



COVID-19: TRAGEDIES IN ELDER CARE HOMES – LESSONS LEARNT

Dr. Mangala Sonavani Borkar*

Professor and Head, Department Of Geriatrics, Government Medical College, Aurangabad. *Corresponding Author

ABSTRACT SARS-Cov-2 is still running amok, while it has brought the whole world to an unprecedented standstill. Even as the scourge rages on, it has exposed the harsh reality about the vulnerability of senior citizens globally, especially in care homes. The frail old inmates there were like sitting ducks and many died in their beds without even oxygen or medicines. The virus has taught the world many lessons that it will never forget. Nearly one fourth of the population of Italy, Spain is in the eighties and beyond and the countries witnessed gruesome tragedies in their nursing homes. If the world could rewrite the history of this ruthless pandemic, what would it be? Isolation, testing and special focus on elders, particularly when they are herded together as in care homes, is of utmost importance.

KEYWORDS : COVID- 19, Coronavirus, Nursing homes, elderly

Covid-19 created havoc in nursing homes in Europe and the U.S in March and April 2020. A government survey in Italy and France suggested that 45 % of all coronavirus deaths could be in care homes. The figures for deaths in nursing homes are 42 % for Belgium, 57 % for Spain and 54 % for Ireland. A shocking story indeed! ⁽¹⁾

Table no : 1 – Percentage of population above 60 and life expectancy

Country	Percentage of Population Above 60	Life Expectancy (in Years)	
		MALE	FEMALE
FRANCE	25.7%	74	85
GERMANY	28%	78	83
ITALY	29.4%	80	85
SPAIN	25.3%	79	85
UK	33%	79	83
JAPAN	11.2%	81.7	88.5
SINGAPORE	12.9%	82.06	86.15
INDIA	9.0%	69.16	71.8
USA	15.4%	76.61	81.65
CHINA	10.7%	75.36	79.73

The following are general features of Nursing homes⁽²⁾ -

- Board and care homes (residential facilities):-
 - Small, private, mostly 20 or fewer residents who can manage themselves.
 - Private and shared rooms.
 - Personal care and meals.
 - Nursing and medical care is usually not available.
- Assisted Living: - help with day to day activities and care.
 - 25-120 residents.
 - Usually have own rooms and share common areas.
- Nursing homes :-
 - Skilled nursing facility available with medical care.
 - Inmates :
 - Temporary, to bridge the gap for a short time after discharge from hospital till they recover and can then go home.
 - Most live permanently due to ongoing physical or mental conditions.
 - Nursing homes generally have registered doctors, nurses, social workers, psychologists who stay in the premises or are on round-the clock duty.
 - They offer :
 - Extensive care – Long term rehabilitation and accommodation.
 - Intensive care – i. Hospice for terminally ill.
 - Rehabilitation with high level medical care.
 - Palliative care.

 - Staying in a Nursing home may be almost three and a half times costlier than a care home (residential old age home).
 - Residents who stay in elder care homes in Europe or USA are partly or totally funded by the government or social agencies, for ex in USA, Medicare and Medicaid . Funding depends on the need as well as the income, pension and assets of the individual. 92-95% elderly still live in their own homes , with their families. However, if they are old, infirm, alone or having severe medical or mobility

problems, they are shifted to residential care facilities or nursing homes.

- Contrary to the stigma that is attached to old age homes in India and many Asian countries, elder care homes are looked upon more objectively ,with a practical viewpoint in Western countries.

Nursing homes in the United States⁽³⁾-

According to the U.S. Bureau of the Census,

- 5 percent of the 65+ population occupy nursing homes, congregate care, assisted living, and board-and-care homes,
- About 4.2 percent are in nursing homes at any given time.

The rate of nursing home use increases with age, from 1.4 percent of the young-old to 24.5 percent of the oldest-old. Almost 50 percent of those 95 and older live in nursing homes.

The types of facilities available to the elderly are increasing with the introduction of custodial care facilities like adult congregate living facilities (ACLF). There are level-one and level-two ACLFs, pertaining to levels of care. Some seniors only need housekeeping and a hot meal. Others need assistance with dressing, bathing and other activities of daily living. Many of today's seniors who are now in nursing homes (because they have nowhere else to go) will continue to be diverted to ACLFs in the future, reducing the nursing home population.

Finally, there are new policies such as reverse mortgages which allow dependent elders to stay in their own homes, using the equity to pay for “in-home care”, further reducing nursing home stays. About 14 percent of all people over age 65 have two to three chronic conditions that erode their ability to live independently.-it is expected that nearly 11 million vulnerable elderly will require assistance as they age. The average age of the victims who died of COVID 19 in nursing homes or at home were 80 years. In USA, nearly 15 lakh elderly, above 65, live in nursing homes and about 60,000 in assisted living facilities⁽³⁾

Nursing homes in Italy^(4,5)

- A study found that a total of 853 residential facilities (RFs) were operating in the five regions in Italy, with an average of 198.0 beds per 10,000 older people — a rate showing marked regional variability.
- The mean number of RF beds was 59.8.
- 96% of these had a 24-hour staff cover.
- A large proportion (29%) were managed by local municipal authorities, religious non-profit associations (24%) and other non-profit organizations (21%).
- In the RFs, 24,456 workers were employed, the number of staff per facility was variable. The mean number of workers directly involved in resident care was 28. and the resident/staff ratio was 2.1.
- These 754 RFs hosted 42,687 residents, with an average of 54 older people in each facility.
- The mean age of the residents was 79 years(a high proportion of residents had neurological, psychiatric and medical disorders).
- It is estimated that about 2% of Italian seniors live in nursing homes. ⁽⁵⁾

State intervention has mainly focused on the provision of financial contributions. An important measure is the “*indennità di accompagnamento*,” a fixed monthly fee (currently 508 EUR) that is paid to the families of non-self-sufficient persons, regardless of their income. In India, there are schemes that are offered to elders who have no one to look after them, like Shravan Bal Yojna. Lombardy, the rich province of Italy, that bore the main brunt of the Covid -19 epidemic, is the only region in Italy, in which the public authority outsources health and nursing services⁽⁶⁾

Nursing homes in Spain- In Spain, around 19% of the population is older than 65; the country has one of the longest life expectancies in the world⁽⁷⁾

- Spain has a lack of nursing home beds, hence old people who cannot afford a private bed have to wait a long time for a free one. But the tradition of old people living with their families helps to compensate for a lack of places. In Spain, only 15% of people aged over 65 lived alone.
- The mean of 2.5 (public and private) nursing home beds per 100 people older than 65 years is below the ratio recommended by the Organisation for Economic Cooperation and Development of 5 per 100 people aged over 65.
- When old people cannot afford a place in a private nursing home, they are offered a place in a publicly financed facility, to which they have to contribute 80% of their retirement pension. If an elderly person has neither personal savings nor a pension, the state will look for a free bed for them, as per their number in the long waiting list.
- In the meantime, the state will offer home services through home healthcare teams^(8,9)

Nursing homes in United Kingdom- Most care homes are privately run and the exact data is not available. According to England's Care Quality Commission (CQC), there are 15,517 residential and nursing homes, with 4,57,361 beds. About 411,000 persons stay in these facilities. Nearly 540,000 elderly receive support for daily activities, meals etc. by care workers who visit them, in their own homes. Nearly 1.2 million work as care givers in England. (465,000 in nursing homes, 610,000 at homes, 150,000 provide day and community care.)⁽¹⁰⁾

Earlier, testing was not freely available to staff or residents, but after the shocking deaths due to Corona in care homes came to light, recently, testing has been made available to symptomatic inmates and care givers. Between 10 and 25 April, 4343 persons died of corona virus in care homes in UK. In Scotland, 40% of the total 2272 deaths were in care homes⁽¹⁰⁾

Nursing homes in France- More than one third of the over 21300 deaths reported have been in care homes, in spite of visits by relatives being stopped even before the national lockdown on March the 17th. Nearly 1 million inmates live in 7400 care homes in France. It was reported that in a nursing home in Paris, 30 inmates died of Corona and corpses lying in body bags in their rooms were found in a decomposed state.⁽¹¹⁾

Nursing homes in Germany- there are around 11700 nursing homes, housing 800,000 seniors. Half of the 165 residents in a nursing home in Wolfsburg were infected and 33 died. The overall toll in nursing homes was lesser than in other European countries⁽¹²⁾

Nursing homes in India – Nearly 9 % of the population is over 60 and is growing, though India is a young country. Though exact figures are not available, it is estimated that there are nearly 1150 facilities for the elderly, of different types, with about 97000 beds, mostly run by private trusts and NGOs, religious and charity groups. Elder homes are not looked upon favorably by most Indians, but with the changing socio-economic scenario and values, at least a ten- fold increase in these facilities is needed. Since the pandemic of Corona has yet been contained at the Stage 2 level and not rampant in the community in India and all elderly homes have shut off visitors⁽¹³⁾, no deaths due to Covid-19 in these care homes has been reported. No unusual rise in deaths in the past few weeks in care homes has been reported, either.⁽¹⁴⁾

Retrospective introspection and after thoughts -

1. Insufficient Testing: - In France, Spain, Italy and many other countries testing has not been freely available. Hardly any tests were carried out in nursing homes for the elderly or even the symptomatic care giver staff at the peak of the pandemic. Till recent days, the focus was only on testing in hospitals. Insufficient testing prevented affected

inmates from being isolated. It also exposed them to infected staff of the care home that was undiagnosed. No one noticed the severe problems in the care homes till it was too late. Now, the blame game between the managers and the government has started. There are many legal suits filed by relatives too.⁽¹⁵⁾

2. Not including nursing home deaths in the death tally- can give a false picture of the magnitude of the problem in the country. It also creates a dangerous situation for inmates of nursing homes, where many may die unnoticed without accountability of care home managers.

In France, once two residents in a nursing home test positive, any other residents who fall sick with similar symptoms and succumb are “assumed” to have the illness, but not counted in the national toll. Same is the case in Italy- half of all nursing home residents who died in the past few weeks had typical symptoms but tests were irregular and their deaths have not been included. Britain recently added the deaths in nursing home to its tally. In Germany, testing is routine for anyone suspected to have Covid-19 or in contacts of patients. The number of persons in German elder care facilities and the deaths are also lower.^(6,16)

On March 18, it was reported that deaths were sweeping across Italy's nursing homes. The inmates developed high fever, breathlessness and many died. Since they were not tested as they were not hospitalized, mostly due to lack of beds, their deaths were not included in the tally. Local dailies mentioned that their obituary page, that was normally one, had increased –they had to print 5 or 10 pages a day. The symptoms, signs were typical, but could not be labeled as Covid due to lack of tests.⁽²⁵⁾

3. Unpreparedness: - Caught Napping?^(6,17)

Many European countries, notably Spain, Italy and France were suddenly flooded with cases which overwhelmed the healthcare facilities, making them run out of masks and PPEs, hospital beds, ICU beds and ventilators. The disease crept into the community from travellers stealthily but rapidly and claimed thousands of lives. There was a complacency and denial in the administration, regarding the menace of COVID-19 in their countries (as per news reports), that prevented prompt preparations in anticipation. The lack of sufficient tests was one major factor that prevented isolation of affected persons who continued to spread the disease. Health care workers were victims and vectors because the lack of PPE, tests, overwork and overexposure infected and even killed many of them. It is reported that the health care staff is rather underpaid and many are not adequately trained. They continued to work knowingly or unknowingly even when infected and spread the disease among the vulnerable elderly. Italy, France, Spain appeared to have lost the precious short span of time that they had after the pandemic showed its claws in China. This is especially the case with Italy, that has significant commercial ties and a lot of interchange of persons from China. These countries could have utilized that time to strengthen their ICU'S, medical services, stocked PPEs and ventilators. When the patients started flooding in, they were caught off guard.

Most of the staff of the elder nursing home may have escaped from serious illness though they were infected, because they were younger. However, the elderly, many in their eighties, bore the brunt and fell like ninepins to this ravage.

4. Errors- There were some errors of judgment and lapses in policies that cost countries dear, where social distancing was thrown to the winds- One occasion was the Champions league match at Milan, Bergamo on the 19th of February-2 days before the first local case in Italy, attended by one third of the population, followed by night long celebrations. More than a third of the team, journalists and thousands of fans got the infection that started manifesting next week, making Bergamo the epicenter of the virus at February end.^(18,19)

Another was the International Women day gathering on 8 March 2020, attended by thousands of women protesting against gender inequality, in spite of a few hundred cases already recorded in Spain. A number of public events had been called off to avoid the spread, but the health emergency coordinator did not consider this particular crowding as a risk. The health minister appealed that those with symptoms should not attend, but obviously, no one paid heed. This mass gathering was followed by escalation in the number of cases and deaths in and around Madrid.⁽²⁰⁾

The US stopped issuing visas to travelers from countries where the epidemic was raging, but allowed its own citizens to return from these hotspots without testing. Indeed, at the earliest instance, as soon as the news broke out, if international flights had been suspended everywhere, the virus may have been controlled better. It was a case of too little, too late for many countries. Of course, this is an afterthought and nobody could have imagined 2 months ago about what a disaster was awaiting them.⁽²¹⁾

5. Overwhelmed health care- Though Italy's health system is highly regarded and has 3.2 hospital beds per 1000 people (as compared with 2.8 in the United States), it has been impossible to meet the needs of so many critically ill patients at one time and protecting its healthcare workers.^(18,22)

6. Mixing COVID-19 patients with others- In Italy, COVID patients were admitted in general hospitals which increased the spread of infection to general patients. India has enforced the policy of special Covid Hospitals to prevent this.^(18,22)

7. The Forgotten elderly-

The elderly, who are the most vulnerable, particularly those in care homes, were like sitting ducks for the predator. In the initial pandemonium the whole focus was on hospitals. By the time the elderly care homes were engulfed by the virus, it was too late.⁽¹⁸⁾

8. Late restriction of visitors ?

Sometime in March, though the elderly care homes stopped visits from relatives, the virus was already in the community in the European countries.⁽¹⁸⁾

9. Staff- Victims? Vectors ?

The staff continued to work in shifts. Some even worked in more than one nursing home. They continued to work even when mildly ill. Those who tested positive had to report to work before two weeks as there was severe shortage of staff as many were sick. The remaining staff were not screened or tested and may have acted as vectors, spreading the dreaded virus to the vulnerable elderly.⁽¹⁵⁾ Hundreds of health care workers have been infected and many have died due to coronavirus infection so far.

10. PPE shortage - There was severe shortage of PPEs, there was no barrier between infected and normal residents nor between them and the workers. In fact, it is reported that some nursing homes advised that the staff should not wear masks, - to avoid scaring the elderly! There were others where their staff tried to protect themselves by garbage bags-such was the dearth of PPE.⁽¹⁵⁾

11. Abandoned to die - The worst scenario was when the hapless elderly were abandoned and left to die in their rooms, because the staff was either ill or afraid to go there. There are chilling reports of the Spanish army finding the bodies of abandoned inmates in their room. Some of the elderly were found among dead bodies of others because they could not move on their own.⁽²⁴⁾ Many lawsuits, enquiries are on, now filed by relatives of the dead. The Spanish defence minister, on Tuesday said troops who had been sent to sanitize rest homes had on Monday found the corpses of elderly people, and other residents left to their own fates.^(33,35)

While the usual protocol in Spanish nursing homes is to put the body of a deceased person in cold storage until a funeral service picks it up, bodies are now being left in beds until properly equipped staff can remove them⁽⁷⁾. This was defended by postulating that the funeral services were so overloaded that it was considered safer to leave the body in the bed to avoid the risk of contamination. In a normal month about 1,000 deaths are reported at Madrid regional nursing homes but now the rate is around 3,000, said the regional president^(7,24,25).

The association of doctors in the hard-hit Lombardy region in Italy estimated that 600 of the 6,000 elderly in residential facilities in Bergamo province alone had died — an astonishing 10% toll. A commission was authorized to investigate the “real situation” in all the region's nursing homes, which are run by a combination of public, private, and religious entities⁽²⁴⁾

The pain and anguish over these undignified deaths of their helpless old is gnawing the hearts of their relatives who could neither meet them since more than a month, be near them when they die or give them a

proper funeral. The body was wrapped and buried by authorities. It has been reported that there was a shortage of body bags too.^(24,26)

The survey found 87% of the responding facilities reported a lack of protective equipment for medical personnel and that 36% were suffering from staffing problems because many staff were infected. Another 23% reported having no information about how to contain the virus in the facility.⁽²⁴⁾ More gruesome discoveries followed, including the revelation of two dozen deaths in a single nursing home in Madrid.⁽²⁶⁾ Amid the thousands of tragedies created by the virus, the stories emerging from those homes have shaken the nation not only for their horror, but for undermining the view the Spanish had of themselves as a welfare state and a strong family support structure. Another source of pride for the Spanish has been the country's robust public health care system; last year, a study ranked Spain as the world's healthiest country. But that part of the national self-image has also taken a beating from a pandemic that has overwhelmed many hospitals and sickened thousands of health care workers.⁽²⁶⁾

Spain's coronavirus victims have been older, on average, than those in other countries. Over 65 percent of the Spanish dead were 80 or older, according to a data sample provided from the health ministry, compared to 50 percent in Italy as of last week, and 15 percent in China in February. In Spain, thousands of health care professionals have been infected, accounting for 15 percent of the country's total cases, the highest percentage reported by a country. And nursing home workers, like those in hospitals, are not only particularly exposed to the virus, they can also be vectors for its spread.⁽²⁶⁾

Prime Minister of Spain has called for the nationalization of all privately owned nursing homes, just as he had previously called for the nationalization of private hospitals, to help ensure better access as well as adequate staff and equipment.⁽⁷⁾

12. Triage:- Normally, hospitals admit those who need an ICU bed on a first come basis. Thus even critical patients who appear to have a slim chance may recover. But what do you do when there are few or no beds, only one ventilator-but dozens in the queue? In other disasters, you may direct the patient to some other hospital if you do not have a vacant ICU bed. In this Covid-19 pandemic, all hospitals in most Western countries were overflowing. About 10% of Covid patients are expected to need ICU management but bed occupancy is often prolonged. The shortage of ventilators, staff raises the question of how best to use available resources to benefit a maximum number of patients fruitfully, this is how the concept of “triage” comes in. The basic principle is, that ICUs should be reserved for patients, who are more likely to recover with a good quality of life. Hence it is vital to try to flatten the curve, to make the infection rate slower, so that the hospitals can cope⁽²⁷⁾

In Europe, specially Italy and Spain, the hospitals were so overwhelmed by the speed of the pandemic, that they had to triage as to who could be placed on a ventilator, indeed, who could even be admitted and delivered oxygen. As hospital beds overflowed in Italy, doctors had the painful job to decide who would get a bed, go to ICU, get oxygen and even more stringently, a ventilator. The odds fell in favor of the younger persons who had a more active life before them. Many of the very old in the nursing homes could not even get a hospital bed and just sunk and died in their own rooms without medicines or oxygen. Many elderly died in their homes too. Maybe some would have survived in normal circumstances if they could have been admitted to a hospital.⁽²⁸⁾

A first come, first served approach used in one hospital in Wuhan, China, when the coronavirus began to spread may not have been the best strategy and may have contributed to the initial high mortality rates in the city. Without robust survivability data, flexibility will be key to dealing with a coronavirus patient surge, rather than using rigid computerized formulae. Sometimes, invasive ventilation has to be postponed because of ICU beds saturation and this may deteriorate the patient's pulmonary status or prevent the patient's weaning and extend their time in ICU^(28,29)

13. Shifting stable COVID patients to Nursing homes - If news are to be believed, the last straw was, when stable, recovering, but still infectious COVID patients in Italy were shifted to the elderly nursing homes to ease hospital beds. This obnoxious decision was like throwing a lighted matchstick on a stack of hay.^(5,11)

According to WHO, Europe, 'Unimaginable human tragedy' happened in Europe's care homes. Estimates from some European countries

showed that "up to half of those who have died from COVID-19 were residents in long-term care facilities." As of April 13, of the 444 deaths in Ireland, 245 (55.2 percent) were linked to long-term care facilities. In France, as of April 15, 49.4 percent of deaths were linked to care facilities. About half of the global burden of COVID-19 cases and deaths are in Europe.^(30,31)

Stages of Covid-19 (According ToIcmr) ⁽³⁵⁾	
STAGE1	Imported And Sporadic Cases With Travel History (To Affected Countries)
STAGE2	Local Transmission Among Contacts of People With Travel History/Disease
STAGE3	Community Transmission, Affected Person Cannot Give History of Contact With Any Known Person With Travel History/Covid Disease. Chain of Transmission Cannot be Broken.
STAGE4	Epidemic-Larger Outbreak Of Local Transmission

Table No.3 :TIME LINE (up to 5/5/2020)

Sr. No	Country	First Case	First Death	Lockdown Date	Current Total Cases	Total Deaths
1	India	30 January 2020	12 March 2020	24 March 2020	46476	1571
2	United Kingdom	20 January 2020	5 March 2020	23 March 2020	190584	28734
3	Italy	31 January 2020	22 February 2020	12 March 2020	211938	29079
4	Spain	31 January 2020	3 March 2020	14 March 2020	248301	25428
5	France	24January 2020	14 February 2020	17 March 2020	169462	25201
6	USA	20 January 2020	6 February 2020	14 March 2020(partial, patchy)	1212955	69925
7	China	31 December 2020 (41 cases of Pneumonia of Unknown etiology)	11 January 2020	23 January 2020 (Wuhan goes in to lockdown)	82881	4633
8	South Korea	20 January 2020	20 February 2020	No Lockdown Imposed	10804	254
9	Iran	19 February 2020	19 February 2020	13 March 2020	98647	6277
10	Saudi Arabia	2 March 2020	24 March 2020	24 Hour Lockdown in all major cities 7 April 2020	28656	191
11	Germany	27 January 2020	9 March 2020	22 March 2020	166152	6993

WHY ARE ELDERLY MORE VULNERABLE?⁽³²⁾

1. Aging decreases immunity, makes them more vulnerable to most infectious disease.
2. Comorbidities (like hypertension, ischemic heart disease, Diabetes mellitus, chronic obstructive pulmonary disorders, chronic kidney disease, cancer further decrease immunity). COPD decreases lung reserve.
3. Frailty and Sarcopenia decrease resistance and recovery rate.
4. The elderly living in nursing homes, old age homes or living with family in a crowded house, are exposed to an increased risk of infection from younger family members and visitors.
5. The elderly may have mobility problems ,cognitive impairment, they may not have knowledge about care to be taken for preventing Covid infection .If they are isolated or alone ,they may be further depressed, anxious . They may not be able to procure

food and may have difficulties with activities of daily living. Malnutrition and depression decrease immunity .Outcome after intubation, weaning after ventilation is not as good as in the young. ICU stay is likely to be longer in the elderly.

Immunosenescence⁽³²⁾—the cumulative effect of aging on immune function—affects all cell types and many molecular pathways at all levels of the immune response. The resulting general phenotype is one of low-level inflammation at baseline, but impaired innate and adaptive immune responses to an acute stimulus. Responses to naïve antigens are often more impaired than memory responses.

Increased levels of pro-inflammatory cytokines such as interleukin-6 (IL-6) and tumor necrosis factor- α (TNF- α), acute-phase reactants such as C-reactive protein (CRP), and clotting factors are found in the plasma of older , compared to young adults, a phenomenon termed **"inflammaging"**, that may be associated with higher morbidity and mortality.

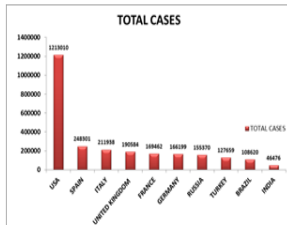
Age-associated decline in function has also been reported for killer cells, a class of innate immune lymphocytes sensitive to cytokine activation which plays an important role in killing virus-infected cells and in immune-surveillance against malignant cells. NK cell counts and measures of NK function have been associated with mortality from sepsis and other critical illness, and with increased infection and mortality rates in older nursing home residents.⁽³²⁾

LESSONS LEARNT TO BE APPLIED FOR THE FUTURE^(4,8,12,15)

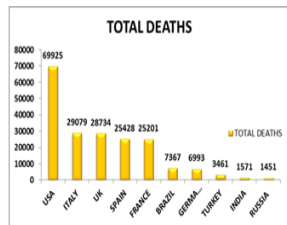
1. Protect your elderly-whether at home or in a care home. Counsel them about the disease and the care they and the caregiver should take. Do not let anyone come within 6 feet of them unless they absolutely need help for routine activity or are bed ridden.
2. See that they always wear a clean, comfortable mask and their hands are washed frequently. Do not allow maids / other working hands/visitors who come from outside or family members who go out of the house for work or other purposes to visit them. Caregivers need to take strict precautions.
3. In elder homes, visitors should be prohibited at the earliest during the pandemic. The staff and caregivers should ideally be staying in the campus and not going out at all. There should be adequate supply of sanitizers, PPE (personal protection equipment), masks, soap ,water for the inmates as well as the staff.
4. A symptomatic elder should be given a mask, tested and isolated. If tests are not freely available, presume that the person has Covid -19 and isolate him with all precautions. Try to get him hospitalized at the earliest.
5. The inmates in an institution (old age homes) should be encouraged to exercise, be given nutritious food and medicines on time. Efforts should be taken to decrease their stress. Communication with relatives, if any, should be encouraged by telephone, video calls. Music, television –if available in their room can help. They should avoid using common spaces.
6. Utmost care should be taken to see that caregivers and staff are meticulous about social distancing, using PPE, washing hands. Frequent cleaning and sanitizing of the rooms and premises should be carried out
7. Caregiver staff should be tested (if possible)and isolated if they show any symptoms.
8. The elderly should avoid using common spaces and mixing with each other. Activities like common prayers or yoga should be suspended, unless they are carried out with adequate social distancing of minimum 2 meters, with a mask, in a very small group, of not more than 2 or 3. The objects of use – door knobs, table tops etc should be sanitized frequently.
9. The staff should be trained as per standard guidelines and updated regularly. The elderly should be counselled, their fears allayed, they should be told about the disease and how to protect themselves.
10. Whatever happens, infectious patients from hospitals should not be allowed into nursing homes just because hospitals are full, as it happened in certain European countries. It will have disastrous results.
11. The shortage of medical doctors and nurses is a very critical matter. Decision-makers have to anticipate this problem by calling on extreme decisions such as (i) recalling retired medical doctors and nurses (however, though they are more inclined to develop serious symptoms in case of infection, also they may have difficulty in donning personal protective equipment for 6-8 hours in a row. (ii) relocating medical doctors and nurses all over the nation, (iii) hiring graduated doctors who have not received the

enabling license yet.

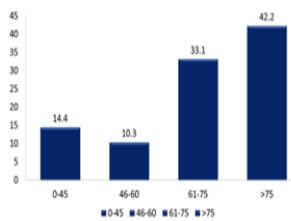
12. Supervision of care homes by the government with regular reporting and accountability by the nursing home management is absolutely essential.
13. With the previous background of the country of origin, including SARS and Swine flu, be alert and proactive, as soon as the initial reports come. With the degree of international travel, it is a writing on the wall that the virus will cross borders in no time. All efforts to fortify health services and hospitals, making enough tests available, trace contacts in the initial stage itself, quarantine them and try to prevent or slow down its spread in the community should be taken at the earliest(30)
14. Lockdown with the support of the Epidemic diseases Act of 1897, is the single measure, besides intensive contact tracing and isolation, that has helped India, in spite of its diverse population to keep the curve reasonably flat. Many countries did it partially, in the initial stages. Many enforced it after the virus had already spread into the community. Many are relaxing the lockdown even as the second wave is coming.
15. Economy at the cost of lives is useless. People have to bear the discomfort, inconvenience and material losses at the cost of being alive.



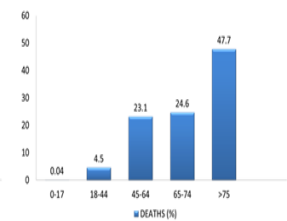
Graph No.1- Total Cases Of top 10 countries and India affected by COVID -19 (Source: World-O-Meter, Date: 5/5/20)



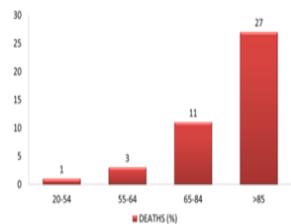
Graph No.2 -Total deaths of top 10 countries and India affected by COVID -19(Source: World-O-Meter, Date: 5/5/20)



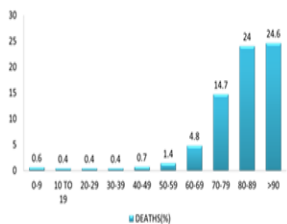
Graph No.3- Age Wise Mortality Rate of Covid-19 in India (Source: MOHFW, India, Date- 18/04/20)



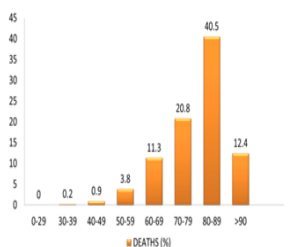
Graph No. 4- Age Wise Mortality Rate of Covid-19 in New York (Source: Statista, Date- 20/04/2020)



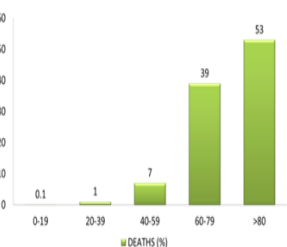
Graph No. 5 -Age Wise Mortality Rate of Covid-19 in USA (Source: STATISTA 2020, Date-5/4/2020)



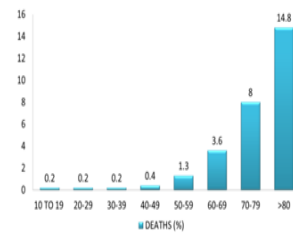
Graph No.6- Age Wise Mortality Rate of Covid-19 in Spain (Source: STATISTA 2020, Date -20/4/20)



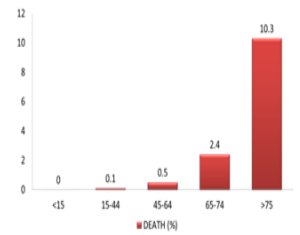
Graph No.7-Age Wise Mortality Rate Of Covid-19 In Italy(Source :Statista , Date-20/04/2020)



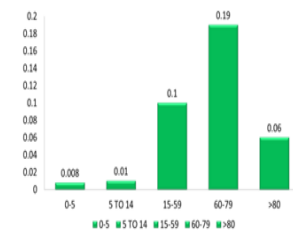
Graph No.8.-Age wise Mortality Rate of Covid-19 in UK (Source: Statista, Date-5/04/2020)



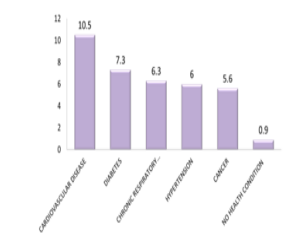
Graph No.9- Age Wise Mortality Rate of Covid-19 in China (11/2/2020) (Source: STATISTA, Date- 11/02/2020)



Graph No.10.-Age Wise Mortality Rate of Covid-19 in France (15/3/2020) (Source: STATISTA 2020, Date-15/03/2020)



Graph No.11-Age Wise Mortality Rate of Covid-19 in Germany (Source: STATISTA 2020, Date-(20/4/2020)



Graph No. 12- CFR According To Comorbidities in India (Pulse/Covid-19-District-Vulnerability-Index-Mitul-Jhaveri, 23rd April,2020)

*Case Fatality Rate (CFR)= Total number of deaths due to a disease/Total number cases due to a disease

REFERENCES

1. Half of coronavirus deaths happen in care homes, data from EU suggests; The Guardian ; Mon 13 Apr 2020; <https://www.theguardian.com/world/2020/apr/13/half-of-coronavirus-deaths-happen-in-care-homes-data-from-eu-suggests>
2. Residential facilities, assisted living and nursing homes ; National institute on aging ;US Department of health and human services. <https://www.nia.nih.gov>
3. How Many Seniors Really End Up In Nursing Homes? Posted on January 6, 2016- Nursing home diaries <https://nursinghomediaries.com/howmany/>
4. Giulia Garavaglia & Emanuele Lettieri & Tommaso Agasisti & Silvano Lopez; Efficiency and quality of care in nursing homes: an Italian case study; Health Care Manag Sci (2011) 14:22–35 DOI 10.1007/s10729-010-9139-https:// www.researchgate.net/publication/47337659_Efficiency_and_quality_of_care_in_nursing_homes_An_Italian_case_study
5. Giovanni de Girolamo, Antonella Tempestini Et al; Residential facilities for older people in Italy: a five-region survey; *Aging Clinical and Experimental Research* volume 19, pages132–138(2007), <https://link.springer.com/article/10.1007/BF03324679>
6. The 'massacre' of Italy's elderly nursing home residents; Maria Tavernini, Alessandro Di Rienzo; 20 Apr 2020; <https://www.trtworld.com/magazine/the-massacre-of-italy-s-elderly-nursing-home-residents-35575/amp>
7. Spanish Military Finds Dead Bodies And Seniors 'Completely Abandoned' In Care Homes; March 24, 2020; <https://www.npr.org/sections/coronavirus-live-updates/2020/03/24/820711855/spanish-military-finds-dead-bodies-and-seniors-completely-abandoned-in-care-home>
8. Xavier Bosch et al Spain: old people frequently live with their families BMJ. 2002 Jun 29;324(7353): 1543. doi: 10.1136/bmj.324.7353.1543
9. Paolo Mazzola, MD, Stefania Maria Lorenza Rimoldi,MD et al; Aging in Italy: The Need for New Welfare Strategies in an Old Country; *The Gerontologist*, 2016, Vol. 56. <https://academic.oup.com/gerontologist/article/56/3/383/2605648>
10. Coronavirus: How big is the problem in care homes? By Alison Holt & Ben Butcher BBC News 30/4/20 <https://www.bbc.com/news/health-52284281>
11. Death stalks French nursing home, where corpses lie in rooms ;Lucien Libert; APRIL 10, 2020 <https://www.reuters.com/article/us-health-coronavirus-france-nursinghome-idUSKCN21S1IE>
12. German retirement homes isolate the elderly from COVID-19 threat ; Grzegorz Szymanowski ;09.04.2020 <https://www.dw.com/en/german-retirement-homes-isolate-the-elderly-from-covid-19-threat/a-53082145>
13. Rohin Kumar Vulnerable, Lonely Residents In Delhi's Old Age Homes Struggle With Self-Isolation 101Reporters.com. [indiaspend.org](https://www.indiaspend.org)
14. REPORT ON OLD AGE FACILITIES IN INDIA, Tata Trust <https://www.tatatrusts.org/upload/pdf/report-on-old-age-facilities-in-india.pdf>
15. Lacking beds, masks and doctors, Europe's health services struggle to cope with the coronavirus;CNBC fri, apr 3 2020 ; (<https://www.cnbc.com/2020/04/03/coronavirus-italy-spain-uk-health-services-struggle-to-cope.html>)
16. More people may now be dying of coronavirus in care homes than hospitals: Expert's shock claim as Government braces to reveal the true daily death toll from this afternoon ; Mail Online 29 April 2020 ; <https://www.dailymail.co.uk/news/article-8268215/COVID-19-deaths-care-homes-EXCEEDED-hospital-fatalities-statistician-claims.html>
17. As coronavirus slams Italy, paralysis and anxiety spread ; Emilio Parodi, Angelo Amante ; <https://in.reuters.com/article/uk-china-health-italy-paralysis-insight-idINKN20M2XN>
18. Covid-19: Many failures combined to unleash death on Italy's Lombardy; Livemint.com, 26 Apr 2020 ; <https://www.livemint.com/news/world/covid-19-many-failures-combined-to-unleash-death-on-italy-s-lombardy/amp-11587918526836.html>
19. Game Zero: Spread of virus in Italy's Bergamo linked to Champions League match; India Today March 25, 2020; <https://www.indiatoday.in/sports/football/story/champions-league-match-atlanta-vs-valencia-san-siro-bergamio-coronavirus-1659741-2020-03-25>
20. Thousands March in Spain on Women's Day Despite Coronavirus Fears ;U.S News

- March 8, 2020, <https://www.usnews.com/news/world/articles/2020-03-08/thousands-march-in-spain-on-womens-day-despite-coronavirus-fears>
21. Trump is suspending all flights from Europe to the US to fight coronavirus ; Natasha Frost March 12, 2020; <https://qz.com/1816939/trump-suspends-europe-to-us-flights-to-fight-coronavirus/>
 22. 'Lessons countries can learn from COVID-19 in Italy decoded'; The Economic Times Apr 12, 2020 ; <https://economictimes.indiatimes.com/news/international/world-news/lessons-countries-can-learn-from-covid-19-in-italy-decoded/article-show/75105308.cms?from=mdr>
 23. Uncounted among coronavirus victims, deaths sweep through Italy's nursing homes WED MAR 18, 2020 / 3:55 PM EDT <https://mobile.reuters.com/article/amp/idUSKBN2152V0>
 24. Europe's nursing homes in spotlight for uncounted virus dead; By NICOLE WINFIELD; April 8, 2020 <https://apnews.com/b91874109a2048f9850983443b5ec673>
 25. Coronavirus: Spanish army finds care home residents 'dead and abandoned'; 24 March 2020; <https://www.bbc.com/news/amp/world-europe-52014023>
 26. A Deluged System Leaves Some Elderly to Die, Rocking Spain's Self-Image; By Raphael Minder and Elian Peltier; Published March 25, 2020 <https://www.nytimes.com/2020/03/25/world/europe/Spain-coronavirus-nursing-homes.html>
 27. How to Triage Patients Who Need Intensive Care; By Jim Daley on March 20, 2020 <https://www.scientificamerican.com/article/how-to-triage-patients-who-need-intensive-care/>
 28. Coronavirus :Italy doctors forced to prioritize ICU care for patients with best chance of survival; Euro news 13/3/20 ; <https://www.euronews.com/2020/03/12/coronavirus-italy-doctors-forced-to-prioritise-icu-care-for-patients-with-best-chance-of-s>
 29. Davide Manca; Dynamics of ICU patients and deaths in Italy and Lombardy due to Covid-19 Analysis updated to 30-March, Day #38 evening; the European Society of Anesthesiology; 1st April 2020; <https://www.esahq.org/esa-news/dynamics-of-icu-patients-and-deaths-in-italy-and-lombardy-due-to-covid-19-analysis-updated-to-30-march-day-38-evening/>
 30. WHO Europe: Up to Half of Deaths in Care Homes; By Associated Press April 23, 2020 08:07 AM; <https://www.voanews.com/covid-19-pandemic/who-europe-half-deaths-care-homes?amp>
 31. 'Unimaginable human tragedy' in Europe's care homes: WHO; News Desk Agence France-Presse; Copenhagen, Denmark / Fri, April 24, 2020 / 10:05 am <https://www.thejakartapost.com/news/2020/04/24/unimaginable-human-tragedy-in-europes-care-homes-who.html>
 32. Hazzard's textbook of Geriatric medicine and Gerontology, 7th edition
 33. Spanish minister says older people found 'dead and abandoned'; The Guardian. Mon 23 Mar 2020. <https://www.theguardian.com/world/2020/mar/23/spain-distributes-650000-testing-kits-as-coronavirus-deaths-rise-steeply>
 34. Corpses of the elderly found abandoned in Spanish care homes; by Graham Keeley ; 24 Mar 2020 <https://www.aljazeera.com/amp/news/2020/03/corpses-elderly-abandoned-spanish-care-homes-200324141255435.html>
 35. The four stages of Covid-19 Transmission and why India maintains it is not yet in Stage 3 ; <https://theprint.in/health/the-four-stages-of-Covid-19-transmission-why-India-maintains-it-is-not-yet-in-stage-3/395439/>