	Female	Negative
464	13-03-2021	202742	42	Female	Negative
465	13-03-2021	202743	29	Female	Positive
466	13-03-2021	203140	82	Male	Positive
467	13-03-2021	203141	82	Female	Negative
468	14-03-2021	203366	33	Female	Negative
469	14-03-2021	203367	54	Male	Positive
470	14-03-2021	203368	37	Female	Negative
471	14-03-2021	203471	30	Male	Positive
472	14-03-2021	203472	22	Female	Negative
473	14-03-2021	203675	25	Female	Negative
474	14-03-2021	203676	28	Female	Positive
475	14-03-2021	203677	25	Female	Negative
476	14-03-2021	203685	68	Female	Negative
477	14-03-2021	203686	22	Male	Positive
478	14-03-2021	203687	23	Male	Negative

479	14-03-2021	203688	50	Male	Negative
480	14-03-2021	203689	40	Male	Negative
481	14-03-2021	203690	26	Male	Positive
482	14-03-2021	203691	48	Female	Negative
483	14-03-2021	204068	40	Male	Negative
484	14-03-2021	204069	30	Female	Positive
485	14-03-2021	204070	26	Female	Negative
486	14-03-2021	204071	40	Male	Negative
487	14-03-2021	204072	21	Female	Positive
488	14-03-2021	204073	19	Male	Negative
489	14-03-2021	204074	24	Female	Negative
490	14-03-2021	204075	45	Male	Negative
491	14-03-2021	204076	65	Male	Positive
492	14-03-2021	204077	21	Male	Positive
493	15-03-2021	204444	30	Male	Negative
494	15-03-2021	204445	55	Male	Negative
495	15-03-2021	204492	68	Female	Negative
496	15-03-2021	204493	70	Male	Positive
497	15-03-2021	204494	68	Female	Positive
498	15-03-2021	204512	25	Female	Negative
499	15-03-2021	204513	20	Female	Positive
500	15-03-2021	204519	51	Male	Positive
501	15-03-2021	204605	23	Male	Negative
502	15-03-2021	204606	63	Male	Positive
503	15-03-2021	204608	76	Male	Positive
504	15-03-2021	204609	40	Male	Negative
505	15-03-2021	204611	31	Male	Positive
506	15-03-2021	204620	19	Male	Negative
507	15-03-2021	204621	20	Male	Positive
508	15-03-2021	204622	20	Male	Positive
509	15-03-2021	204596	19	Male	Negative
510	15-03-2021	204597	26	Male	Negative

511	15-03-2021	204695	68	Male	Positive
512	15-03-2021	204696	19	Male	Negative
513	15-03-2021	204697	51	Female	Positive
514	15-03-2021	204698	30	Female	Negative
515	15-03-2021	205062	37	Male	Positive
516	15-03-2021	205401	38	Male	Negative
517	15-03-2021	205402	40	Male	Positive
518	15-03-2021	205403	33	Female	Positive
519	15-03-2021	205404	55	Female	Positive
520	15-03-2021	205364	46	Male	Positive
521	15-03-2021	205515	23	Male	Negative
522	15-03-2021	204608	76	Male	Positive
523	16-03-2021	205572	16	Male	Negative
524	16-03-2021	205573	65	Male	Positive
525	16-03-2021	205574	67	Male	Negative
526	16-03-2021	205575	70	Male	Positive
527	16-03-2021	205576	82	Male	Positive
528	16-03-2021	205577	19	Male	Positive
529	16-03-2021	205578	24	Male	Positive
530	16-03-2021	205579	60	Female	Negative
531	16-03-2021	205580	23	Male	Negative
532	16-03-2021	205581	63	Female	Positive
533	16-03-2021	205582	26	Female	Negative
534	16-03-2021	205583	27	Male	Negative
535	16-03-2021	205584	28	Female	Positive
536	16-03-2021	205585	30	Male	Positive
537	16-03-2021	205586	64	Male	Positive
538	16-03-2021	205587	48	Female	Negative
539	16-03-2021	205588	41	Female	Positive
540	16-03-2021	206054	52	Female	Positive
541	16-03-2021	206055	45	Female	Negative
542	16-03-2021	204597	30	Male	Negative

543	16-03-2021	207185	32	Male	Negative
544	16-03-2021	207293	48	Female	Positive
545	16-03-2021	207295	63	Female	Negative
546	16-03-2021	207296	38	Male	Negative
547	16-03-2021	207298	75	Female	Positive
548	16-03-2021	207299	56	Female	Positive
549	16-03-2021	207300	60	Male	Positive
550	16-03-2021	206076	28	Female	Negative
551	16-03-2021	206077	26	Female	Negative
552	16-03-2021	206078	28	Female	Negative
553	16-03-2021	206079	29	Female	Negative
554	16-03-2021	206080	20	Female	Positive
555	16-03-2021	206081	28	Female	Negative
556	16-03-2021	206082	42	Female	Negative
557	16-03-2021	206083	29	Female	Negative
558	17-03-2021	207403	24	Female	Negative
559	17-03-2021	207404	75	Female	Negative
560	17-03-2021	207405	12	Male	Positive
561	17-03-2021	207406	71	Female	Negative
562	17-03-2021	207407	38	Male	Positive
563	17-03-2021	207408	35	Male	Negative
564	17-03-2021	207409	40	Female	Negative
565	17-03-2021	207410	23	Female	Negative
566	17-03-2021	207411	71	Male	Positive
567	17-03-2021	207412	71	Male	Positive
568	17-03-2021	207414	32	Female	Negative
569	17-03-2021	207537	62	Male	Negative
570	17-03-2021	208160	21	Male	Negative
571	17-03-2021	208161	20	Male	Positive
572	17-03-2021	208162	21	Male	Positive
573	17-03-2021	208163	22	Male	Positive
574	17-03-2021	208164	18	Female	Negative

575	17-03-2021	208165	24	Female	Positive
576	17-03-2021	208166	22	Male	Negative
577	17-03-2021	208168	36	Male	Negative
578	17-03-2021	208169	29	Female	Positive
579	17-03-2021	208170	52	Male	Negative
580	17-03-2021	208148	56	Female	Positive
581	17-03-2021	208149	60	Male	Negative
582	17-03-2021	208152	18	Female	Positive
583	17-03-2021	208153	19	Male	Positive
584	17-03-2021	208156	73	Male	Positive
585	17-03-2021	208157	39	Female	Negative
586	17-03-2021	208158	23	Female	Negative
587	17-03-2021	208159	20	Male	Positive
588	18-03-2021	208830	50	Male	Negative
589	18-03-2021	208831	40	Male	Negative
590	18-03-2021	208834	75	Male	Positive
591	18-03-2021	208932	42	Female	Negative
592	18-03-2021	208940	32	Male	Positive
593	18-03-2021	209173	35	Male	Negative
594	18-03-2021	209174	52	Male	Positive
595	18-03-2021	209441	20	Male	Negative
596	18-03-2021	209442	63	Male	Negative
597	18-03-2021	209443	46	Male	Negative
598	18-03-2021	209444	40	Female	Positive
599	18-03-2021	209445	35	Male	Negative
600	18-03-2021	209446	75	Female	Negative
601	18-03-2021	209447	45	Male	Positive
602	18-03-2021	209448	68	Male	Negative
603	18-03-2021	209843	44	Male	Positive
604	18-03-2021	209844	49	Female	Negative
605	18-03-2021	209845	33	Male	Negative
606	18-03-2021	209846	58	Male	Negative

607	18-03-2021	210000	01 day	Female	Negative
608	18-03-2021	210011	20	Male	Negative
609	18-03-2021	210012	20	Male	Positive
610	18-03-2021	210013	28	Female	Negative
611	18-03-2021	210014	33	Male	Negative
612	18-03-2021	210015	18	Male	Negative
613	18-03-2021	210016	66	Male	Negative
614	18-03-2021	210017	38	Female	Positive
615	18-03-2021	210018	38	Male	Negative
616	18-03-2021	210019	76	Female	Positive
617	18-03-2021	210020	60	Female	Negative
618	18-03-2021	210021	19	Male	Negative
619	18-03-2021	210022	19	Male	Positive
620	18-03-2021	210023	60	Male	Negative
621	18-03-2021	210589	36	Male	Negative
622	18-03-2021	209891	38	Male	Negative
623	19-03-2021	211094	28	Male	Negative
624	19-03-2021	211095	72	Male	Positive
625	19-03-2021	211096	38	Male	Negative
626	19-03-2021	211100	28	Male	Positive
627	19-03-2021	211101	35	Male	Negative
628	19-03-2021	211109	22	Female	Negative
629	19-03-2021	211110	60	Female	Positive
630	19-03-2021	211111	68	Male	Positive
631	19-03-2021	211112	9	Male	Negative
632	19-03-2021	211113	49	Male	Negative
633	19-03-2021	211114	27	Male	Positive
634	19-03-2021	211115	73	Female	Negative
635	19-03-2021	211641	2 days	Male	Negative
636	19-03-2021	211642	55	Male	Positive
637	19-03-2021	211643	25	Male	Negative
638	19-03-2021	212070	45	Male	Positive

639	19-03-2021	212071	33	Male	Negative
640	19-03-2021	212072	44	Female	Positive
641	19-03-2021	212073	94	Male	Negative
642	19-03-2021	212075	50	Male	Positive
643	19-03-2021	212076	32	Female	Negative
644	19-03-2021	211284	26	Male	Positive
645	19-03-2021	211860	50	Female	Positive
646	19-03-2021	211861	35	Male	Positive
647	19-03-2021	211862	47	Female	Positive
648	19-03-2021	211863	57	Male	Positive
649	19-03-2021	211864	79	Male	Positive
650	19-03-2021	211870	41	Female	Negative
651	19-03-2021	211871	51	Female	Positive
652	19-03-2021	211872	35	Female	Positive
653	20-03-2021	213813	63	Female	Negative
654	20-03-2021	213814	78	Female	Negative
655	20-03-2021	213815	41	Male	Positive
656	20-03-2021	213816	28	Female	Negative
657	20-03-2021	213817	49	Male	Positive
658	20-03-2021	213818	22	Female	Positive
659	20-03-2021	213819	22	Female	Negative
660	20-03-2021	213823	29	Male	Negative
661	20-03-2021	213824	37	Male	Positive
662	20-03-2021	213825	70	Male	Positive
663	20-03-2021	213826	32	Male	Positive
664	20-03-2021	213827	22	Male	Positive
665	20-03-2021	213828	33	Female	Negative
666	20-03-2021	213829	20	Female	Negative
667	20-03-2021	213830	16	Male	Negative
668	20-03-2021	213831	24	Male	Negative
669	20-03-2021	213832	43	Female	Positive
670	20-03-2021	213833	28	Female	Negative

671	20-03-2021	213766	61	Male	Negative
672	20-03-2021	213964	8	Female	Negative
673	20-03-2021	213965	68	Female	Positive
674	20-03-2021	214151	32	Male	Negative
675	20-03-2021	214152	63	Female	Positive
676	20-03-2021	214153	56	Male	Negative
677	20-03-2021	214904	70	Male	Negative
678	20-03-2021	214905	75	Male	Positive
679	20-03-2021	214906	75	Male	Negative
680	20-03-2021	214907	50	Male	Negative
681	20-03-2021	214908	70	Male	Negative
682	20-03-2021	214909	59	Male	Negative
683	21-03-2021	214915	56	Male	Negative
684	21-03-2021	214916	60	Male	Positive
685	21-03-2021	214917	02 DAYS	Female	Negative
686	21-03-2021	214918	75	Male	Negative
687	21-03-2021	214919	49	Female	Positive
688	21-03-2021	214920	35	Female	Positive
689	21-03-2021	214921	42	Female	Negative
690	21-03-2021	214927	71	Male	Negative
691	21-03-2021	214928	36	Male	Positive
692	21-03-2021	214929	53	Male	Negative
693	21-03-2021	214934	50	Male	Negative
694	21-03-2021	214935	40	Female	Positive
695	21-03-2021	214936	53	Female	Negative
696	21-03-2021	214940	80	Female	Negative
697	21-03-2021	214941	60	Male	Positive
698	21-03-2021	214942	58	Female	Negative
699	21-03-2021	214950	45	Female	Positive
700	21-03-2021	214951	22	Female	Negative
701	21-03-2021	215250	45	Male	Negative
702	21-03-2021	215296	59	Male	Positive

703	21-03-2021	215265	60	Male	Negative
704	21-03-2021	215403	60	Male	Negative
705	21-03-2021	216187	60	Male	Negative
706	21-03-2021	215400	22	Male	Positive
707	21-03-2021	215250	17	Male	Positive
708	21-03-2021	215402	30	Male	Negative
709	21-03-2021	216183	58	Male	Negative
710	21-03-2021	216184	55	Female	Positive
711	21-03-2021	216185	83	Female	Positive
712	21-03-2021	216186	33	Male	Positive
713	21-03-2021	216188	36	Male	Negative
714	21-03-2021	215487	35	Male	Positive
715	21-03-2021	215488	70	Male	Positive
716	21-03-2021	215746	75	Male	Positive
717	21-03-2021	216305	28	Male	Positive
718	22-03-2021	216308	55	Male	Negative
719	22-03-2021	216309	25	Male	Positive
720	22-03-2021	216310	52	Male	Positive
721	22-03-2021	216311	17	Male	Negative
722	22-03-2021	216313	49	Female	Negative
723	22-03-2021	216314	17	Female	Positive
724	22-03-2021	216315	29	Male	Negative
725	22-03-2021	216316	23	Female	Positive
726	22-03-2021	216317	19	Female	Positive
727	22-03-2021	216319	32	Female	Negative
728	22-03-2021	216745	68	Female	Negative
729	22-03-2021	216746	39	Male	Positive
730	22-03-2021	216747	57	Female	Negative
731	22-03-2021	216754	39	Female	Negative
732	22-03-2021	216755	30	Male	Positive
733	22-03-2021	216756	63	Male	Negative
734	22-03-2021	216760	33	Male	Positive

735	22-03-2021	216761	67	Female	Negative
736	22-03-2021	216762	25	Female	Negative
737	22-03-2021	216763	63	Female	Positive
738	22-03-2021	216767	29	Female	Negative
739	22-03-2021	216768	59	Male	Positive
740	22-03-2021	216879	25	Female	Negative
741	22-03-2021	216880	50	Female	Positive
742	22-03-2021	216881	55	Female	Positive
743	22-03-2021	216882	01 day	Female	Negative
744	22-03-2021	216883	64	Male	Positive
745	22-03-2021	216885	45	Female	Negative
746	22-03-2021	216886	26	Female	Positive
747	22-03-2021	216889	63	Female	Positive
748	22-03-2021	216891	32	Male	Negative
749	22-03-2021	216892	32	Male	Positive
750	22-03-2021	216893	68	Female	Positive
751	22-03-2021	216894	40	Male	Positive
752	22-03-2021	216895	43	Male	Negative
753	23-03-2021	218303	19	Female	Negative
754	23-03-2021	218304	30	Male	Positive
755	23-03-2021	218305	35	Female	Positive
756	23-03-2021	218306	14	Female	Negative
757	23-03-2021	218310	70	Female	Negative
758	23-03-2021	218311	33	Male	Positive
759	23-03-2021	218312	25	Female	Negative
760	23-03-2021	218313	52	Male	Negative
761	23-03-2021	218314	31	Female	Positive
762	23-03-2021	218315	6	Female	Positive
763	23-03-2021	218316	37	Male	Positive
764	23-03-2021	218317	49	Female	Positive
765	23-03-2021	218318	34	Male	Negative
766	23-03-2021	218319	34	Male	Positive

767	23-03-2021	218437	21	Male	Positive
768	23-03-2021	218438	45	Female	Negative
769	23-03-2021	218441	61	Male	Positive
770	23-03-2021	218442	34	Male	Negative
771	23-03-2021	218408	61	Female	Positive
772	23-03-2021	218420	42	Female	Positive
773	23-03-2021	218421	20	Male	Positive
774	23-03-2021	218619	45	Male	Positive
775	23-03-2021	218620	63	Male	Negative
776	23-03-2021	218636	73	Male	Negative
777	23-03-2021	218637	53	Male	Positive
778	23-03-2021	218638	36	Male	Negative
779	23-03-2021	218649	43	Male	Positive
780	23-03-2021	218650	31	Female	Negative
781	23-03-2021	219048	25	Female	Positive
782	23-03-2021	219152	43	Male	Positive
783	24-03-2021	219829	26	Female	Negative
784	24-03-2021	219830	68	Male	Positive
785	24-03-2021	219831	27	Male	Negative
786	24-03-2021	219833	18	Female	Negative
787	24-03-2021	219834	28	Male	Positive
788	24-03-2021	220310	55	Male	Positive
789	24-03-2021	220311	56	Male	Negative
790	24-03-2021	220312	72	Female	Positive
791	24-03-2021	220313	45	Male	Negative
792	24-03-2021	220314	45	Male	Negative
793	24-03-2021	220315	55	Male	Positive
794	24-03-2021	220006	36	Male	Negative
795	24-03-2021	220000	26	Female	Positive
796	24-03-2021	220009	46	Male	Negative
797	24-03-2021	220721	32	Female	Negative
798	24-03-2021	220722	34	Male	Positive

799	24-03-2021	220724	57	Male	Positive
800	24-03-2021	220731	61	Female	Negative
801	24-03-2021	221881	49	Female	Positive
802	24-03-2021	221182	64	Male	Positive
803	24-03-2021	221183	27	Male	Positive
804	24-03-2021	221184	32	Male	Negative
805	24-03-2021	221185	27	Female	Negative
806	24-03-2021	221186	31	Female	Positive
807	24-03-2021	221187	22	Female	Negative
808	24-03-2021	221188	48	Male	Negative
809	24-03-2021	221189	31	Female	Positive
810	24-03-2021	221190	22	Female	Negative
811	24-03-2021	221198	43	Female	Negative
812	24-03-2021	221199	52	Male	Positive
813	24-03-2021	221200	28	Male	Positive
814	24-03-2021	221201	42	Female	Positive
815	24-03-2021	221202	45	Female	Negative
816	24-03-2021	221434	50	Male	Positive
817	24-03-2021	221435	65	Female	Negative
818	25-03-2021	221612	47	Male	Negative
819	25-03-2021	221614	43	Male	Positive
820	25-03-2021	221615	33	Male	Negative
821	25-03-2021	221616	75	Male	Positive
822	25-03-2021	221617	53	Female	Negative
823	25-03-2021	221618	45	Female	Negative
824	25-03-2021	221619	65	Female	Positive
825	25-03-2021	221620	57	Female	Negative
826	25-03-2021	221621	55	Male	Negative
827	25-03-2021	221622	61	Male	Positive
828	25-03-2021	221623	20	Female	Negative
829	25-03-2021	221624	43	Female	Negative
830	25-03-2021	221625	74	Female	Positive

831	25-03-2021	221626	43	Female	Positive
832	25-03-2021	221627	70	Male	Positive
833	25-03-2021	221628	60	Male	Positive
834	25-03-2021	221629	50	Female	Positive
835	25-03-2021	221630	31	Male	Negative
836	25-03-2021	222036	19	Male	Positive
837	25-03-2021	222039	33	Male	Positive
838	25-03-2021	222040	55	Male	Positive
839	25-03-2021	222041	72	Female	Positive
840	25-03-2021	222042	59	Female	Positive
841	25-03-2021	222043	80	Male	Negative
842	25-03-2021	222049	65	Female	Positive
843	25-03-2021	222314	44	Male	Negative
844	25-03-2021	222334	49	Male	Negative
845	25-03-2021	222335	74	Female	Positive
846	25-03-2021	222403	52	Male	Positive
847	25-03-2021	222407	21	Male	Positive
848	26-03-2021	223723	27	Male	Positive
849	26-03-2021	223724	32	Female	Negative
850	26-03-2021	223725	29	Female	Positive
851	26-03-2021	223726	29	Male	Positive
852	26-03-2021	224048	24	Female	Positive
853	26-03-2021	224049	71	Male	Positive
854	26-03-2021	224050	26	Female	Negative
855	26-03-2021	224239	54	Female	Positive
856	26-03-2021	224240	71	Male	Negative
857	26-03-2021	223395	29	Female	Negative
858	26-03-2021	223396	32	Male	Positive
859	26-03-2021	223397	45	Male	Positive
860	26-03-2021	223398	49	Male	Negative
861	26-03-2021	223401	60	Male	Negative
862	26-03-2021	223402	58	Female	Positive

863	26-03-2021	223403	33	Male	Negative
864	26-03-2021	223404	80	Female	Positive
865	26-03-2021	223405	74	Male	Positive
866	26-03-2021	223408	29	Male	Negative
867	26-03-2021	223409	75	Male	Positive
868	26-03-2021	223410	50	Female	Negative
869	26-03-2021	223415	35	Male	Negative
870	26-03-2021	223416	60	Female	Positive
871	26-03-2021	223710	25	Female	Negative
872	26-03-2021	223711	38	Female	Positive
873	26-03-2021	223712	30	Female	Negative
874	26-03-2021	223715	27	Female	Negative
875	26-03-2021	223716	70	Female	Positive
876	26-03-2021	223717	58	Female	Negative
877	26-03-2021	223719	02 days	Male	Negative
878	26-03-2021	223720	84	Female	Positive
879	26-03-2021	223721	37	Female	Negative
880	26-03-2021	223722	47	Male	Positive
881	26-03-2021	223891	68	Male	Positive
882	26-03-2021	223892	48	Male	Positive
883	27-03-2021	225348	65	Female	Negative
884	27-03-2021	225349	80	Male	Positive
885	27-03-2021	225350	69	Female	Negative
886	27-03-2021	225351	62	Female	Positive
887	27-03-2021	225353	55	Male	Negative
888	27-03-2021	225355	85	Male	Positive
889	27-03-2021	225358	18	Female	Negative
890	27-03-2021	225359	21	Male	Positive
891	27-03-2021	225363	57	Female	Positive
892	27-03-2021	225364	30	Male	Negative
893	27-03-2021	226037	60	Male	Negative
894	27-03-2021	226038	64	Male	Positive

895	27-03-2021	226051	28	Female	Positive
896	27-03-2021	226052	27	Female	Positive
897	27-03-2021	226046	21	Male	Positive
898	27-03-2021	226048	68	Male	Positive
899	27-03-2021	226049	50	Male	Negative
900	27-03-2021	226062	26	Female	Positive
901	27-03-2021	226063	25	Female	Negative
902	27-03-2021	226074	30	Male	Positive
903	28-03-2021	227162	27	Male	Positive
904	28-03-2021	227163	68	Female	Negative
905	28-03-2021	227164	72	Male	Negative
906	28-03-2021	227165	47	Male	Positive
907	28-03-2021	227166	26	Female	Negative
908	28-03-2021	227170	52	Female	Positive
909	28-03-2021	227192	65	Female	Positive
910	28-03-2021	227193	55	Male	Negative
911	28-03-2021	227194	80	Female	Positive
912	28-03-2021	227196	25	Male	Negative
913	28-03-2021	227197	32	Female	Positive
914	28-03-2021	227198	31	Female	Negative
915	28-03-2021	227856	19	Male	Negative
916	28-03-2021	227869	19	Female	Positive
917	28-03-2021	227870	23	Female	Negative
918	28-03-2021	227871	62	Male	Positive
919	28-03-2021	227872	33	Male	Positive
920	28-03-2021	227873	45	Male	Negative
921	28-03-2021	227874	78	Male	Positive
922	28-03-2021	227875	52	Male	Negative
923	28-03-2021	227879	30	Female	Negative
924	28-03-2021	227321	23	Female	Positive
925	28-03-2021	227506	50	Female	Negative
926	28-03-2021	227544	46	Female	Positive

927	28-03-2021	228603	45	Male	Positive
928	29-03-2021	229153	52	Male	Negative
929	29-03-2021	229154	27	Female	Positive
930	29-03-2021	229155	73	Male	Negative
931	29-03-2021	229158	40	Female	Positive
932	29-03-2021	229159	30	Male	Negative
933	29-03-2021	229163	40	Female	Negative
934	29-03-2021	229400	16	Male	Positive
935	29-03-2021	229401	44	Male	Negative
936	29-03-2021	229407	69	Female	Positive
937	29-03-2021	229408	29	Male	Positive
938	29-03-2021	229410	27	Female	Positive
939	29-03-2021	229423	63	Male	Positive
940	29-03-2021	229424	20	Female	Negative
941	29-03-2021	229432	26	Female	Positive
942	29-03-2021	229433	32	Female	Negative
943	29-03-2021	229822	33	Female	Positive
944	29-03-2021	229823	25	Male	Negative
945	29-03-2021	229824	20	Female	Negative
946	29-03-2021	229832	69	Female	Positive
947	29-03-2021	229833	52	Male	Negative
948	29-03-2021	229834	32	Male	Positive
949	29-03-2021	229835	33	Female	Positive
950	29-03-2021	229836	64	Male	Negative
951	29-03-2021	229837	70	Male	Negative
952	29-03-2021	229008	24	Female	Positive
953	30-03-2021	229861	45	Male	Negative
954	30-03-2021	229862	53	Male	Positive
955	30-03-2021	229863	23	Male	Negative
956	30-03-2021	229868	29	Male	Negative
957	30-03-2021	229869	29	Female	Positive
958	30-03-2021	229870	46	Male	Negative

959	30-03-2021	229874	35	Male	Negative
960	30-03-2021	229875	60	Male	Negative
961	30-03-2021	229876	55	Male	Negative
962	30-03-2021	229881	65	Male	Positive
963	30-03-2021	229882	23	Female	Negative
964	30-03-2021	229925	34	Female	Positive
965	30-03-2021	230060	23	Female	Negative
966	30-03-2021	230070	60	Male	Negative
967	30-03-2021	230071	27	Male	Negative
968	30-03-2021	230080	23	Female	Positive
969	30-03-2021	230081	17	Male	Positive
970	30-03-2021	230071	24	Male	Negative
971	30-03-2021	230322	34	Male	Negative
972	30-03-2021	29869	29	Female	Positive
973	31-03-2021	232016	64	Female	Negative
974	31-03-2021	232017	73	Male	Positive
975	31-03-2021	232018	38	Female	Negative
976	31-03-2021	232032	23	Female	Negative
977	31-03-2021	232033	65	Male	Positive
978	31-03-2021	232034	70	Male	Negative
979	31-03-2021	231144	38	Female	Positive
980	31-03-2021	231145	30	Male	Negative
981	31-03-2021	231146	27	Male	Positive
982	31-03-2021	231147	58	Male	Negative
983	31-03-2021	231148	37	Male	Negative
984	31-03-2021	231149	42	Female	Negative
985	31-03-2021	231150	53	Female	Positive
986	31-03-2021	231151	48	Male	Negative
987	31-03-2021	231154	43	Male	Negative
988	31-03-2021	231155	25	Female	Positive
989	31-03-2021	231156	22	Male	Negative
990	31-03-2021	231162	51	Female	Positive

991	31-03-2021	231163	84	Male	Positive
992	31-03-2021	231164	50	Male	Positive
993	31-03-2021	231343	30	Female	Positive
994	31-03-2021	231831	58	Female	Positive
995	31-03-2021	232723	79	Male	Positive
996	31-03-2021	232939	58	Female	Positive
997	31-03-2021	232941	37	Male	Positive
998	31-03-2021	232942	40	Male	Positive
999	31-03-2021	232048	61	Male	Positive
1000	31-03-2021	232054	44	Male	Positive
1001	31-03-2021	232055	41	Female	Positive
1002	31-03-2021	232060	35	Male	Positive
1003	31-03-2021	232061	50	Female	Positive
1004	31-03-2021	232062	38	Female	Negative
1005	31-03-2021	232063	55	Female	Negative

CHAPTER 4

DEATH RATE WITH RESPECT TO DISEASE HISTORY

Patient disease history affects on death rate during Covid pandemic. In this project, 1005 RTPCR test carried out among which 489 cases were positive for COVID- 19. The samples were taken from all age group i.e. from 2 day to at the age of 90. During the case study the data of disease patient like diabetes, BP and other respiratory disease like asthma etc were separated. In the total positive cases, 64 cases were broad dead. The broad dead cases are from both whether they were asymptomatic and symptomatic or disease or healthy, of any age group. The symptoms are more or less common in all the cases of Covid patient like fever, cold, cough, headache and rarely dehydration.

The people were at risk if they were already suffering from some diseases like coronary disease (CD), blood pressure (BP), hypertension (HT), diabetes (D), etc. Severe infection leads to the increase value of d-dimer and multiple organ failure which causes death. At the beginning of the pandemic outbreak, the male patients and elderly person were frequently observed infected with COVID-19 but after some days it was observed that there is no significant gender difference for spreading of disease.

At the beginning of pandemic outbreak, the male patient and elderly person were frequently observed infected with COVID-19 but after some days it was observed that there is no significant gender difference for spreading of disease. More than that the people were at risk if they are already suffering from some diseases like coronary disease, blood pressure, hypertension, diabetes etc. Severe infection leads to the increase value of d-dimer and multiple organ failure which linked with variable risk factor.

Table 2: Positive and broad death cases.

(Asym: Asymptomatic; Symp: Symptomatic; F: Fever; CU: Cough; DI: Diarrhea; H: Headach; CO: Cold; BD: Broad dead; BP: Blood Pressure)

Sr. No.	Date	Sampl ID	Disease history	Asym	Symp	symptoms	Death	Age/Yrs	Sex
1	01-03-2021	187894		√				26	Female
2	01-03-2021	187964	D/BP		√	F/CU/DI/H	BD	61	Male
3	01-03-2021	188788			√			60	Female
4	01-03-2021	188537	BP		√			38	Female
5	02-03-2021	188782		√			BD	21	Female
6	02-03-2021	188894			√	F/CU/H		23	Male
7	02-03-2021	188934			√	F/CU/H		28	Female
8	02-03-2021	189628	D/BP		√	F/CU/DI/H	BD	80	Female
9	02-03-2021	189803			√	F/CU/H		60	Female
10	02-03-2021	190296	D/BP		√	F/CU/DI/H		50	Female
11	03-03-2021	191040			√	F/CU/DI/H		28	Male
12	03-03-2021	191048			√	F/CU/H		23	Female
13	03-03-2021	191052			√	F/CU/CO/H		21	Female
14	03-03-2021	191184			√	F/CU/DI/H		35	Male
15	03-03-2021	191195	BP	√				43	Male
16	03-03-2021	191495			√	F/CU/DI/H		24	Female

17	03-03-2021	191485			√	F/CU/DI/H	BD	70	Female
18	03-03-2021	191487			√	F/CU/H		13	Female
19	03-03-2021	191494	T//BP		√	F/CU/H		27	Female
20	03-03-2021	191865			√	F/CU/H		50	Male
21	04-03-2021	192202			√	F/CU/DI/H	BD	35	Female
22	04-03-2021	192203			√	F/CU/CO/H		52	Male
23	04-03-2021	192215	T//D/BP		√	F/CU/CO/H		69	Male
24	04-03-2021	192522			√	F/CU/CO/H		32	Female
25	04-03-2021	192523		√				34	Male
26	04-03-2021	192528		√				21	Male
27	04-03-2021	192642		√				24	Male
28	04-03-2021	192950		√				19	Male
29	05-03-2021	193247			√	F/CU/CO/H		19	Male
30	05-03-2021	193250			√	F/CU/CO/H		48	Male
31	05-03-2021	193251			√	F/CU//H		49	Male
32	05-03-2021	193252	BP		√	CU/CO/H		54	Male
33	05-03-2021	193575			√	F/CU/CO/H		23	Female
34	05-03-2021	193577			√	F/CU/CO/H		24	Female
35	05-03-2021	193581			√	CU/CO/H		19	Female
36	05-03-2021	193591		√				21	Male
37	05-03-2021	193597	BP/D		√			56	Male

38	05-03-2021	193681			√	F/CU/CO/H		30	Female
39	05-03-2021	193985		√			BD	17	Male
40	05-03-2021	193988	BP		√			82	Female
41	05-03-2021	193771			√			28	Male
42	05-03-2021	193997			√			38	Male
43	05-03-2021	193999		√				28	Female
44	06-03-2021	194370			√	F/CU/CO/H		30	Female
45	06-03-2021	194476			√	F/CU/CO/H		28	Male
46	06-03-2021	194880			√	F/CU/CO/H		26	Male
47	06-03-2021	194885			√	F/CU/CO/H		26	Male
48	06-03-2021	194958			√	F/CU/CO/H		72	Male
49	06-03-2021	195086			√		BD	20	Female
50	06-03-2021	195621			√			33	Female
51	07-03-2021	195635			√			24	Female
52	07-03-2021	196167			√			29	Female
53	07-03-2021	196209		√				50	Male
54	08-03-2021	196515			√			35	Male
55	08-03-2021	196526			√			36	Male
56	08-03-2021	196538			√	F/CU/CO/DI /H	BD	23	Female
57	08-03-2021	196549		√			B.D.	60	Female

58	08-03-2021	196561			√	F/CU/CO/H		31	Male
59	08-03-2021	196564			√	F/CU/CO/H		20	Female
60	08-03-2021	196569			√	CU/CO		62	Male
61	08-03-2021	197028			√	F/CU/CO/H		27	Female
62	08-03-2021	197035			√	CU/H		23	Female
63	08-03-2021	197309			√	CU/CO		22	Female
64	08-03-2021	197327		√				36	Male
65	09-03-2021	197315			√	F/CU/CO/H		22	Male
66	09-03-2021	197318			√	F/CU/CO/H		26	Female
67	09-03-2021	197327			√	F/CU/CO/H		36	Male
68	09-03-2021	197328			√	CU/CO/H		60	Male
69	09-03-2021	197330			√	F/CU/CO/H		35	Female
70	09-03-2021	197332		√				70	Male
71	09-03-2021	197346			√	F/CU/DI/H		82	Female
72	09-03-2021	197347			√			51	Male
73	09-03-2021	197671			√			23	Female
74	09-03-2021	197923		√				26	Male
75	09-03-2021	197928			√			21	Male
76	09-03-2021	197929			√	F/CU/DI/H		49	Female
77	09-03-2021	197930			√			22	Female
78	09-03-2021	197931		√				22	Female

79	09-03-2021	197932		√				25	Male
80	09-03-2021	197937			√			70	Male
81	09-03-2021	198272			√			28	Female
82	09-03-2021	198455			√			55	Male
83	09-03-2021	198472		√				28	Female
84	09-03-2021	198547		√				23	Male
85	10-03-2021	198672			√	F/CU/DI/H	BD	55	Female
86	10-03-2021	198674			√	F/CU/DI/H	BD	45	Male
87	10-03-2021	198833			√			40	Female
88	10-03-2021	198834		√				29	Female
89	10-03-2021	198838			√	F/CU/CO/H		29	Female
90	10-03-2021	198844			√	F/CU/CO/H		46	Female
91	10-03-2021	198850		√				28	Female
92	10-03-2021	198940			√	F/CU/CO/H		30	Female
93	10-03-2021	198943			√	F/CU/CO/H		40	Female
94	10-03-2021	198944		√				27	Male
95	10-03-2021	198949			√	F/CU/CO/H		45	Female
96	10-03-2021	198951			√	F/CU/CO/H		21	Male
97	10-03-2021	198953			√	F/CU/CO/H		55	Female
98	10-03-2021	198955			√	F/CU/CO/H		46	Male
99	10-03-2021	198956			√	F/CU/DI/H	BD	64	Female

100	10-03-2021	199106			√			43	Female
101	10-03-2021	199109			√			62	Male
102	10-03-2021	199111		√		F/CU/CO/H	BD	14	Female
103	11-03-2021	199690		√				15	Female
104	11-03-2021	199692		√				16	Male
105	11-03-2021	199693			√	F/CU/CO/H		42	Female
106	11-03-2021	199694			√	F/CU/CO/H		50	Male
107	11-03-2021	199710			√	F/CU/CO/H		26	Female
108	11-03-2021	200001			√	F/CU/CO/H		17	Female
109	11-03-2021	200006			√	F/CU/CO/H		30	Female
110	11-03-2021	200016			√	F/CU/CO/H		45	Male
111	11-03-2021	200018			√	F/CU/CO/H		30	Female
112	11-03-2021	200023		√				51	Female
113	11-03-2021	199903			√	F/CU/CO/H		10	Male
114	11-03-2021	200103			√	F/CU/CO/H		31	Female
115	11-03-2021	200104			√	F/CU/CO/H		26	Female
116	11-03-2021	200111			√	F/CU/DI/H	BD	60	Male
117	11-03-2021	200112		√				47	Male
118	11-03-2021	200939			√	F/CU/CO/H		43	Female
119	11-03-2021	200940			√	F/CU/CO/DI /H	BD	18	Female

120	11-03-2021	200941			√	F/CU/CO/H		16	Male
121	11-03-2021	200942			√	F/CU/CO/H		45	Female
122	11-03-2021	200944		√				42	Male
123	11-03-2021	200949			√	F/CU/CO/H		36	Female
124	11-03-2021	200952			√	F/CU/CO/H		32	Female
125	11-03-2021	200240			√	F/CU/CO/H		51	Female
126	12-03-2021	201104			√	F/CU/CO/H		34	Female
127	12-03-2021	201114			√	F/CU/CO/H		29	Female
128	12-03-2021	201124			√	F/CU/CO/H		24	Female
129	12-03-2021	201130			√	F/CU/CO/H		26	Female
130	12-03-2021	201131		√				60	Female
131	12-03-2021	201132			√	F/CU	BD	80	Female
132	12-03-2021	201224			√	F/CU/CO/H		25	Female
133	12-03-2021	201226			√	F/CU/CO/H		34	Female
134	12-03-2021	201236		√				51	Male
135	12-03-2021	201237			√	F/CU/CO/DI /H	BD	71	Female
136	12-03-2021	201238			√	F/CU/CO/H		43	Male
137	12-03-2021	201252		√				26	Male
138	12-03-2021	201258		√				19	Male
139	12-03-2021	201304			√	F/CU/CO/H		31	Female

140	12-03-2021	201306			√	F/CU/CO/H		27	Female
141	12-03-2021	201309			√	F/CU/CO/H		23	Female
142	12-03-2021	202056			√	F/CU/CO/H		29	Male
143	12-03-2021	202059			√	F/CU/CO/H		40	Male
144	12-03-2021	202060			√	F/CU/CO/H		62	Male
145	12-03-2021	202062			√	F/CU/CO/H		39	Male
146	12-03-2021	202074		√				35	Female
147	13-03-2021	202371			√	F/CU/CO/H		23	Male
148	13-03-2021	202392			√	F/CU/CO/H		57	Female
149	13-03-2021	202400			√	F/CU/CO/H		48	Male
150	13-03-2021	202405			√	F/CU/CO/H		37	Female
151	13-03-2021	202411			√	F/CU/CO/H		52	Female
152	13-03-2021	202743		√				29	Female
153	13-03-2021	203140			√	F/CU/CO/DI /H	BD	82	Male
154	14-03-2021	203367			√	F/CU/CO/H		54	Male
155	14-03-2021	203471			√	F/CU/CO/H		30	Male
156	14-03-2021	203676			√	F/CU/CO/H		28	Female
157	14-03-2021	203686			√	F/CU/CO/H		22	Male
158	14-03-2021	203690			√	F/CU/CO/H		26	Male
159	14-03-2021	204069			√	CU/CO	BD	30	Female

160	14-03-2021	204072		√				21	Female
161	14-03-2021	204076			√	F/CU/CO/H		65	Male
162	14-03-2021	204077			√	F/CU/CO/H		21	Male
163	15-03-2021	204493			√	F/CU/CO/H		70	Male
164	15-03-2021	204494			√	F/CU/CO/H		68	Female
165	15-03-2021	204513			√	F/CU/CO/H		20	Female
166	15-03-2021	204519			√	F/CU/CO/H		51	Male
167	15-03-2021	204606			√	F/CU/CO/H		63	Male
168	15-03-2021	204608			√	F/CU/CO/H		76	Male
169	15-03-2021	204611		√				31	Male
170	15-03-2021	204621		√			BD	20	Male
171	15-03-2021	204622		√				20	Male
172	15-03-2021	204695			√	CU/CO	BD	68	Male
173	15-03-2021	204697			√	F/CU/CO/H		51	Female
174	15-03-2021	205062			√	CU/CO/H		37	Male
175	15-03-2021	205402			√	F/CU/H		40	Male
176	15-03-2021	205403		√				33	Female
177	15-03-2021	205404			√	F/CU/CO/H		55	Female
178	15-03-2021	205364			√			46	Male
179	15-03-2021	204608			√			76	Male
180	16-03-2021	205573			√	F/CU/CO/H		65	Male

181	16-03-2021	205575			√			70	Male
182	16-03-2021	205576			√	F/CU/DI/H	BD	82	Male
183	16-03-2021	205577		√				19	Male
184	16-03-2021	205578			√	F/CU/CO/H		24	Male
185	16-03-2021	205581			√	F/CU/CO/H		63	Female
186	16-03-2021	205584			√	F/CU/CO/H		28	Female
187	16-03-2021	205585			√	F/H	BD	30	Male
188	16-03-2021	205586			√	F/CU/CO/H		64	Male
189	16-03-2021	205588			√	F/CU/CO/H		41	Female
190	16-03-2021	206054			√	CU/CO		52	Female
191	16-03-2021	207293			√	F/CU/H		48	Female
192	16-03-2021	207298			√	CU/CO		75	Female
193	16-03-2021	207299			√	F/CU/CO/H		56	Female
194	16-03-2021	206460		√				31	Male
195	16-03-2021	206461		√				50	Male
196	16-03-2021	206465			√	CU/CO		32	Male
197	16-03-2021	206468			√	F/CU/CO/H		39	Female
198	16-03-2021	204589			√	F/CU/CO/H		45	Male
199	16-03-2021	207301			√	F/CU/CO/H		50	Female
200	16-03-2021	207300			√	CU/CO		60	Male
201	16-03-2021	206080			√	CU/CO		20	Female

202	17-03-2021	207405		√				12	Male
203	17-03-2021	207407			√	F/CU/CO/H		38	Male
204	17-03-2021	207411			√	F/CU/DI/H	BD	71	Male
205	17-03-2021	207412			√	CU/CO		71	Male
206	17-03-2021	208161			√	F/CU/H		20	Male
207	17-03-2021	208162			√	F/CU/CO/H		21	Male
208	17-03-2021	208163		√				22	Male
209	17-03-2021	208165			√	CU/CO		24	Female
210	17-03-2021	208169			√	F/CU/H		29	Female
211	17-03-2021	208148			√	F/CU/CO/H		56	Female
212	17-03-2021	208152			√	CU/CO	BD	18	Female
213	17-03-2021	208153			√	F/CU/H		19	Male
214	17-03-2021	208156			√	CU/CO		73	Male
215	17-03-2021	208728			√	F/CU/CO/H		54	Male
216	17-03-2021	208729			√	F/CU/H		50	Male
217	17-03-2021	208730			√	CU/CO		83	Female
218	17-03-2021	208795			√	F/CU/H		27	Female
219	17-03-2021	208800		√				49	Male
220	17-03-2021	208159			√	F/CU/CO/H		20	Male
221	18-03-2021	208834			√	F/CU/H		75	Male
222	18-03-2021	208940			√	F/CU/CO/H		32	Male

223	18-03-2021	209174			√	F/CU	BD	52	Male
224	18-03-2021	209444			√	CU/CO		40	Female
225	18-03-2021	209447			√	CU/CO		45	Male
226	18-03-2021	209843			√	F/CU/CO/H		44	Male
227	18-03-2021	210012		√				20	Male
228	18-03-2021	210017			√	F/CU/CO/H		38	Female
229	18-03-2021	210019			√	CU/CO		76	Female
230	18-03-2021	210022		√			BD	19	Male
231	19-03-2021	211095			√	F/CU		72	Male
232	19-03-2021	211100			√	F/CU/CO/H		28	Male
233	19-03-2021	211110			√	F/CU		60	Female
234	19-03-2021	211111			√	CU/CO		68	Male
235	19-03-2021	211114		√				27	Male
236	19-03-2021	211642			√	CU/CO		55	Male
237	19-03-2021	212070			√	F/CU/CO/H		45	Male
238	19-03-2021	212072			√	F/CU/CO/H		44	Female
239	19-03-2021	212075			√	F/CU		50	Male
240	19-03-2021	212054		√				17	Male
241	19-03-2021	212242			√	F/CU	BD	67	Male
242	19-03-2021	211284			√	F/CU/CO/H		26	Male
243	19-03-2021	212085			√	CU/CO		37	Male

244	19-03-2021	211860			√	F/CU/CO/H		50	Female
245	19-03-2021	211861			√	F/CU/CO/H		35	Male
246	19-03-2021	211862			√	F/CU/CO/H		47	Female
247	19-03-2021	211863			√	CU/CO		57	Male
248	19-03-2021	211864			√	F/CU/CO/H		79	Male
249	19-03-2021	211871		√		CU/CO		51	Female
250	19-03-2021	211872		√			BD	35	Female
251	20-03-2021	213815			√	F/CU/CO/H		41	Male
252	20-03-2021	212806			√	F/CU/CO/H		26	Female
253	20-03-2021	212812			√	F/CU/CO/H		58	Female
254	20-03-2021	212813			√	F/CU/CO/H		38	Male
255	20-03-2021	213817			√	CU/CO		49	Male
256	20-03-2021	213818			√	F/CU/CO/H		22	Female
257	20-03-2021	213824		√				37	Male
258	20-03-2021	213825			√	CU/CO		70	Male
259	20-03-2021	213826			√	F/CU/CO/H		32	Male
260	20-03-2021	213827			√	CU/CO	BD	22	Male
261	20-03-2021	213832			√	CU/CO		43	Female
262	20-03-2021	213965			√	F/CU/CO/H		68	Female
263	20-03-2021	214152			√	CU/CO		63	Female
264	20-03-2021	214905			√	F/CU/CO/H		75	Male

265	21-03-2021	214916			√	F/CU/CO/H		60	Male
266	21-03-2021	214919			√	F/CU	BD	49	Female
267	21-03-2021	214920		√				35	Female
268	21-03-2021	214928			√	F/CU		36	Male
269	21-03-2021	214935			√	F/CU		40	Female
270	21-03-2021	214941			√	F/CU/CO/H		60	Male
271	21-03-2021	214950			√	CU/CO		45	Female
272	21-03-2021	215296			√	CU/CO		59	Male
273	21-03-2021	215400			√	F/CU/CO/H		22	Male
274	21-03-2021	215250		√			BD	17	Male
275	21-03-2021	216184			√	F/CU		55	Female
276	21-03-2021	216185			√	CU/CO		83	Female
277	21-03-2021	216186			√	F/CU	BD	33	Male
278	21-03-2021	215487			√	F/CU/CO/H		35	Male
279	21-03-2021	215488			√	F/CU		70	Male
280	21-03-2021	215746			√	F/CU/DI/H	B.D.	75	Male
281	21-03-2021	215484			√	F/CU/CO/H		55	Female
282	21-03-2021	215485			√	CU/CO		83	Female
283	21-03-2021	215486			√	CU/CO		33	Male
284	21-03-2021	215833			√	F/CU/CO/H		62	Male
285	21-03-2021	216305			√	F/CU		28	Male

286	22-03-2021	216309			√	F/CU		25	Male
287	22-03-2021	216310			√	F/CU		52	Male
288	22-03-2021	216314		√			BD	17	Female
289	22-03-2021	216316			√	F/CU/CO/H		23	Female
290	22-03-2021	216317			√	CU/CO		19	Female
291	22-03-2021	216746			√	CU/CO		39	Male
292	22-03-2021	216755			√	F/CU/CO/H		30	Male
293	22-03-2021	216760			√	F/CU/CO/H		33	Male
294	22-03-2021	216763			√	F/CU/CO/H		63	Female
295	22-03-2021	216768			√	CU/CO		59	Male
296	22-03-2021	216880			√	F/CU		50	Female
297	22-03-2021	216881			√	F/CU	BD	55	Female
298	22-03-2021	216883			√	F/CU		64	Male
299	22-03-2021	216886			√	F/CU/CO/H		26	Female
300	22-03-2021	216889			√	F/CU		63	Female
301	22-03-2021	216892		√				32	Male
302	22-03-2021	216893			√	F/CU		68	Female
303	22-03-2021	216898		√				25	Male
304	22-03-2021	216901			√	F/CU/CO/H		62	Male
305	22-03-2021	216908			√	F/CU		50	Female
306	22-03-2021	216930			√	F/CU		40	Male

307	22-03-2021	216932			√	F/CU/CO/H		42	Female
308	22-03-2021	217198			√	F/CU	B.D.	32	Male
309	22-03-2021	217247			√	F/CU/CO/H		26	Male
310	22-03-2021	217418			√	F/CU/CO/H		64	Male
311	22-03-2021	216894			√	F/CU		40	Male
312	23-03-2021	218304			√	F/CU/CO/H		30	Male
313	23-03-2021	218305			√	F/CU/CO/H		35	Female
314	23-03-2021	218311			√	F/CU/CO/H	BD	33	Male
315	23-03-2021	218314			√	F/CU/CO/H		31	Female
316	23-03-2021	218315			√	F/CU/CO/H		6	Female
317	23-03-2021	218316			√	F/CU/CO/H		37	Male
318	23-03-2021	218317			√	F/CU		49	Female
319	23-03-2021	218319			√	F/CU/CO/H		34	Male
320	23-03-2021	218437			√	F/CU		21	Male
321	23-03-2021	218441			√	CU/CO		61	Male
322	23-03-2021	218408			√	F/CU/CO/H		61	Female
323	23-03-2021	218420			√	CU/CO		42	Female
324	23-03-2021	218421			√	F/CU		20	Male
325	23-03-2021	218619			√	CU/CO		45	Male
326	23-03-2021	218637			√	F/CU/CO/H		53	Male
327	23-03-2021	218649			√	F/CU		43	Male

328	23-03-2021	219048			√	F/CU		25	Female
329	23-03-2021	219275			√	F/CU/CO/H		28	Female
330	23-03-2021	219277			√	F/CU		25	Female
331	23-03-2021	219152		√				43	Male
332	24-03-2021	219830			√	F/CU/DI/H	BD	68	Male
333	24-03-2021	219834		√				28	Male
334	24-03-2021	220310			√	F/CU/CO/H		55	Male
335	24-03-2021	220312			√	F/CU/CO/H		72	Female
336	24-03-2021	220315			√	F/CU/CO/H		55	Male
337	24-03-2021	220000			√	F/CU	BD	26	Female
338	24-03-2021	220722			√	F/CU		34	Male
339	24-03-2021	220724			√	F/CU/CO/H		57	Male
340	24-03-2021	221881			√	F/CU		49	Female
341	24-03-2021	221181			√	F/CU		49	Female
342	24-03-2021	221182			√	F/CU/CO/H		64	Male
343	24-03-2021	221183			√	F/CU/CO/H		27	Male
344	24-03-2021	221186			√	F/CU/CO/H		31	Female
345	24-03-2021	221189			√	F/CU/CO/H		31	Female
346	24-03-2021	221194			√	F/CU		61	Male
347	24-03-2021	221199			√	F/CU		52	Male
348	24-03-2021	221200			√	CU/CO	BD	28	Male

349	24-03-2021	221201			√	CU/CO		42	Female
350	24-03-2021	221204			√	F/CU/CO/H		62	Male
351	24-03-2021	221206		√				32	Male
352	24-03-2021	221208			√	F/CU		30	Female
353	24-03-2021	221434			√	F/CU	BD	50	Male
354	25-03-2021	221614			√	CU/CO		43	Male
355	25-03-2021	221616			√	CU/CO		75	Male
356	25-03-2021	221619			√	F/CU/CO/H		65	Female
357	25-03-2021	221622			√	F/CU		61	Male
358	25-03-2021	221625			√	F/CU		74	Female
359	25-03-2021	221626			√	F/CU/CO/H		43	Female
360	25-03-2021	221627			√	F/CU/CO/H		70	Male
361	25-03-2021	221628			√	F/CU/CO/H		60	Male
362	25-03-2021	221629			√	CU/CO		50	Female
363	25-03-2021	222036		√			BD	19	Male
364	25-03-2021	222039			√	CU/CO		33	Male
365	25-03-2021	222040			√	F/CU/CO/H		55	Male
366	25-03-2021	222041			√	F/CU/CO/H		72	Female
367	25-03-2021	222042			√	F/CU		59	Female
368	25-03-2021	222049			√	F/CU/CO/H		65	Female
369	25-03-2021	222335			√	F/CU/CO/H		74	Female

370	25-03-2021	222403			√	F/CU/CO/H		52	Male
371	25-03-2021	222415			√	F/CU	BD	55	Female
372	25-03-2021	222417			√	F/CU/CO/H		24	Male
373	25-03-2021	222595			√	F/CU		26	Male
374	25-03-2021	222596			√	F/CU/CO/H		20	Male
375	25-03-2021	222898			√	F/CU/CO/H		20	Male
376	25-03-2021	222904			√	F/CU/CO/H		20	Male
377	25-03-2021	222407		√				21	Male
378	26-03-2021	223723		√				27	Male
379	26-03-2021	223725		√				29	Female
380	26-03-2021	223726		√				29	Male
381	26-03-2021	224048			√	F/CU/CO/H		24	Female
382	26-03-2021	224049			√	F/CU/DI/H	BD	71	Male
383	26-03-2021	224239			√	F/CU		54	Female
384	26-03-2021	223396			√	F/CU/CO/H		32	Male
385	26-03-2021	223397			√	F/CU/CO/H		45	Male
386	26-03-2021	223402			√	F/CU		58	Female
387	26-03-2021	223404			√	F/CU/DI/H	BD	80	Female
388	26-03-2021	223405			√	F/CU		74	Male
389	26-03-2021	223409			√	F/CU/CO/H		75	Male
390	26-03-2021	223416			√	F/CU		60	Female

391	26-03-2021	223711			√	F/CU/CO/H		38	Female
392	26-03-2021	223716			√	F/CU/CO/H		70	Female
393	26-03-2021	223720			√	F/CU		84	Female
394	26-03-2021	223722		√				47	Male
395	26-03-2021	223891			√	F/CU		68	Male
396	26-03-2021	224312			√	F/CU/CO/H		68	Male
397	26-03-2021	224123			√	F/CU/CO/H		30	Female
398	26-03-2021	224124			√	F/CU/CO/H		32	Male
399	26-03-2021	224225			√	F/CU/CO/H		27	Male
400	26-03-2021	224226			√	F/CU/CO/H		44	Male
401	26-03-2021	224227			√	F/CU	BD	39	Female
402	26-03-2021	224229			√	F/CU/CO/H		47	Male
403	26-03-2021	224230			√	F/CU		24	Male
404	26-03-2021	224232			√	F/CU/CO/H		80	Male
405	26-03-2021	224689		√				56	Male
406	26-03-2021	224690			√	F/CU		57	Female
407	26-03-2021	224693			√	F/CU/CO/H		23	Male
408	26-03-2021	224699			√	F/CU		50	Female
409	26-03-2021	223999			√	CU/CO	BD	23	Female
410	26-03-2021	224708			√	F/CU/CO/H		27	Male
411	26-03-2021	224709			√	F/CU/CO/H		45	Male

412	26-03-2021	224712		√				21	Female
413	26-03-2021	224713			√	F/CU/CO/H		37	Female
414	26-03-2021	223892			√	F/CU		48	Male
415	27-03-2021	225349			√	F/CU/CO/H		80	Male
416	27-03-2021	225351			√	F/CU		62	Female
417	27-03-2021	225355			√	F/CU/CO/H		85	Male
418	27-03-2021	225359			√	F/CU	BD	21	Male
419	27-03-2021	225363			√	F/CU		57	Female
420	27-03-2021	226038			√	F/CU/CO/H		64	Male
421	27-03-2021	226051			√	F/CU/CO/H		28	Female
422	27-03-2021	226052			√	F/CU		27	Female
423	27-03-2021	226046		√			BD	21	Male
424	27-03-2021	226048			√	F/CU/CO/H		68	Male
425	27-03-2021	226062			√	F/CU		26	Female
426	27-03-2021	226074			√	F/CU/CO/H		30	Male
427	27-03-2021	226422			√	F/CU		27	Female
428	27-03-2021	226976			√	F/CU/CO/H		25	Male
429	27-03-2021	226985			√	F/CU/CO/H		72	Male
430	27-03-2021	226987			√	F/CU/CO/H		25	Female
431	27-03-2021	226988			√	F/CU/CO/H		69	Female
432	27-03-2021	226989		√				32	Female

433	27-03-2021	226992			√	F/CU/CO/H		49	Male
434	27-03-2021	226994			√	F/CU		62	Male
435	28-03-2021	227162			√	F/CU		27	Male
436	28-03-2021	227165			√	F/CU		47	Male
437	28-03-2021	227170			√	F/CU/CO/H		52	Female
438	28-03-2021	227192			√	F/CU/CO/H		65	Female
439	28-03-2021	227194			√	F/CU		80	Female
440	28-03-2021	227197			√	F/CU	BD	32	Female
441	28-03-2021	227869			√	F/CU/CO/H		19	Female
442	28-03-2021	227871			√	F/CU		62	Male
443	28-03-2021	227872			√	F/CU/CO/H		33	Male
444	28-03-2021	227874			√	F/CU/CO/H		78	Male
445	28-03-2021	227321			√	F/CU	BD	23	Female
446	28-03-2021	227544			√	F/CU/CO/H		46	Female
447	28-03-2021	227858		√				21	Female
448	28-03-2021	228603			√	F/CU/CO/H		45	Male
449	29-03-2021	229154			√	F/CU	BD	27	Female
450	29-03-2021	229158			√	F/CU	BD	40	Female
451	29-03-2021	229400			√	F/CU		16	Male
452	29-03-2021	229407			√	F/CU/CO/H		69	Female
453	29-03-2021	229408			√	F/CU		29	Male

454	29-03-2021	229410			√	F/CU/CO/H		27	Female
455	29-03-2021	229423			√	F/CU/CO/H		63	Male
456	29-03-2021	229432			√	F/CU		26	Female
457	29-03-2021	229822			√	F/CU/CO/H		33	Female
458	29-03-2021	229832			√	F/CU/DI/H	BD	69	Female
459	29-03-2021	229834			√	F/CU/DI/H	BD	32	Male
460	29-03-2021	229835			√	F/CU/DI/H	BD	33	Female
461	29-03-2021	229008		√				24	Female
462	30-03-2021	229862			√	F/CU		53	Male
463	30-03-2021	229869			√	F/CU/CO/H		29	Female
464	30-03-2021	229881			√	F/CU		65	Male
465	30-03-2021	229925			√	F/CU/CO/H		34	Female
466	30-03-2021	230080			√	F/CU	BD	23	Female
467	30-03-2021	230081			√	CU/CO	BD	17	Male
468	30-03-2021	29869			√	F/CU		29	Female
469	31-03-2021	232017			√	F/CU/CO/H		73	Male
470	31-03-2021	232033			√	F/CU/CO/H		65	Male
471	31-03-2021	231144			√	F/CU		38	Female
472	31-03-2021	231146		√			BD	27	Male
473	31-03-2021	231150			√	F/CU		53	Female
474	31-03-2021	231155			√	F/CU		25	Female

475	31-03-2021	231162			√	F/CU		51	Female
476	31-03-2021	231163			√	F/CU/CO/H		84	Male
477	31-03-2021	231164			√	F/CU		50	Male
478	31-03-2021	231343			√	F/CU/CO/H		30	Female
479	31-03-2021	231831			√	F/CU		58	Female
480	31-03-2021	232723			√	F/CU/CO/H		79	Male
481	31-03-2021	232939			√	F/CU/DI/H	BD	58	Female
482	31-03-2021	232941			√	F/CU/DI/H	B.D.	37	Male
483	31-03-2021	232942			√	F/CU/DI/H	B.D.	40	Male
484	31-03-2021	232048			√	F/CU		61	Male
485	31-03-2021	232054			√	F/CU/CO/H		44	Male
486	31-03-2021	232055			√	F/CU	BD	41	Female
487	31-03-2021	232060			√	F/CU/CO/H		35	Male
488	31-03-2021	232064			√	F/CU/CO/H		66	Male
489	31-03-2021	232061			√	F/CU/CO/H		50	Female

CHAPTER 5

PREVENTION AND CONTROL OF CORONA VIRUS

Prevention and control strategies and methods are reported at different level. All the medical institutes during COVID-19 follow quarantine and observation treatment. This is only preventive measures and control of spreading the disease. During initial COVID-19 pandemic National Health Commission issued some guidelines and preventive measures to control the transmission and nosocomial infection. During later days of pandemic National Health Commission issued another protocol for fast control from transmission during pandemic through strict isolation and lockdown at their own places. Some health measures slow down the rate of transmission of the COVID-19 include identification and contact recognition, use of sanitizer, quarantine of suspected patient.

National-level policies have also been released, along with specific actions for rural areas. The introduction of several public health interventions, such as case isolation, contact tracking, environmental sanitization, and the use of personal protective equipment, may stop or reduce the spread of the COVID-19.

There are six clinical trials that have been registered in the Chinese Clinical Trial Registry as well as the International Clinical Trials Registry platform to assess the effectiveness or safety of targeted medication in the treatment or prognosis of COVID-19. Applying appropriate symptomatic treatment and supportive care to COVID-19-infected patients has been advised. Additionally, research has examined COVID-19-related issues with psychological health and nosocomial infection prevention. Nosocomial infection has been reduced using a number of strategies, including awareness training for prevention and control, isolation, sanitation, categorized safeguards at various levels in infection zones, and protection of proven cases.

For confirmed instances, suspected cases, and medical professionals, some proposed psychological care in relation to psychological health. There is currently few vaccines available that can protect against COVID-19 in the general population. The best defence against the virus is prevention of exposure.

There have been discussions and suggestions for protective measures against airborne hazards. Use of face masks, covering coughs and sneezes with tissues that are then disposed of safely, routine hand washing with soap or disinfection with hand sanitizer containing at least 60% alcohol, keeping as far away from infected people as possible, and

refraining from touching eyes, nose, and mouth with unwashed hands are just a few infections preventive and control (IPC) measures that may lower the risk of exposure.

Additionally, the WHO published comprehensive instructions on how to utilise face masks when receiving COVID-19 medical care in the community, at home, and in other settings. In this document, it is advised that healthcare professionals wear particulate respirators, such as those that are N95 or FFP2 approved, when performing aerosol-generating procedures and wear medical masks when administering any care to suspected or verified cases.

Mask usage and disposal must be done correctly to prevent any increase in the risk of transmission. A guideline was also published in order to educate the public about COVID-19 prevention and control, in addition to studies that were published in scholarly journals. The main points of the recommendation include reasons for an outbreak, how to choose and wear a face mask, effective hand washing techniques, preventive actions to take at various venues, disinfection techniques, and home medical monitoring. The recommendation includes advice on how to stop panic among the general public in addition to scientific understanding on how to control the COVID-19 outbreak.



Repeatedly when it is needed WHO gives the directions about the COVID-19 outbreak and health authority. It helps to prevent human to human transmission and secondary infection. It becomes needed for security of health workers and international spread. Some people have infection with mild illness and some have severe symptoms.

According to WHO some precautions have to be taken

- Wash your hands regularly and thoroughly with soap and water for at least 20 seconds or with an alcohol based hand rub (hand sanitizer that contains at least 60% alcohol) completely cover your hands and rub them together until they do not dry especially after you have been visited a public place, or after blowing your nose, sneezing or coughing.

- Hands touch many surfaces and pick up viruses and these contaminated hands, can transfer the virus to your nose, eyes or mouth So, avoid touching these organs with unwashed hands. Because from there, the virus can enter the body and may cause persons to sick.
- Maintain social distancing (maintain at least 1-2 metre distance) and avoid close contact with people who are sick (who is coughing or sneezing). When infected individuals cough or sneeze, they spray small droplets from their nose or mouth which may contain COVID-19 virus. The person can breathe in these droplets.
- Avoid large events and mass gatherings



With taking some precaution to save ourself one has to take some steps to protect others.

- Stay home if you are feeling unwell, unless you are going to get medical care.
- If you have a cough, fever and difficulty breathing, seek medical attention consult online to your doctor.
- If you are sick avoid taking public transportation.
- Whenever you cough or sneeze cover your mouth and nose with a tissue paper.
- Throw used tissues in the trash and wash your hands immediately with antiseptic soap and water.
- If possible, stay isolated in a separate room from family and pets and wear a facemask when you are around other people (e.g., sharing a room or vehicle). If you are unable to wear a facemask (due to its causes trouble breathing or other reason) then you should cover your coughs and sneezes, and but when the people who are caring for you enter your room they should wear a facemask (Facemasks may be in short supply and they should be saved for caregivers).

- Stay home for duration of time and follow your doctor's instructions.
- If you are sick, avoid sharing bedding, dishes, glasses and other household items
- If possible, use a separate bathroom and toilets from the family.
- If surfaces are dirty, clean them, and use detergent or antiseptic soap and water
- Apply disinfectant daily on frequently touched surfaces. This includes desks, phones, keyboards, toilets, faucets, tables, doorknobs, light switches, countertops, handles, and sinks.
- Identify and Isolate Suspected Cases
- Before clinical care is started, Identify the potential cases as soon as possible and isolate the suspected people separately from those who confirmed cases of the virus COVID-19, to Prevent the potential transmission of infection to other patients and health care staff.
- Avoid direct physical contact (including physical examination and exposure) to respiratory and other body secretions. For instance, move potentially infectious people to isolation rooms and close the doors. In a working place, make the distance in workers, customers, and other visitors, especially from potentially infectious individuals location
- In case of need to isolate a patient or patient group, pharmacies should designate and prepare a suitable space
- Most patients presenting in community pharmacies are unlikely to have COVID-19. If they have coughs, colds or flu-like symptoms but not relevant to COVID-19, travel or contact history, pharmacies should proceed in line with their best practice and routine management of the cross-infection risks to staff and other patients.
- Restrict the number of individuals entering isolation areas, including the room of a patient with suspected and confirmed COVID-19.

REFERENCES

- Arabi YM, Arabi YM, Shalhoub S, Mandourah Y, Ribavirin and Interferon Therapy for Critically Ill Patients With Middle East Respiratory Syndrome: A Multicenter Observational Study. *Clinical infectious diseases: an official publication of the Infectious Diseases Society of America*. 2019.
- Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol*. 2005;8:19–32.
- Backer JA, Klinkenberg D, Wallinga J. The incubation period of 2019-nCoV infections among travellers from Wuhan. *China Euro Surveill*. 2020; <https://doi.org/10.2807/1560-7917.ES.2020.25.5.2000062>.
- Bansal M. Cardiovascular disease and COVID-19. *Diabetes Metab Syndr* 2020;14:247–50.
- Barcena M, Oostergetel GT, Bartelink W, Faas FG, Verkleij A, Rottier PJ, Koster AJ, Bos BJ. Cryoelectron tomography of mouse hepatitis virus: Insights into the structure of the coronavirus. *Proceedings of the National Academy of Sciences of the United States of America*, 2009;106(2): 582–587.
- Brian DA, Baric RS. Coronavirus genome structure and replication. *Curr Top Microbiol Immunol* 2005;287:1–30.
- Che Xiao-Yan, Qiu Li-Wen, Pan Yu-Xian, Wen Kun, Wei Hao, Zhang Li-Ya, Sensitive and specific monoclonal antibody-based capture enzyme immunoassay for detection of nucleocapsid antigen in sera from patients with severe acute respiratory syndrome. *J Clin Microbiol* 2004 Jun;42(6):2629–35. <https://doi.org/10.1128/JCM.42.6.2629-2635.2004>.
- Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y, Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *Lancet*. 2020; 395:507–13.
- Chen Z.; Zhang W.; Lu Y From SARS-CoV to Wuhan 2019-nCoV Outbreak: Similarity of Early Epidemic and Prediction of Future Trends.: Cell Press, 2020.
- Chiappelli F, Khakshooy A, Greenberg G. CoViD-19 immunopathology and immunotherapy. *Bioinformatics* 2020; 16:219–22.
- D'Amico F, Baumgart DC, Danese S, Peyrin-Biroulet L. Diarrhea during COVID-19 infection: pathogenesis, epidemiology, prevention and management. *Clin Gastroenterol Hepatol* 2020.

- Drexler, J.F., Gloza-Rausch, F., Glende, J., Corman, V.M., Muth,D., Goettsche, M., Seebens, A., Niedrig, M., Pfefferle, S., Yor-danov, S., Zhelyazkov, L., Hermanns, U., Vallo, P., Lukashev, A.,Muller, M.A., Deng, H., Herrler, G., Drosten, C., Genomic characterization of severe acute respiratory syndrome-related coronavirus in European bats and classification of coronaviruses based on partial RNA-dependent RNA polymerase gene sequences. *J. Virol*, 2010; 84: 11336–11349.
- Erin K. McCreary E.K, and Pogue J.M, COVID-19 Treatment: A Review of Early and Emerging Options, on behalf of the Society of Infectious Diseases Pharmacists. <https://watermark.silverchair.com/>
- Fehr AR, Channappanavar R, Perlman S. Middle East respiratory syndrome:emergence of a pathogenic human coronavirus. *Annu Rev Med*. 2017;68:387–99.
- Gong Feng, Zheng Kenneth I, Yan Qin-Qin, Rios Rafael S, Targher Giovanni, Byrne Christopher D, COVID-19 and liver dysfunction: current insights and emergent therapeutic strategies. *J Clin Transl Hepatol* 2020 Mar 28;8(1):18–24. <https://doi.org/10.14218/JCTH.2020.00018>
- Gralinski LE, Menachery VD. Return of the coronavirus: 2019-nCoV. *Viruses*. 2020;12:135.
- Hong KH, Lee SW, Kim TS, Huh HJ, Lee J, Kim SY, Guidelines for laboratory diagnosis of coronavirus disease 2019 (COVID-19) in Korea. *Ann Lab Med* 2020 Sep;40(5):351–60. <https://doi.org/10.3343/alm.2020.40.5.351>.
- J. Zhang, M. Litvinova, W. Wang, Y. Wang, X. Deng, X. Chen, M. Li, W. Zheng, L. Yi, X. Chen, Q. Wu, Y. Liang, X. Wang, J. Yang, K. Sun, I.M. Longini Jr., M.E. Halloran, P. Wu, B.J. Cowling, S. Merler, C. Viboud, A. Vespignani, M. Ajelli, H. Yu, Evolving epidemiology and transmission dynamics of coronavirus disease 2019 outside Hubei province, China: a descriptive and modelling study, *Lancet Infect Dis*. (2020)
- Lechien JR, Chiesa-Estomba CM, De Siaty DR, Horoi M, Le Bon SD, Rodriguez A, Olfactory and gustatory dysfunctions as a clinical presentation of mild-to-moderate forms of the coronavirus disease (COVID-19): a multicenter European study. *Eur Arch Otorhinolaryngol* 2020 Aug;277(8):2251–61. <https://doi.org/10.1007/s00405-020-05965-1>.
- Li M, Chen L, Zhang J, Xiong C, Li X. The SARS-CoV-2 receptor ACE2 expression of maternal–fetal interface and fetal organs by single-cell transcriptome study. *PLoS One* 2020;15:e0230295.

- Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *N Engl J Med.* 2020. <https://doi.org/10.1056/NEJMoa2001316>
- Li T, Wei C, Li W, Hongwei F, Shi J. Beijing Union Medical College Hospital on "pneumonia of novel coronavirus infection" diagnosis and treatment proposal (V2.0). *Med J Peking Union Med Coll Hosp.* 2020. <http://kns.cnki.net/kcms/detail/11.5882.r.20200130.1430.002.html>.
- Li Wenhui, Moore Michael J, Vasilieva Natalya, Sui Jianhua, Wong Swee Kee, Berne Michael A, Angiotensin-converting enzyme 2 is a functional receptor for the SARS coronavirus. *Nature* 2003 Nov 27;426(6965):450–4. <https://doi.org/10.1038/nature02145>. Liu PP
- Liu T, Hu J, Kang M, Lin L, Zhong H, Xiao J, Transmission dynamics of 2019 novel coronavirus (2019-nCoV). 2020; doi: <https://doi.org/10.1101/2020.01.25.919787>.
- Loeffelholz MJ, Tang YW. Laboratory diagnosis of emerging human coronavirus infections—the state of the art. *Emerg Microbe. Infect* 2020;9:747–56.
- Luk H. K., Li X., Fung J., Lau S. K., Woo P. C. (Molecular epidemiology, evolution and phylogeny of SARS coronavirus. *Infection, Genetics and Evolution*, 2019; 71: 21-30.
- M. Zheng, Y. Gao, G. Wang, G. Song, S. Liu, D. Sun, Y. Xu, Z. Tian, Functional exhaustion of antiviral lymphocytes in COVID-19 patients, *Cell Mol Immunol.* (2020), <https://doi.org/10.1038/s41423-020-0402-2>.
- Ming WK, Huang J, Zhang CJ. Breaking down of healthcare system: mathematical modelling for controlling the novel coronavirus (2019-nCoV) outbreak in Wuhan. *China bioRxiv.* 2020. <https://doi.org/10.1101/2020.01.27.922443>.
- Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 2009;6 (e100097). <https://doi.org/10.1371/journal.pmed.1000097>.
- Mulangu S, Dodd LE, Davey RT, Jr., A Randomized, Controlled Trial of Ebola Virus Disease Therapeutics. *The New England journal of medicine.* 2019;381(24):2293-2303. Neuman BW
- Nishiura H, Jung SM, Linton NM, Kinoshita R, Yang Y, Hayashi K, The extent of transmission of novel coronavirus in Wuhan, China, 2020. *J ClinMed.* 2020;9:330.
- O'Keefe BR, Giomarelli B, Barnard DL, Broad-spectrum in vitro activity and in vivo efficacy of the antiviral protein griffithsin against emerging viruses of the family Coronaviridae. *Journal of virology.* 2010;84(5):2511-2521.

- Peiris, J. S. M., Lai S. T., Poon L. et. al. Coronavirus as a possible cause of severe acute respiratory syndrome. *The Lancet*, 2003; 361(9366): 1319- 1325.
- Poyiadji N, Shahin G, Noujaim D, Stone M, Patel S, Griffith B. COVID19-associated acute hemorrhagic necrotizing encephalopathy: CT and MRI features. *Radiology* 2020.
- Read JM, Bridgen JRE, Cummings DAT, Ho A, Jewell CP. Novel coronavirus 2019-nCoV: early estimation of epidemiological parameters and epidemic predictions. medRxiv. 2020; doi: <https://doi.org/10.1101/2020.01.23.20018549>.
- Riou J, Althaus CL. Pattern of early human-to-human transmission of Wuhan 2019 novel coronavirus (2019-nCoV), December 2019 to January 2020. *Euro Surveill.* 2020;25(4). <https://doi.org/10.2807/1560-7917.ES.2020.25.4.2000058>.
- Rizzo P, Vieceli Dalla Sega F, Fortini F, Marracino L, Rapezzi C, Ferrari R. COVID-19 in the heart and the lungs: could we 'Notch' the inflammatory storm? *Basic Res Cardiol* 2020;115:31.
- Shen K, Yang Y. Diagnosis, treatment, and prevention of 2019 novel coronavirus infection in children: experts' *World Journal of Paediatrics*, February 2020. <https://doi.org/10.1007/s12519-020-00343-7>.
- Shen M, Peng Z, Xiao Y, Zhang L. Modelling the epidemic trend of the 2019 novel coronavirus outbreak in China. *bioRxiv.* 2020; <https://doi.org/10.1101/2020.01.23.916726>.
- Siegel D, Hui HC, Doerffler E, Discovery and Synthesis of a Phosphoramidate Prodrug of a Pyrrolo[2,1-f][triazin-4-amino] Adenine C-Nucleoside (GS-5734) for the Treatment of Ebola and Emerging Viruses. *Journal of medicinal chemistry.* 2017;60(5):1648-1661.
- Sikachi R, Agrawal A. Whole body point of care ultrasound for COVID-19: a multi-system approach to a multi-system disease. *Anaesthesia* 2020.
- Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *Int J Surg* 2020 Apr;76:71-6. <https://doi.org/10.1016/j.ijsu.2020.02.034>.
- Subissi, L.; Posthuma, C.C.; Collet, A.; Zevenhoven-Dobbe, J.C.; Gorbalenya, A.E.; Decroly, E.; Snijder, E.J.; Canard, B.; Imbert, I. One severe acute respiratory syndrome coronavirus protein complex integrates processive RNA polymerase and exonuclease activities. *Proc. Natl. Acad. Sci. USA* 2014, 111, E3900-E3909.

- Tian S, Hu W, Niu L, Liu H, Xu H, Xiao SY. Pulmonary pathology of early-phase 2019 novel coronavirus (COVID-19) pneumonia in two patients with lung cancer. *J Thorac Oncol* 2020;15:700–4.
- Trafton A, Chu J, Covid-19 diagnostic based on MIT technology might be tested on patient samples soon, | MIT News Office March, 2020. <http://news.mit.edu/2020/covid-19-diagnostic-test-prevention-0312>
- Wang B, Li R, Lu Z, Huang Y. Does comorbidity increase the risk of patients with COVID-19: evidence from meta-analysis. *Aging (Albany NY)* 2020; 12:6049–57.
- Wang C, Wang X. Prevalence, nosocomial infection and psychological prevention of novel coronavirus infection. *Chin General Pract Nurs.* 2020;18:2–3.
- Wang W, Tang J, Wei F. Updated understanding of the outbreak of 2019 novel coronavirus (2019-nCoV) in Wuhan, China. *J Med Virol.* 2020;92:441–7.
- Woo PC, Huang Y, Lau SK, Yuen KY. Coronavirus genomics and bioinformatics analysis. *Viruses*, 2020; 2: 1804-20.
- Wu JT, Leung K, Leung GM. Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: a modelling study. *Lancet.* 2020; [https://doi.org/10.1016/S0140-6736\(20\)30260-9](https://doi.org/10.1016/S0140-6736(20)30260-9)
- Xu L, Liu J, Lu M, Yang D, Zheng X. Liver injury during highly pathogenic human coronavirus infections. *Liver Int* 2020.
- Xu Yi, Li Xufang, Zhu Bing, Liang Huiying, Fang Chunxiao, Gong Yu, Characteristics of pediatric SARS-CoV-2 infection and potential evidence for persistent fecal viral shedding. *Nat Med* 2020 Apr;26(4):502–5. <https://doi.org/10.1038/s41591-020-0817-4>
- Yin, Y., Wunderink, R. G. MERS, SARS and other coronaviruses as causes of pneumonia. *Respirology*, 2018; 23(2): 130-137.
- Zaki AM, van Boheemen S, Bestebroer TM, Osterhaus AD, Fouchier RA. Isolation of a novel coronavirus from a man with pneumonia in Saudi Arabia. *N. Engl. J. Med.* 2012; 367: 1814–20.
- Zhang T, Wu Q, Zhang Z. Probable pangolin origin of SARSCoV-2 associated with the COVID-19 Outbreak *Curr Biol* 2020;30. 1346–51.
- Zhao D, Yao F, Wang L, Zheng L, Gao Y, Ye J, A comparative study on the clinical features of coronavirus 2019 (COVID-19) pneumonia with other pneumonias. *Clin Infect Dis* 2020 Jul 28;71(15):756–61. <https://doi.org/10.1093/cid/ciaa247>.

- Zhao L, Jha BK, Wu A, Elliott R, Ziebuhr J, Gorbalenya AE, Silverman RH, Weiss SR. Antagonism of the interferon-induced OAS-RNase L pathway by murine coronavirus ns2 protein is required for virus replication and liver pathology. *Cell host & microbe*, 2012; 11(6): 607–616.
- Zhou P, Yang XL, Wang, XG, Hu B, Zhang L, Zhang W, Discovery of a novel coronavirus associated with the recent pneumonia outbreak in humans and its potential bat origin. *bioRxiv*. 2020; doi: <https://doi.org/10.1101/2020.01.22.914952>
- Zhu J, Ji P, Pang J, Zhong Z, Li H, He C, Clinical characteristics of 3062 COVID-19 patients: A meta-analysis. *J Med Virol* 2020 Apr 15. <https://doi.org/10.1002/jmv.25884>
- Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med*. 2020. <https://doi.org/10.1056/NEJMoa2001017>.

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