



# Students Act as 21<sup>st</sup> Century Preventive-Pandemic-COVID-19 Model: Improved Advance-Clinical-Toxicology Biomedicine Green-Socio-Economy Science-Technology-Innovations

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## Abstract

The pandemic-COVID-19 adverse effects on the environment, travel, education and clinical research, and the global health of humans and animals, and the impact on human-civilization, agriculture, global socio-economy, and damage brain-tissue or long term neurological-disorder, with more than 88-million infections and more than 1.8-million death of human lives. Recently the application of vaccine starts, but its proper efficacy, longevity, cost-effectiveness, allergic-toxic-reaction, and chance of reinfection due to new variant and mutation, are not still known. Though the middle-and upper-classes are able to tackle, but the economically poor-households, the marginalized in the Purba Bardhaman district, and groups like senior-citizens and street-children and animals, are badly affected still now. So in this paper students act as a 21st-century preventive-pandemic-COVID-19 model, improving advanced-clinical-toxicology, biomedicines, green-socio-economy, and science-technology-innovations-communication by boosting community immunity or herd-immunity, and developing policy-initiative social strategies issues, removing the adverse effects of chemicals on living organisms and clinical studies in all areas of toxicology. This paper is considered the possible pathway of future pandemic COVID-19 like's virus-free world.

**Keywords:** Students; 21<sup>st</sup> Century-Preventive-COVID-19-Model; Improved; Advance-Clinical-Toxicology; Biomedicine; Green-Socio-Economy; Science-Technology-Innovations

## Introduction

In this paper, it is planned to overcome the 'Midst Human Challenges Viral Pandemic COVID-19' with the help of higher secondary students (Plate 1) of Kanchannagar D.N.Das High School (HS), Kanchannagar, Burdwan, West Bengal, India, based on the theme "Vision 2040", aiming the students, teachers and communities relationships with the 'Common Goals for removing immunotoxicity, neurotoxicity and drug toxicity' [1] for the effective advancement of science and technology- 'Innovative Partnership' and fulfill the objectives,

and resources that would retain the human civilization's in the 'Old or New Normal Forms' in the following ways.

### Emphasis on Consumption of Nutritious Food

The students aware among the 195 families in the three different areas of Bardhaman (Table 1), consumption of weed, vegetables, and fruits like amaranth, okra, cowpea and cucumber etc., nutritious, as well as traditional medicine for preventive measures against many human- and plants-diseases including COVID-19 with the help of virtual meeting

as well as direct awareness among the students, maintain COVID-19 protocol or rules and regulations, and 1251 family are benefitted [2-8] and And the activities were conducted

and measured from 15<sup>th</sup> March 2020 to 17<sup>th</sup> January 2021 and up-to-date. All the data were counted for statistical analysis by 't'-test ( $P < 0.01$ ).

Students Activity Rural / Semi-Urban / Urban Area	Number of Infected Person (COVID +Ve)	Number of Family	Number of Family Member	Number of Containment Zones	Number of the Slum Area	Rate of Recovery (%)	Rate of Mortality (%)	COVID-19				Remarks
								Active (Symptomatic cases)		Passive (Asymptomatic cases)		
								Age Group (<60)	Age Group (<18)	Age Group (<60)	Age Group (<18)	Home Quarantine / COVID-19 hospital
I. Rural Area	1c±0.01	65a ±0.02	398b ±1.14	1a±0.01	4b±0.02	100%	Nil	0	0	1c±0.01	0	One migratory labor in the home quarantine
II. Semi-Urban Area	2b±0.02	65a ±0.13	595c ±1.35	1a±0.01	4b±0.02	100%	Nil	0	0	2b±0.01	0	Two migratory labor stay in the COVID-19 hospital
III. Urban Area	4a±1.22	65a ±0.02	258a ±0.12	1a±0.01	2a±0.02	75%	25%	1±0.01	0	3a±0.02	0	Three COVID19+Ve stay in home quarantine and other admitted in the COVID-19 hospital
Total: 3	7	195	1251	3	10	85.71%	14.28%	1	0	6	0	All survive except the one senior citizen in urban area

**Table 1:** Higher secondary student's activities regarding COVID-19 infection in the 3-study area 15th March 2020 to 17th January 2021.

**a,b,c:** Significant difference by 't'-test ( $P < 0.01$ ) in the same column.

### Emphasis on Multiple-Inter-Cropping

Many naturally infected plant diseases caused by different pathogens adversely affect food production in agriculture and the economy of the country, which are remarkably controlled by multiple-intercropping, and enriched production as well as the nutrient quality of soil, and farmers as well as communities are double benefitted, without using any toxic chemical pesticides [4,6-9].

### Emphasis on Different Social Responsibilities with Community

The different social-awareness virtual camp (VC) organized among the students and communities in different

ways, use masks, clean-hands with soap, maintain physical-distance, avoid-touching eyes-nose-mouth, adopt strict-lockdown-measures, arrange blood-donation-camp, tree-plantation with conservation-biodiversity, day-celebration, and reduce-economic-activities to a minimum, distributing-rations to families in slums to providing cooked-meals to migrants to ensuring that senior-citizens have medicines, distributing-clothes, educational-materials also, and by taking some simple precautions, and nutritious vegetables for improving immunity to human disease-free-healthy-life [5].

### Emphasis on Experimental Learning Project

Recently in the last birth anniversary of Hon'ble Ex-President, Late Dr. APJ Abdul Kalam, the Government of India

has been declared as Rashtriya Avishkar Saptaha-2020, at the school level for the joyful and meaningful encouragements, and engagements, and the creative activity, to nature, innovations and use of technologies among the students, communities, and teacher by virtual meeting or workshop on the "Water auditing and Calculation of carbon footprint", which directly or indirectly the environment, agriculture, socio-economic and biodiversity, by proper use or reuse of water and resisting emission of Co<sub>2</sub>, forming toxic-free world [10].

### Emphasis on Civil-Engineering COVID-19 Epidemic-Model

The students aware among communities and other students of the three areas of rural and urban areas, organized a virtual meeting for suggestion and constructs or set up different types of the attic artificial nest in the attic, rainwater harvesting with fishery and floating gardening covered by wired-net with the artificial nest, shaded by solar-panel supplying electricity for the oxygen-producing motor in water, OR rooftop-/-vertical-gardening attached with 'Bird's- / Sky-Observer Box-shaped Balcony', forming the common complex toxic-free ecosystem on ecology food-chain relationships issues, and nutritious kitchen garden

management, micro-and macro- climate issues, and also community health, etc., related to the adverse effects of chemicals on living organisms and clinical studies in all areas of toxicology like immunotoxicity, neurotoxicity and drug toxicity [1,11-12].

### Emphasis on Development of Biomedicines Social Vaccine or Vaccine

The students aware of saving toxic-free conservation of biodiversity of plants and animals, for the proper biomedicine, social vaccine, or vaccine for epidemic diseases [2-20].

### Emphasis on Science and Technology Communication Applications

The total activities and impact (Tables 1,2 & Plate 1), is viewed by the students of different classes, teachers, researcher, staff, community, photographers, visitors, administrators, institutions, farmers, NGOs, and media personnel campaign, aware, discuss, arrange workshops and seminars, make news and publish in different national- and local- audiovisual media (TV channels), different social media, web pages, newspapers and different -national and -international Journals as well as Congress Proceedings also [2-20].



**Plate 1:** Different activities of the students of Kanchannagar D.N.Das High School (HS).

## Part I: Related to COVID-19.

i)	<b>Total No. of COVID Positive Patients found on the day of reporting *</b>	:	<b>11</b>
ii)	Total no of COVID positive patients**	:	<b>11994</b>
iii)	Total no of active patients as on today***	:	<b>85</b>
iv)	Total no of discharged cases	:	<b>11732</b>
v)	Total no of COVID death recorded	:	<b>177</b>
<b>Quarantine status</b>			
vi)	Total no of persons under institutional quarantine	:	<b>538</b>
vii)	Total no of persons under house quarantine	:	<b>0</b>
viii)	Total no of persons under quarantine from Maharashtra, Delhi, Gujarat, Tamil Nadu & M.P.	:	<b>733</b>
ix)	Total no of persons under quarantine from other state of India	:	<b>27</b>
x)	Total no of persons relaxed from institutional quarantine	:	<b>192</b>
<b>Testing status</b>			
xi)	Total no of Sample collected up to 16.01.2021	:	<b>170066</b>
xii)	Total no of Sample tested	:	<b>169320</b>
xiii)	Total no of Positive cases	:	<b>6802 (+50 repeat +ve)</b>
xiv)	Total no of negative Cases	:	<b>161385(+1083spillage/rejected)</b>
<b>Containment Zone status</b>			
xv)	Total no of Containment Zone as on today	:	<b>110</b>
xvi)	Total no of containment withdrawn	:	<b>4103</b>
<b>On date – Positive-</b>			
xvii)	Total No. of Migrant (Other State + Other Dist. of WB):	:	<b>0</b>
xviii)	No. of Persons in Safe House:	:	<b>0</b>
xix)	No. of Person in Covid Hospital:	:	<b>3</b>
xx)	No. of Persons in Home Isolations:	:	<b>8</b>
<b>Analysis on COVID-19 +Ve Cases</b>			
xxi)	Rate of Recovery# (Percentage)	:	<b>97.81</b>
xxii)	Rate of Mortality# (Percentage)	:	<b>1.47</b>
<b>Report on Sample Testing</b>			
xxiii)	Antigen Test	:	<b>99</b>
xxiv)	RT-PCR Test	:	<b>801</b>
xiv)	Test Result within 24 Hrs.	:	<b>164 (RAT-99 + RTPCR-65)</b>

**Table 2:** Daily Press Briefing: Purba Bardhaman.  
Date: 17/01/2021 (Up to 5.00 P.M.):(Report to be sent by 7.00 P.M Daily)  
#on Total Positive Case

**Part- II:** Related to COVID-19.

Analysis on COVID +Ve Cases on 17/01/2021		*COVID Positive as on today	**Total Positive Cases
Type	Symptomatic	3	1808
	Asymptomatic	8	10186
Total		11	11994
Contact Analysis	Primary Contact	2	1364
	Travel from High Burden Dist. of W.B.	0	215
	Travel from Other State	0	435
	No Travel History	9	9980
Total		11	11994

Distribution of COVID Positive Cases found on 17/01/2021[Burdwan Municipality: 06, Katwa Municipality: 01, Aushgram-I: 01, Jamalpur: 02, Ketugram-I: 01].

**Table 2:** COVID-19 report on 17th January 2021 of Purba Bardhaman district (Part-I & II).

### Conclusion

It may be concluded that this paper should be considered for the possible pathway of future pandemic COVID-19 like's virus-free world, where the student's act as a 21st-century preventive-pandemic-COVID-19 model, improving advanced-clinical-toxicology, biomedicines, green-socio-economy, and science-technology-innovations-communication (Tables 1,2 & Plate 1) by boosting community immunity or herd-immunity, and developing policy-initiative social strategies issues, removing the adverse effects of chemicals on living organisms and clinical studies in all areas of toxicology like immunotoxicity, neurotoxicity and drug toxicity etc.

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