



Indian Society of Analytical Scientist

ISAS - Nagpur Chapter

(Established in 1983 at Bhabha Atomic Research Centre, Mumbai)

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Dear Sir,

Dated : 18th July, 2020

- Sub: 1. Report By ISAS - On Post Covid-19 Scenario Management in India.
2. Evolved After a Comprehensive Webinar on 4th July, 2020.
3. Recommendation to institute a National Pandemic Management Mission.
4. Offer of Expertise for Implementation of above (Sub 3).

Greetings from ISAS, a leading National Professional Body of Scientists, Technical Experts and Academicians, spread all over India and these technologies forming active part of practically all the sectors of national development.

As a national professional body, we are committed to contribute to the various national development issues. As part of this policy of ours, we have conducted this Webinar on, "Post Covid-19....."

We are enclosing a Report, indicating our recommendation, focused upon regular and long term solution for dealing with the Post-Covid 19 Pandemic.

We recommend the formation of a "National Pandemic Management Mission".

We strongly feel that, it is essential for our eminent planners for our great nation, to take care of these issues aptly, seriously and execute "preparedness at short notice" and "rapidly reach out to the ordinary citizens" of India.

This will also be a feather in the cap of Niti Aayog and our great democracy, by lifting it to the top of all democracies in the world.

We will be happy to associate with the efforts of Niti Aayog in implementation of these recommendations, as part of the apex body.

With best wishes, we say Jai Hind.

Enclosure: ISAS Report, as above.

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A Report
On

National Webinar

on

Pandemic Perceptiveness in the Post COVID-19 India.

Held On 4th July, 2020

Conducted

By

Nagpur Chapter

Of

Indian Society of Analytical Scientists (ISAS)

(the National Professional Body of
Indian Scientists, Technologists and
Academicians specialized
In Analytical Sciences.)

Chaired

By

Raghav Saran, Vice President, ISAS

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A. Event At A Glance

I. About the Event:

- a. Category : Technical Deliberations and Awareness on Covid 19 Pandemic.
- b. Title of the event : National Webinar on Pandemic Perceptiveness in the Post COVID-19 India.
- c. Conducted By : Indian Society of Analytical Scientists (ISAS), the National Professional Body of Indian Scientists, Technologists and Academicians specialized In Analytical Sciences.
- d. Date : 4th July 2020, by Webinar.
- e. No. of Resource Persons : 4
- f. No. of participants registered : 682

II. About ISAS and the Organisers:

Indian Association of Analytical Scientists, (ISAS) Nagpur Chapter, organized a webinar on Pandemic Perceptiveness in the post COVID-19 World on 4th July, 2020 between 10.00am to 1.00pm. Webinar was started with opening remark by Dr. Avinash V. Bharati, Chairman, ISAS, Nagpur Chapter and convener of the webinar followed by Dr. Raghaw Saran, Advisor, ISAS on activities of ISAS, Nagpur Chapter. Dr. Chandrachoodan, National President of ISAS gave the presidential address. Dr. Jyotsna Meshram, Professor, PGTD of Chemistry, RTMNU, Nagpur and Coordinator of Webinar told about the concept of webinar.

III. About Chairman Of the Webinar:

The Webinar was chaired by Dr. Raghaw Saran, Former Senior Scientist (Director Grade) AMD / Department of Atomic Energy and Vice President, ISAS.

IV. About Resource Persons and Topics deliberated By Them::

1. Dr. Sudhir Meshram, Former Vice Chancellor, North Maharashtra University and Founder director, Rajiv Gandhi Biotechnology center, Nagpur, in his lecture focused on the impact of biological warfare against in post COVID-19 world. He gave an insight on impact of biological warfare agents.
2. Dr. [M.K.N](#) Yenkie explained the consequences of using excessive chemical sanitizers and disinfectants.
3. Dr. G. S. Saini, Former Director national Fire Service College and National Civil Defence College, Nagpur emphasis on personal protection of community during pandemic.
4. Shri K. M. Nadayal, Former Director National Civil Defense College, Nagpur make aware about relevance of community preparedness during pandemic situation. He also told about the precautionary measures to be adopted in the current scenario.
The interactive session at the end of the webinar focused on challenges of post covid-19 and on preparedness of post covid-19 with question answer session.
5. In his Concluding remark, Chairman Dr. Raghaw Saran briefed the findings of webinar and requested the audience to take utmost care and precautions to control COVID -19.
6. Around 678 participants from different part of the country and 5 participants from abroad also participated and benefited from this event.

7. Dr. Indrayani Das Sharma, Joint Secretary, ISAS Nagpur Chapter and Dr. Vijay Tangde assistant Professor, PGTD of Chemistry, RTM Nagpur University took lot of efforts for the success of the Webinar.

B. FINDINGS.

- ❖ Sanitizers with alcohol base dissolve the lipid envelope & inactivate the virus of any type including SARS CoV-2, causing pandemic Covid -19, the most worrying one in the present & post pandemic scenario.

Excessive use of Chemical sanitizers *must be avoided* as it contains ethanol(80% v/v) or 2-propanol(75%v/v), a volatile component which vaporizes taking heat from the surface applied on. The skin may get dry although glycerol present in it (1.45%,v/v) moisturizes skin to some extent.

Further, the sanitizers also contain hydrogen per-oxide(0.125%,v/v), an oxidant, that too may have an adverse effect.

Basically, pin shaped soap molecules with a hydrophilic (water loving) head and oleophilic (oil loving)tail is most useful in rendering the virus inactive.

Tail with high affinity for and competes with the lipids in the virus envelope. Besides, tail changes the shape, denatures the mushroom shaped spiked protein structure (Encapsulating the virus), helping the virus to bind to human cell and entering into the cell. Chemical bond holding the virus is not very strong, the long oleophilic tail gets inserted into the envelope and breaks the envelope with a crow bar effect. Tail also competes with the bond with RNA lipid envelope, dissolves the virus into its components and is removed by water. *Sanitizers should be used only if we don't have access to water & soap can't be used.*

2. Sanitizers are not effective if hands are visibly greasy or dirty. In such cases, excessive amounts of sanitizers have to be used which is not advisable (discussed above).

3. Even if we have used sanitizer, at the very first opportunity, we should wash our hands with soap to remove inactivated virus, sticking to hands/ sanitized surface.

4. SARS-CoV-2 spreads primarily person to person through airborne respiratory droplets. But it may be possible for the virus to spread on surfaces and various other places in present scenario through airlines carrying Covid-19 patients, making use of disinfectant inevitable to inactivate SARS CoV -2.

Disinfectants are used alone or in combination (e.g. hydrogen peroxide and peracetic acid), alcohols, chlorine and chlorine compounds, formaldehyde, glutaraldehyde, ortho-phthalaldehyde, iodophors hydrogen peroxide, peracetic acid, phenolics, and quarternary ammonium compounds.

Alcohol-based products disintegrate the protective lipids. Quarternary ammonium disinfectants commonly used in health-care and food-service industries attack protein and lipid structure. Bleach and other oxidizers swiftly break down virus essential components.

70% alcohol or chloroxylenol (4.5-5.5%,v/v) /benzenealkonium chloride or any other suitable disinfectant may be used to wipe down the surfaces like metal. Freshly prepared 1% sodium hypochlorite is used as disinfectant usually by municipal authorities.

5. Spray of disinfectant (usually 1% sodium hypochlorite solution) in tunnels or chambers to disinfect people suffering from covid -19 or even otherwise, passing through them is not advisable. The disinfectant cannot inactivate the corona virus inside the body, even it may not be very effective for clothing.

Besides, the disinfectant may enter in the body through pores in the skin and may cause more harm than advantage.

- ❖ Disaster management plan for post Covid community preparedness is based on several parameters. Government leadership, health sector, non-health sectors, communities, civil society organizations, individuals and families play a very important role in disaster management. Broadly, it has two main components

1. Passive Management

2. Active Management

1. Passive management mainly involves prior preparedness of men, material and resources to face the disaster as and when the need arises, efficiently.

It is mainly keeping abreast with day to day happenings /news and visualizing a fore coming disaster, making arrangements beforehand to keep requisite infrastructures ready at hand in order to face the need based situations during the disaster.

Government may form regulations to deal with a situation but it cannot ensure their compliance by public. To ensure following of the regulations dependence on military /army should be avoided to the utmost possible extent.

On the contrary, an adequate force of large number of volunteers, helping agencies, NGOs, government officials etc. should be made ready by imparting suitable adequate training. The task force should come forward to assume the responsibility. The task force may also involve in preparedness efforts and their expertise be harnessed to help communities prepare for and respond to pandemic.

Active management is facing the situation during the disaster efficiently which depends in toto how well we had prepared our resource component i. e. men in form of volunteers, NGOs etc., material and resources.

More we are prepared for a situation better we would handle.

It's advisable to make prior preparations to face a situation as and when arises.

For example, to cope up with the existing and daily increasing number of covid-19 patients, to increase the capacity of health services, we have to arrange additional beds and associated facilities such as adequate washrooms, workers to maintain cleanliness, paramedical staffs such as nurses, ward-boys, Doctors, medicines etc. Arrangement of healthy food is very essential for patients. Proper care to serve the food (with observing all hygiene) in time is equally important. In case of quarantine / isolation besides these, some people responsible to ensure observing personal hygiene including respiratory etiquette, washing hands with soap properly/ if not feasible using proper sanitizer(with alcohol content at least 60%,V/V) are essential. Volunteers, social workers, NGOs etc would be great help in such cases. Government official's meager number even with their best of motives may not suffice at all.

- ❖ Personnel protection for community during and post Pandemic is of immense concern.

Personal protective equipment encompasses the specialized clothing or equipment worn by workers for protection against health and safety hazards. Personal protective technologies include the protective equipment as well as the techniques, tools, and materials that support to control COVID-19.

The healthcare personnel's, PPE kit may include respirators, face masks, gloves, eye protection, face shields, gowns, and head and shoe coverings. Respirators provide respiratory protection. The products are designed primarily to provide a barrier against microbes/corona virus contacting the skin or mucous membrane surfaces.

Airborne precautions include a well fitted high-filtration mask to be reserved for aerosol-generating procedures.

It's not very convenient to wear PPE kit due to being cumbersome although it is must for health care personnel during their services in health centers. It is of vital importance to observe social distancing of 1.8 meter preferably (3 ft, WHO recommendation) with suitable face mask (N 95 or any other well fitting) which should be immediately disposed after use. Touching mouth, eyes or nose by hand must be avoided as hands can pickup viruses on coming in contact with an infected surface. Besides, respiratory hygiene like covering mouth or nose, with bent elbow or tissue while coughing or sneezing, must be observed.

- ❖ Awareness regarding biological warfare in post covid-19 world too, is of significance. Framing of new laws to tackle the situation is essential to avoid the recurrence of biological warfare

i.e. use of biological toxins or infectious agents such as bacteria, viruses, insects, and fungi to kill or incapacitate humans, animals or plants as in past like mustard gas, yellow rain and several epidemics. It won't be far ahead to think of establishing microbiology labs with state of art techniques to expose well in time any such act which may incapacitate or kill lives on earth.

Work on supramolecular material with excellent application from quantum dots to biomedicine and bioinformatics should be persuaded as a futuristic mindset.

C. Recommendations By ISAS

1. The unprecedented Pandemic of Covid 19, due to Corona V2 is a major Public Health Challenge, till the vaccine and Cure are found out.
2. Government of India and, and under its guidance, all designated agencies in the country are doing the best to tackle this bolt from the blue.
3. However, since the virus is going to stay for longer time and, like in the Spanish Flue Pandemic, return wave of this virus infection or pandemics of this sort to other viruses (like the new strain of H1N1 having detected, again in china, with potential to break out as a new pandemic), it is very essential to practically equip our nation with a

dedicated **National Pandemic Management Mission**, much more empowered than the pattern of Disaster Management which is currently in vogue.

4. Essential Ingredients of **National Pandemic Management Mission**:
 1. Directly operating under the Government of India and linked to every Panchayat/Municipal Ward, through District Administration, all over the nation.
 2. Quick mechanisms to reach out the entire citizens through this network, in case of all exigencies, which necessitate active understanding and total participation of each and every citizen in the implementation of the remedies.
 3. Review, updating and up-keeping (in terms of beds, medicine, staff of etc) all primary Health Centers, Government Hospitals, Medical Colleges, etc for dealing with Pandemics at short notices.
 4. Provision for Integration of all Private Hospitals and doctors in to the stream to manage Pandemics.
 5. Provision for CSR Funds from All Industries, Private Hospitals, etc to support part of the expenditures related to management of Pandemics.
 6. Directions to AYUSH for making regular studies for the validation of time-tested Ayurvedic/Herbal Systems, so that these India Systems can come forward with effective cure, rather than helplessly remaining just as onlookers, defeating all the very claims of their excellence.
 7. To take care to avert fire/personal/fire/environmental/health hazards of various kinds of sanitizers being used in a massive scale. Many sanitizers have high alcoholic content, which make them prone to major fire hazards, when used in enclosed spaces like Aeroplane, AC Buses/Trains, Offices with centralized AC etc. Many chemicals such as nascent chlorine being used have extreme health hazards. Therefore, Principle of Green Chemistry and Industrial/Public Hygiene, Fire Hazard, etc become utmost important issues, especially when, massive manufacture and uses of these hazard-prone compositions are contemplated.
 8. Media propagating sensational news creating a Parallel Pandemic Of Panic need be strictly prohibited enacting specific laws that make such actions as punishable offences.
 9. A National Nutritional and Immunity Programme need be part of the **Pandemic Management Mission**.

10. Every Citizen of India need be made AWARE of his/her CONSTITUTIONAL DUTIES TOWARDS THE NATION, so that they are made accountable for a RESPONSIBLE PARTICIPATION in the **Pandemic Management Mission**, as part of it, rather than always harping only on their Constitutional Rights.

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