

Lessons from History to Combat COVID-19: The Influenza Pandemic of 1918

T. V. Sekher



(स्थापना/ Established in 1956)
बेहतर भविष्य के लिए क्षमता निर्माण
Capacity Building for a Better Future

International Institute for Population Sciences, Mumbai

(www.iipsindia.ac.in)

May 10, 2020

© 2020 IIPS

IIPS Analytical Series on COVID 19:

**Paper 10: Lessons from History to Combat COVID-19: The Influenza
Pandemic of 1918**

(This work has not been peer-reviewed. If you find any errors or have clarifications, please email the authors.)

For research, and updates on Covid-19, visit:

<https://www.iipsindia.ac.in/content/covid-19-information>

Lessons from History to Combat COVID-19 : The Influenza Pandemic of 1918

T. V. Sekher*

Abstract:

When India is battling hard to combat COVID-19 outbreak, it is important to look back and see how a major pandemic that happened nearly hundred years back - the Influenza pandemic of 1918 - was tackled by then colonial administration. The Influenza estimated to have ("Spanish Flu") accounted for about 12 million deaths in India, causing widespread havoc, disrupting lives and economy. However, the impact of this pandemic, including mortality, varied considerably across the provinces of British India. This paper examines the challenges encountered by then administration, drawing specifically from the experiences of the state of Mysore, considered as one of the well administered 'progressive' princely states in British India. The paper uses census data and archival records, available both in India and England, for a historical analysis of Influenza deaths and the administrative measures. The entire governmental machinery, geared through coordinated efforts, to combat the 'mysterious fever' was remarkable. Many officers were able to evoke trust and civic responsiveness from the public, while keeping in view the cultural sensibilities and beliefs of the masses. The stern measures enforced by the Mysore administration to regulate the price of food grains and the free supply of essential goods and medicines helped to overcome a famine-like situation. The century-old experience in combating the influenza pandemic provide useful lessons - involving a combination of strong administrative measures, strict monitoring of public health and sanitation services, timely gathering of data and information, well-organized relief operations, administration's sensitivity to public grievances, and engaging civilian and community organizations .

Key words: Pandemic, Influenza, Mortality, Health Administration, India, Mysore

* **Dr. T. V. Sekher** is Professor at the International Institute for Population Sciences (IIPS), Mumbai and Co-author of the book - ***Health and Medicine in the Indian Princely States: 1850-1950***, Routledge, London and New York, 2018 (e-mail: tvsekher@gmail.com).

Lessons from History to Combat COVID-19 : The Influenza Pandemic of 1918*

When the world and India are battling hard to combat COVID-19 outbreak, it is important to look back and see how a major pandemic that happened nearly hundred years back - the Influenza pandemic of 1918 (also known as 'Spanish flu')- was tackled. This pandemic killed around 12 million people in India alone, more than in any other country. This paper examines the challenges encountered by the then administration in colonial India, drawing specifically from the experience of the state of Mysore, considered as one of the better administered 'progressive' princely states in British India. The paper uses census data and archival records, available both in India and England, in making a historical analysis of the administrative challenges.

Influenza Mortality in India

The influenza pandemic of 1918 claimed up to 70 million lives around the world until it unexpectedly disappeared in 1919. No other outbreak has appeared with such intensity and devastation in large parts of the world within such a short time as did influenza in 1918. In India, influenza pandemic cost at least twelve million lives, though the estimates vary considerably¹. The sanitary commissioner of the Government of India, F. Norman White, noted in his preliminary report on the pandemic:

*From the incomplete information, at present available, it would appear that no country suffered as severely as did India, during the last quarter of 1918. Altogether influenza was responsible for a death-toll of approximately five millions, in British India alone.....Without fear of exaggeration, it can be stated then that in a few months influenza was responsible for six million deaths (including Native States) in India.*²

* Author is grateful to Wellcome Trust, UK for funding a collaborative research project on "Public Health in Princely India from 1850 to 1950". The historical / archival data used in this paper is mostly accessed during that study. The facilities and cooperation extended by the archives of British Library and Wellcome Library at London, Karnataka State Archives, Bangalore, Divisional Archives, Mysore, National Archives, New Delhi, and other libraries are acknowledged. This is a revised and updated version of an earlier paper, Sekher, T.V. "Public Health Administration in Princely Mysore: Tackling the Influenza Pandemic of 1918", In W. Ernst and B. Pati (eds.) *India's Princely States: People, Princes and Colonialism*, Routledge, London and New York, 2007, 194–211.

In the end, few months of influenza resulted in more deaths than nearly twenty years of plague in many Indian provinces. The epidemic struck India at a time when the country was least prepared to cope with the calamity. The total failure of the monsoon, scarcity of food supply, inadequate medical facilities and shortages of health personnel, created a miserable situation in many parts of India. White pointed out:

Influenza within the space of four or five months was responsible for the death of 2 per cent of the total population of British India, the percentage of persons falling victims varying between 5.7 in the Central Provinces and 0.4 in Bengal. As regards the incidence of the disease in Native States but little information is, at present, available, with the single exception of Mysore. The total number of deaths ascribed to influenza in Mysore, in 1918, was 1,27,651, which is equivalent to a death-rate of 22.37 per thousand.³

Table 1: Influenza Deaths in British India-1918

Province	Population (Census 1911)	Total Estimated Influenza Deaths	Influenza Death- rate per thousand Population
Central Provinces and Berar	13,916,308	790,820	56.8
Delhi	416,656	23,175	55.6
Bombay	19,587,383	900,000	45.9
Punjab	19,337,146	816,317	42.2
North-West Frontier	2,041,077	82,000	40.0
United Provinces	46,820,506	1,072,671	22.9
Coorg	174,976	3,382	19.0
Madras	40,005,735	509,667	12.7
Assam	6,051,507	69,113	11.4
Bihar and Orissa	34,489,846	359,482	10.3
Burma	9,855,853	60,000	6.0
Bengal	45,329,247	213,098	4.7
British India	238,026,240	4,899,725	20.6

Source: *A Preliminary Report on the Influenza Pandemic in India by the Sanitary Commissioner with the Government of India, Simla: Government Monotype Press, 1919*

Information / data on the prevalence of Influenza among the general population was not available for most provinces and only the mortality data were compiled. However, the statistics on incidence and mortality of jail inmates of some provinces were available (see Table 2). Those provinces reported high influenza mortality among the general population also showed high mortality among jail inmates, though the jail population cannot be a representative of overall population for various reasons, including the huge differences in sex and age structure.

Table 2: Influenza Mortality Rates, Incidence Rates and Case Mortality Rates: Selected Provinces and Jail Populations, British India, 1918.

Seri al No.	Province	Province Influenza Mortality/ 1000	Jail Influenza Mortality/ 1000	Jail Influenza Incidence Rate/1000	Jail Influenza Case Mortality Rate/1000
1	Central Provinces	67.6	34.8	457.5	76.1
2	Bombay Presidency	54.3	36.0	348.0	103.4
3	United Provinces	47.2	20.9	296.7	70.4
4	Punjab	46.0	38.9	334.7	116.2
5	North West Frontier	44.4	28.6	311.1	91.8
6	Assam	26.1	5.9	351.1	16.7
7	Lower Burma	16.2	6.4	278.6	22.9
8	Madras Presidency	15.8	10.9	318.7	34.3

Sources: Proceedings of the Department of Education, Sanitary- Part A, 1918 and Annual Report of the Sanitary Commissioner with Government of India, 1918; as cited by Mills, 1986.

Influenza Incidences and Deaths in Mysore State

The fact that Mysore was the only princely state that could provide timely information on influenza mortality is an indication of its administrative efficiency, even during crisis situations. This may have been due to fifty years of direct British rule, from 1831 to 1881, when the administrative machinery in the state was modernized, thereby contributing to Mysore's subsequent reputation as a 'progressive' princely state'.⁴

Table 3: Mortality from Influenza in Mysore State - 1918

Serial No	Place	Population (Census of 1911)	Attacks	Deaths	Percentage of Deaths to Total Population
1	Bangalore City	88,651	40,000	2,074	2.3
2	Mysore City	71,306	36,550	1,296	1.8
3	Bangalore District	759,522	152,323	16,600	2.2
4	Kolar	789,153	77,800	19,631	2.5
5	Tumkur	735,346	156,316	35,260	4.7
6	Mysore	1,270,765	115,997	23,841	1.8
7	Hassan	580,200	149,340	20,766	3.6
8	Shimoga	516,716	77,716	22,741	4.4
9	Kadur	338,457	24,355	5,867	1.7
10	Chitaldurg	564,243	53,094	18,815	3.3
	Total	5,705,359	883,491	166,391	2.9

Note: The total figures (population and deaths) are reproduced here as provided in the printed government order. However, they do not tally.

Source: Report on the Epidemic of Influenza, Proceedings of the Government, G.O. No.G, 19409-21-MED. 56-18-96, dated 4 March 1919- General and Revenue Departments, Government of Mysore, 3 (Karnataka State Archives).

Influenza made its first appearance in a mild form in Bangalore city in July 1918, but disappeared soon without causing any significant loss of life. It reappeared in the middle of September and spread with lightning speed throughout the state. According to government records, the total number of incidents were 8,83,491 and the death toll amounted to 1,66,391.⁵ The 1921 census for Mysore revealed that the number of deaths per 1,000 in 1918 was about 30, whereas in the previous year it had been ten and for the year 1919 it was only eight— a good indication of the severity of the epidemic in this part of south India.⁶

Table 4: Death Rates in Mysore State: 1913 - 1925.

Year	Death-rate per mille of population	Year	Death-rate per mille of population
1913	18.07	1919	16.44
1914	18.66	1920	14.99
1915	15.53	1921	14.22
1916	16.63	1922	14.52
1917	19.54	1923	16.09
1918	60.28 (Year of Influenza)	1924	21.18
		1925	17.44

Source: C. Hayavadana Rao, Mysore Gazetteers, compiled for Government, Bangalore, 1927-1930

Apart from increased mortality, influenza also affected the spirit of celebrations at the most important annual events of Mysore—the *dasara* festival celebrations and exhibition. This is evident from the speech of the *maharaja* of Mysore, Sri Krishnaraja Wodeyer. On 22 October 1918, at the prize distribution function of the *dasara* industrial and agricultural exhibition, he noted:

Ladies and Gentlemen, once our Annual Dasara Exhibition has turned its course and it is my pleasant duty to distribute the principal prizes to successful Exhibitors. I wish that we could have met under happier circumstances and that the complete success which this Exhibition deserves had not been somewhat marred by the adverse season and the sickness which is prevailing everywhere and which has naturally kept away many visitors, besides depriving the Committee of the services of their Secretary and a number of their working staff. ⁷

Administrative Measures

In fact, the chief secretary to government, C.S. Balasundaram Iyer, issued an order directing the temporary structure for the exhibition to be placed at the disposal of the president of the Mysore city municipal council, for opening a provisional dispensary for the treatment of influenza patients.⁸ The chief secretary issued strict instructions to the deputy commissioners of the districts and the presidents of the two municipalities, Bangalore and Mysore, regarding the monitoring and co-ordination of relief work.⁹ The district medical officer, the sanitary officer, the *amildars* (revenue officers), and the deputy *amildars* were to tour the *taluks* (divisions) and ensure that the government

instructions were implemented efficiently. They also were to liaise with a variety of medically trained people, such as *vaidyas* (ayurvedic physicians), sanitary inspectors and *hakims* (unani doctors), to facilitate the distribution of medicines.¹⁰

Action Plan: Daily Messages and Weekly Reports

Daily messages and weekly reports were sought to take stock of the situation and chalk out action plans. Even in places where the epidemic was under control, the filing of reports was to be discontinued only after consultation with government. The official memorandum from the chief secretary instructed as follows-

Daily and Weekly Reports or Returns may be submitted as explained hereunder: -

- (a) The Presidents of the Municipalities of Bangalore and Mysore should intimate to the Government, early every morning, the figures of total mortality and mortality from influenza on the previous day. This should be followed by a brief report, (which unless necessary need not exceed a dozen sentences) on the state of the epidemic each day, the manner in which the organization for dealing with epidemic is working and any further facilities or help required from Government. Copies of the daily messages and the report should be simultaneously forwarded to the Senior Surgeon and Sanitary Commissioner.
- (b) The Deputy Commissioner in each district ⁹ should similarly intimate by wire in a few sentences, the figures as far as available of total mortality in each taluk and the district, areas newly affected and any special facilities or help needed from Government. Copies of these should be forwarded simultaneously to the Senior Surgeon and Sanitary Commissioner.
- (c) The Presidents of the two Municipalities and the Deputy Commissioners of Districts should submit a brief detailed report (which need not exceed one page) once a week, every Saturday, regarding the state of epidemic, extent of co-operation received from officials and the non-official public, supply of medicines and medical men, relief to the poor and the adequacy or otherwise of the existing arrangements, copies of the report being furnished simultaneously to the Senior Surgeon and the Sanitary Commissioner. ¹⁰

Tasks of Senior Surgeon and Sanitary Commissioner

The memorandum also specified the responsibilities of the Senior Surgeon and the Sanitary Commissioner respectively in handling the epidemic.

1. The Senior Surgeon will be responsible for all the medical arrangements necessary in connection with the disease such as maintaining an adequate staff of medical men in each affected locality, the supply of medicines, entertainment of additional medical staff, the opening of new dispensaries, etc. He should be regularly in correspondence with the Presidents of the two Municipalities and the Deputy Commissioners and utilise in consultation with them, every available agency for adopting curative and other measures for combating the disease. A brief weekly report, not exceeding one page, of the work done by the Medical Department, should be submitted by him to Government every Monday.

2. The Sanitary Commissioner will be expected to maintain correct up-to-date information regarding the state of the disease in various parts of the State, review the same from day to day, bring to the notice of Government any deficiencies in existing arrangements and special facilities required and arrange for bacteriological and other investigations. He should submit a report to Government every Monday.¹¹

M. Srinivasa Rao, sanitary commissioner of Mysore, in the department of public health, issued a special statement regarding the cure and prevention of influenza.¹² The printed version of this, both in English and in the local Kannada, was distributed throughout the state to better inform the public. In his note, Rao highlighted in particular what measures and precautions should be taken by people afflicted with influenza and those still in a healthy state.

In many places, entire families were affected and there was no one to attend to the wants of the patients, prepare food or collect medicines. Many officials also fell sick and died. At one point, even the chief secretary himself, C. S. Balasundaram Iyer, and most of his office staff were suffering from influenza.¹³ In most areas, including *taluk* headquarters and large towns, people accepted western medicines readily. However, in some places they were most unwilling to take them.

Interestingly, in one instance, the *amildar* of Holalkere *taluk* reported to be ill and repeatedly applied for leave. This resulted in local people becoming suspicious and sending a telegram to the *diwan* to request him to enquire into the matter. The deputy commissioner was asked to pay a surprise visit, along with the district medical officer, to examine the *amildar*, who had confined himself indoors. They found no trace of fever on him and heard that the *amildar* had never got himself treated by the local sub assistant surgeon! It emerged that he was fine and wanted to avoid exposure to the epidemic.¹⁴

In many districts, the actual mortality was much higher than originally reported. This is evidenced, for example, by the final report of the deputy commissioner of Chitaldrug district:

*As the outbreak of the epidemic was sudden and took the people as it were by surprise, and as almost all the patels [village headmen] and shanbogs [village accountants], who are the proper agency for the collection and report of correct statistics in such matters, together with a number of Sheikdars [sub-taluk revenue officers], were also taken ill and several of them died, there was practically no means by which the necessary information could be gathered, and the statistics must therefore be necessarily said to be defective. In fact several villages that got infected could not, owing to these causes, come into the accounts at all.*¹⁵

The administrative report for Mysore for the year 1918-19 confirmed the under-reporting of influenza mortality further and provided an adjusted figure, referring to 'the unparalleled death-roll of 195,437 representing a ratio of 34.3 per 1,000 population'.¹⁶ However, mortality across districts varied considerably, with the highest figure of 44 per 1,000 in Shimoga district to 17 per 1,000 in Kadur district and the cities of Mysore and Bangalore reporting about 18 and 23 respectively.¹⁷

In many places, individuals came forward to help and provide relief for the needy. Incidents of humanitarian gestures were frequently cited in the reports of the presidents of the two municipalities and deputy commissioners. Special committees comprising of leading citizens and local officers were constituted and provision was made for water supply and fuel in the cremation grounds. In the districts of Kolar, Tumkur, Kadur and Shimoga, sheds were erected near the dispensaries to house the affected people.¹⁸ By end of October, the disease had spread throughout the state and it became impossible for regular medical staff to cope with the increasing demand. Consequently, the services

of local *pandits* and *hakims* were utilized, and the senior surgeon instructed the students at the medical school to work in conjunction with the medical subordinates in the cities of Bangalore and Mysore.¹⁹

Tackling Influenza in Bangalore City by Invoking Civic Response

At the meeting of the city municipal council on 5 October 1918, it was noted that the so-called 'mysterious fever' of Bombay had been imported into Bangalore and had widely spread in the city.²⁰ The chief officer, R. Subba Rao, informed the council that this disease was pandemic influenza in some of its graver manifestations.²¹ It was reported that the attendance of the patients at the municipal dispensaries had doubled and that there were long lines of waiting patients at private dispensaries and chemist shops. The wards for the in-patients in hospitals were overflowing with patients and many people were sent away due to lack of accommodation.²²

The council passed a resolution urging the government to provide suitable treatment and accommodation as quickly as possible for about one hundred in-patients, make available more staff and increase the stock of medicines in the dispensaries. It also instructed the health officer to publish and circulate leaflets explaining the nature of the illness and measures to be adopted. It decided to secure voluntary assistance from retired medical men and others. Two municipal councillors, Fr P.N. Briand and Rev. D.A. Rees, promised the co-operation of people in their parish and mission respectively. Considering the gravity of the situation, K.P. Puttanna Chetty, president of the municipal council, immediately instituted enquiries and personally visited all parts of the city and extensions. In his letter to the chief secretary of the government of Mysore, on 7 October 1918, he pleaded for immediate assistance for the senior surgeon and sanitary commissioner, so that they were able to control the epidemic effectively.²³ A census conducted in Bangalore on 6 and 7 October indicated that there were about ten thousand persons suffering from influenza on those days.²⁴ In fact, the situation was so critical that the president of the municipality saw it necessary to refrain from attending the *dasara darbar* at Mysore.

Medical and Relief Operations

Subba Rao prepared a detailed scheme whereby an organized attempt was to be made to supply food and medicine free to the sick at their own homes.²⁵ The city was divided into several blocks and small parties were appointed for each block. A house-to-house survey, which commenced on 11 October, was carried out to locate sick people. The free distribution of medicines and *conji* (rice porridge) commenced on 12 October. The instructions were very particular regarding the duties of relief parties, preparation and quantity of food, and distribution of medicine.

*Conji will be prepared in the Government Anna Chattram [charitable home], by a special staff under the supervision of Hari Rao and Vasudeva Rao alternatively. Sooji will be fried and boiled in water; an equal quantity of milk will be added; Sugar to taste and appropriate quantities of powdered cardamoms and saffron will be put in. Conji will be ready for issue to the relief parties by 9 AM. The relief parties will start distributing Conji in their blocks at not later than 9.30 AM. The quantity to be issued will, for the present, be fixed at 1 pint or 20 ounces per adult and half the quantity for children. An endeavour will be made for the issue of milk to very young children. Note books will be issued to the relief parties wherein the name of each patient, age and quantity of nourishment and medicine issued day by day should be entered.*²⁶

The government *Anna Chattram*, near the municipal garden, was fixed as the central issuing station for the relief parties to obtain their supplies and to proceed to their divisions. The internal administration of the drug Thymol was undertaken both as a routine treatment and as a prophylactic. The Public Health Institute at Bangalore provided the necessary medical advice on the types of treatment. A special ward was opened in the Epidemic Disease Hospital in Bangalore to prevent overcrowding and dispensaries were ordered to be kept open from 7 am to 12 noon and again from 4 pm to 8 pm to facilitate patients' access to treatment.²⁷ As the disease spread, accommodation was found to be insufficient. Considering the magnitude of the problem, the government decided to open a new temporary influenza hospital in Bangalore. The hospital under canvas came into instant existence on 30 October at the municipal garden. Altogether, 1,062 outpatients and 198 in-patients were treated here; 28 per cent of them died.²⁸

St. Martha's Hospital, the Convent of Mary at Chamarajpet and several *unani* (Islamic medicine) dispensaries and *vaidyasalas* (ayurvedic medical centers) attended to the treatment of the sick in Bangalore city. The relief work in Bangalore had started with a few people, mainly municipal councillors, missionaries and members of the

Gokhale League, but it gradually saw increased participation by a number of volunteers. Fifty-five relief parties numbering 218 volunteers were working in Bangalore city during the influenza season, apart from municipal officials. The organizations actively engaged in the relief operations were the Amateur Dramatic Association, the Wesleyan and London Missions at Bangalore, the Young Men's Christian Association, the National High School, the Central College, the Government Collegiate High School and the Civic and Social Progress Association.²⁹ A large body of students- including those from the Vokkaligara Sangha, the *Veerasaiva* Students' Hostel and the City Boy Scout organization, participated in the relief work. The students from Bangalore Medical School played a key role in assisting the compounding work, at the instruction of senior surgeon, even risking their own lives.

Supply of medicines was a major challenge. A team of volunteers spared no efforts, day and night, in arranging medicines for distribution. A total quantity of about 6.25 lakhs of doses of Thymol, 3,898 packets of Epsom salt, 8,334 packets of cough powders for internal administration, and 1,500 ounces of Eucalyptus oil for external application were distributed through volunteer agencies. A total quantity of nearly 40,000 seers [*sihrs*] of *conji* was issued from the government *Anna Chattram* and distributed by the volunteers throughout the divisions, using bullock carts, *jutkas* [horse-driven carts] and bicycles.³⁰ At the height of the epidemic, a minimum of 6,000 persons were daily undergoing the Thymol treatment and at least 3,000 persons daily received *conji* doles.³¹

Relief parties were organized for the distribution of medicines, milk and *conji* in the affected areas. They worked on the information furnished by the municipal councillors, sanitary inspectors, medical practitioners and residents of the locality. The relief parties patrolled the block in its charge and distributed medicines and food free to all deserving cases. Notebooks were issued to the relief parties to register the name and age of every patient, and quantity of nourishment and medicines issued each day. The chief secretary issued a statement on 13 October 1918, in which he specified the responsibilities of every officer with regard to the measures to be adopted in the cities of Bangalore and Mysore.

Table 5: Responsibilities of Officers in Combating Influenza in the Cities of Bangalore and Mysore.

	Measures to be taken	Officers responsible for taking measures	Time given
1	Opening up of temporary dispensaries	Senior Surgeon and Presidents of City Municipal Councils of Bangalore and Mysore	1 Week.
2	Appointment of the medical and other staff.	Senior Surgeon and Presidents of city Municipal Councils, of Bangalore and Mysore	1 Week.
3	Supply of medicines	Senior Surgeon	1 Week.
4	Provision for tents or sheds	Presidents of City Municipal Councils, Bangalore and Mysore	1Week
5	Providing conveyance etc., to voluntary workers	-Do-	-Do-
6	Reporting action taken	Senior Surgeon and Presidents of City Municipal Councils of Bangalore and Mysore	10 days and thereafter every week ending -- Saturday until— the subsidence of the epidemic.
7	Educating the public with regard to the preventive and remedial measures by issuing pamphlets, etc.,	Sanitary Commissioner	

Source: Anti-Influenza Operations, Med. File 56/1918.sl.no: 1301-132. Circular from Chief Secretary to Government, Dated 15 October 1918 (Karnataka State Archives)

In addition to the above, Bangalore municipality issued further guidelines for the supply of essential items:

Table 6 : Guidelines for the Supply of Food and Medicines- Bangalore city.

- | | |
|------|---|
| (1) | Sub-dividing the several divisions of the city into blocks, the size of each block depending on the number of volunteers forthcoming to take up the work. |
| (2) | Organization of relief parties to take charge of one or more blocks. |
| (3) | The minimum number of persons necessary to form a relief party. |
| (4) | How relief parties were to obtain information of illness in their blocks. |
| (5) | The duties of relief parties. |
| (6) | Nourishments, how and where to be prepared and issued to relief parties. |
| (7) | How relief parties were to obtain supplies from the central issuing station. |
| (8) | Quantity of nourishment to be issued per head. |
| (9) | The issue of medicine. |
| (10) | The compilation of statistics. |

Source: Letter No .107, dated 13 October 1918, from the President, Municipal Council, Bangalore City, Med-File 56-18, sl.no:130-32 (Karnataka State Archives)

Compared to Mysore, the Bangalore municipality seems to have organized the relief operations in a more systematic manner and the involvement of various organizations and volunteers worked more smoothly successful. This may have been due to the leadership provided by K.P Puttanna Chetty, president of the municipality, who had handled the earlier plague epidemic efficiently by liaising effectively with various organizations in the city.

Appreciating Public Participation

After inspecting the work of the relief parties on 25 October, the *Diwan* Sir M. Visvesvaraya expressed his satisfaction with the efforts that had been undertaken, stating that he had the highest hopes for the future generation. He was impressed by the harmonious working together of the old with the young, the official with the non-official, and the rich with the poor. He referred to the spirit of civic responsiveness in the face of great suffering and considerable financial loss.³² On 25 October 1918, *Diwan* paid generous tribute to the government servants and volunteers involved in relief operations:

"Our meed of praise is due to the Presidents of the two Municipalities and Deputy Commissioners to the many officers and subordinates of the Revenue and Medical Departments, and particularly to the numerous public men who

*came forward to assist Government and the Municipal authorities and gave freely to their money, time, and energy. Nor should I omit to mention the enthusiasm of the younger generation -- students and other volunteers -- who showed such a fine spirit of unselfish service in carrying food and medicines to every door of the poor and the needy, without any regard to the risks they were running".*³³

Influenza in Assembly Sessions

The *dasara* session of the Mysore Representative Assembly held on 17 October 1918, confined its deliberations mainly to two crucial issues - necessary measures to combat the epidemic and the deteriorating food situation. Out of 263 members, only 88 members attended the meeting. Others remained in their areas to organize relief measures.³⁴ In his address to the *dasara* session of the assembly, the *Diwan*, Sir M. Visvesvaraya, echoed the concerns of the administration:

"We are passing through anxious times. The war, the drought, the high prices of necessaries of life, the plague and the epidemic of influenza, which has recently spread into this part of the country, mark distressing combination of calamities which are pressing heavily on the population and especially on the poorer classes.

*The deficiency of food supplies is a common experience all the world over at the present time. The position in Mysore is intensified by the almost entire failure of the southwest monsoon. At one time the outlook seemed very gloomy, but a few heavy showers during the last and the current months have partially relieved the situation. The difficulties have arisen chiefly from panic, due to the withholding of stocks by the cultivators and attempts at profiteering on the part of the merchants".*³⁵

Diwan also issued a stern warning to traders and business men:

*"The strong hand of Government must always be in evidence and continue to interfere whenever any section of the community tries to take advantage of the difficulties of the public"*³⁵

To deal with the shortage of food supplies, the government attempted to control the movement of principal food grains. Price limits were enforced for the sale of *ragi* (coarse kind of millet) and rice in certain districts. Depots were opened in the cities of Bangalore and Mysore for the sale of grains at low cost. The *Diwan* pointed out the crucial role of traders in normalizing the food situation:

"What is required is that the existing food supplies should be properly conserved and distributed, and the producers, traders and consumers should

*realize the peculiar difficulties of the situation and work in a spirit of harmonious co-operation".*³⁶

To what extent this appeal had the desired effect is difficult to establish. It is clear though that there was food scarcity in rural areas in particular. Public sentiments can be gauged from newspaper reports, such as those from Sira and Biroor. These expressed the agony and anger of rural people about the non-availability of food grains. They complained that the government was not doing anything to provide essential supplies to people in the countryside.³⁷

Urban-Rural Disparities in Relief Operations

In the assembly session on 28 April 1999, a member citing newspaper reports stated that the cities received all possible help, with medicine and *conji* being carried to the doorsteps of the suffering poor, but the rural areas received very little attention.³⁸ In response, the officiating *Diwan*, A.R. Banerji, pointed out that the government had spent about Rs. 81,000 for relief work during the influenza season and that some of it had been spent in rural areas.³⁹ He was rather evasive though about exactly how much had gone to the latter. Some assembly members therefore asked that the expenditure incurred in urban and rural areas be specified more clearly.⁴⁰ Though both towns and villages were afflicted by the epidemic, due to acute food shortages mortality and the level of distress were higher in the rural districts, as is evident in the administrative report of 1918.⁴¹

In many cases, it was not the lack of funds, but the difficulties in reaching out to the affected areas that resulted in lack of relief measures. The deputy commissioner of Shimoga district in his final report on influenza admitted:

*"It is no doubt true that the taluk officers did not make as generous a use of the ample funds placed at their disposal as the government intended, but there is no reason to suppose that assistance was denied in deserving cases".*⁴²

In fact, the expenditure statement on the relief measures in the state shows that government allotted generous funding for influenza relief operations. Out of the total allotment of Rs. 113,866, the expenditure incurred was only Rs. 81,386, of which Rs. 32,186 was for the supply of medicines.

Table 7: Expenditure Incurred for Influenza Relief Measures in Mysore State - 1918.

serial No	Place	Allotment Rs.	Expenditure Rs.	Remarks
1	Bangalore City	19,430	19,113	
2	Mysore City	8,750	9,369	(Excess expenditure)
3	Bangalore District	5,500	1,091	
4	Kolar	5,550	2,480	(Mulbagal Taluk accounts still due)
5	Tumkur	7,000	3,875	
6	Mysore	8,000	2,002	(does not include expenditure of Hunsur taluk)
7	Hassan	6,000	4,263	
8	Shimoga	8,000	2,963	
9	Kadur	5,500	2,044	
10	Chitaldurg	8,000	2,000	
11	Sanitary Commissioner	3,490	3,490	Cost of Thymol
12	Senior Surgeon	28,696	28,696	Cost of medicines supplied
	Total	1,13,866	81,386	

Source: Report on the Epidemic of Influenza, Proceedings of the Government, G.O. No.G, 19409-21-MED. 56-18-96, dated 4 March 1919- General and Revenue Departments, Government of Mysore, 3 (Karnataka State Archives).

Only in Mysore city more money was spent on relief efforts than the government had allocated. For the temporary influenza hospital in Bangalore, the government sanctioned Rs. 10,000, but at the same time instructed the municipality to meet one third of the total expense. The city however refuse to take its share of the costs, citing other financial commitments.⁴³

Public Health and Sanitation Services: Advantages and Preparedness

What really helped the Mysore state during the pandemic was the well-established Sanitation Department and Health Services, which was lacking in many other provinces. In 1897, Epidemic Diseases Regulation was passed in Mysore empowering the government to take appropriate measures and to prescribe temporary regulations necessary to deal with epidemics. The Mysore Village Sanitary Regulation Act, was passed in 1898. The Vaccination Regulation Act of 1906 provided for compulsory vaccination throughout “notified areas”. Since 1902, the Sanitary Commissioner was responsible for public health services. In 1907, the Mysore government sanctioned a scheme for a separate sanitary service which led to an uniform policy of sanitary administration throughout the state. The establishment of Public Health Institute at Bangalore in 1911 strengthened the governmental efforts in improving public health and for laboratory testing of sample cases. To strengthen the sanitary reform, a full time Sanitary Commissioner was appointed in 1917 as head of the department. In 1912, a training course for sanitary inspectors, with a duration of six months, was started at the Public Health Institute. The major responsibilities of the department included supervise vaccinations and control of epidemics. Subsequently, the nature and scope of the duties increased considerably such as relieving congested areas, opening out conservancy lanes and roads, constructing and repairing drains and tunnels, repairing and sinking fresh water wells etc. The constitution of the Village Improvement Committees encouraged voluntary involvement and labour contributions from villagers to maintain cleanliness and hygiene in the village precincts. However, the sanitation measures focused mostly on urban areas.

Along with the development of sanitary services, the government undertook the expansion of health services. In 1881, there were only 24 hospitals and dispensaries in the state including two Asylums, one for lunatics and the other for lepers. By 1918, the number of medical institutions increased up to 178 (see, Table 8). The establishment of Rural Health Centers in 1931 was another important landmark in the provision of basic health care services. The activities of these centers include improvement of village sanitation, investigation and control of epidemics, immunization services, chlorinating of drinking water sources and reporting of births and deaths.

Table 8: Growth of Medical Institutions in Mysore: 1881 to 1923

Medical Institutions	1881	1891	1901	1911	1918	1923
State Public- General and Special Hospitals and Dispensaries	8	9	15	15	26	28
State non- Public- such as Jail, Military and Public Work Department.	---	6	6	8	8	9
Local Funds and Municipal Dispensaries.	16	81	113	116	128	146
Private Aided				3	4	7
Private Non-Aided				2	2	3
Railway Dispensaries				5	10	7
Total	24	90	134	149	178	200

Source: C. Hayavadana Rao, *Mysore Gazetteers, compiled for Government, Vol.4 (Administrative), Bangalore, 1927-1930*

Concluding observations:

The 1918 Influenza pandemic in India accounted around a fifth of total deaths in the world, causing widespread havoc disrupting the lives and the economy.⁴⁴ However, the impact of this pandemic, including mortality, varied considerably across the provinces in India. In Mysore state, the well-organized administrative machinery and the existing health and sanitation infrastructure made it possible to minimize the calamity. Instructions from the chief secretary and the guidelines from the senior surgeon and sanitary commissioner, as cited above, provided the general framework for the relief measures. Required financial support was granted by the princely government to the two municipalities and the districts of the state. The entire administrative machinery was geared through coordinated efforts to face this public health challenge, which was remarkable. 'Daily messages' and 'weekly reports' were sought from the lower rungs of the administration to monitor the ground situation. Many officers were able to evoke trust and civic responsiveness from the public, while keeping in view the cultural sensibilities and beliefs of the masses. The stern measures enforced by the Mysore administration to regulate the price of essential food grains and the free

supply of essential goods and medicines helped to overcome a famine-like situation.⁴⁵. However, in many rural areas, the relief measures were not successful. Nevertheless, these concerns were freely expressed in Assembly discussions and newspaper reports, and the princely government was receptive to these complaints.

The century-old experience of princely Mysore in combating the influenza pandemic provides very useful lessons - a combination of strong administrative measures, strict monitoring of public health and sanitation services, well-organized relief operations, administration's sensitivity to public grievances and criticism, and the involvement of civilians and community organizations.

¹ Studies cite between eleven and twenty two million excess deaths due to influenza in India. Mills, I D. "The 1918-1919 Influenza Pandemic - The Indian Experience", *The Indian Economic and Social History Review*, 23 (1),1986. 1-40., Davis, Kingsley. *The Population of India and Pakistan*, Princeton NJ, Princeton University Press, 1951, Chandra, Siddharth, Kuljanin, Goran and Wray, Jennifer, 'Mortality from the Influenza Pandemic of 1918–19: The Case of India', *Demography*, 49, 2012, 857–65. Arnold, David "Death and the Modern Empire: The 1918–19 Influenza Epidemic in India," *Transactions of the Royal Historical Society*, 29, 2019, 181-200. According to Hill, Kenneth ("Influenza in India 1918: Epicenter of an epidemic", iussp2009.princeton.edu/papers/93252), the mortality effects of the 1918 Influenza was higher in India than anywhere else on the planet. In the worst affected Bombay Presidency alone 675,222 influenza deaths were reported in October 1918: *Annual Report of the Sanitary Commissioner for the Government of Bombay, 1918* (Bombay, 1919), 23.

² *A Preliminary Report on the Influenza of 1918 in India* by the Sanitary

Commissioner with the Government of India, Simla: Government Monotype Press, 1919,1 (London: Wellcome Library).

³ *Ibid.*, 5

⁴ The 'progressive' image of a few Indian princely states, including Mysore, is generally ascribed to the administrative modernization, state support for social services, mainly for education and health, and the introduction of representative institutions. For details, see, Barbara Ramusack, *The Indian Princes and Their States, The New Cambridge History of India. III.6*, Cambridge: Cambridge University Press, 2004.

⁵ Karnataka State Archives (KSA), Report on the Epidemic of Influenza, Proceedings of the Government, Government of Mysore, General and Revenue Departments, 4 March 1919, p.3.

⁶ According to the census, the reported numbers of deaths from fevers (including influenza) were 100,511 in 1918 and 32,954 for 1919. It also reported 7,552 deaths from Plague, 4,584 from Small Pox and 3,166 from Cholera in Mysore state in 1918.

For details, see *Census of India-1921, Mysore*, V.R.Thyagarajaiyar, Superintendent of Census Operations, Bangalore: Government Press, 1922.

⁷ *Speeches by His Highness, Sri Krishnaraja Wodeyer Bahadur, Maharaja of Mysore, 1902-1920*. Bangalore: Government Press, 1921, 236.

⁸ “President of the Mysore Municipality is requested to take necessary action to open the hospital in consultation with the Senior Surgeon and report the action taken to Government at once. A sum of Rs. 3000 will be sanctioned for equipment and other charges of the hospital”. *Proceedings of the Government of Mysore, Treatment of Influenza Patients*, General and Revenue Departments, No.G. 7856-60-MED. 56-18-22, Dated 29 October 1918, 10 (Karnataka State Archives, Bangalore).

⁹ Mysore was the second largest Princely state in India with a population of about six million in 1911. For administrative purpose, Mysore state had been divided into eight districts, each presided over by a Deputy Commissioner. Every district consisted of several taluks under the supervision of an Amildar. The Amildar was responsible for revenue administration, and also for judicial and police work. The taluk had been subdivided into as many Hoblis, which were under the supervision of Sheikdars or Revenue Officers. For details, see James Manor, *Political Change in an Indian State: Mysore 1917-1955*, Australian National University Monograph on South Asia, No: 2, Delhi: Manohar Publications, 1977.

¹⁰ Official Memorandum from the Chief Secretary to Government, General and Revenue Secretariat, Mysore, 15 October, 1918, p.1 (Karnataka State Archives, Bangalore).

¹¹ *Ibid.*

¹² For details, see, C. Hayavadana Rao, *Mysore Gazetteers, compiled for Government*, various volumes, Bangalore, 1927-1930. For a discussion on the evolution of public health services in Mysore state, refer Sekher, T.V. "Addressing public health and sanitation in Mysore, 1881-1921: 'model' state and 'native' administrators" In *Health and Medicine in the Indian Princely States: 1850-1950*, W. Ernst, B. Pati and T.V. Sekher, Routledge, London and New York, 2018. 26-41.

¹³ Letter from Mysore camp to Mirza Ismail, Huzur Secretary to Maharaja, *Dasara Files of Maharaja's Private Secretariat, 1918* (Divisional Archives, Mysore).

¹⁴ *Final report from the Deputy Commissioner of Chitaldrug district on influenza to the Chief Secretary*, 8

¹⁵ *Final report from the Deputy Commissioner of Chitaldrug district on influenza to the Chief Secretary*, 7

¹⁶ *Report of the Administration of Mysore for the year 1918-19*, Bangalore: Government Press, 1919, 68 (British Library, London).

¹⁷ *Report on the Epidemic of Influenza, Proceedings of the Government*, G.O. No.G, 19409-21-MED. 56-18-96, dated 4 March 1919- General and Revenue Departments, Government of Mysore, 1 (Karnataka State Archives).

¹⁸ *Report on the Epidemic of Influenza, Proceedings of the Government*, 2

¹⁹ *Ibid.*, 1

²⁰ This belief /feeling was common even at the districts, as can be seen from the report of the Deputy Commissioner of Kadur: “the infection was first imported to Kallenahalli,

a village in Sivane Hobli. The Pattegar merchants of the place were in the habit of visiting Bombay once or twice a year to buy silk and cotton yarns necessary for their trade. Three Mahomadan merchants who went to Bombay in the middle of September when that town was infected, returned to their village suffering from fever and cough and died three or four days afterwards...It is possible that persons coming into the district in the Railway from Bombay and other infected localities also might have introduced the epidemic into the district". *Final report from the Deputy Commissioner of Kadur district on influenza to the Chief Secretary*, File 56/1918 ,sl. no: 94, 6, (Karnataka State Archives).

²¹ *Proceedings of the Ordinary General Meeting of the City Municipal Council, Bangalore*, held on 5 October 1918 in the Council Chamber, City Municipal Office, No.G.28-31-Medical , Camp Mysore, dated 9 October 1918, 5 (Karnataka State Archives).

²² *Ibid.* , 5

²³ Letter no: 98 from the President of the Bangalore City Municipal Council to the Chief Secretary of the Government of Mysore, dated 7 October, 1918 .No.G 28-32 –Medical ,Annexure, Camp Mysore, dated 9 October 1918 ,4(Karnataka State Archives).

²⁴ *Report from the Sanitary Commissioner on the Outbreak and Prevalence of Influenza in Mysore State during 1918* to the Chief Secretary of the Government, dated 28 December 1918. File 56/1918 (Karnataka State Archives).

²⁵ *Proceedings of the meeting of leading Municipal Councilors and citizens at City Municipal Office held on 10 October 1918 , Enclosure of the letter no:107 from the President of the Municipal Council, Bangalore City*, file no: 56/1918,sl.no: 130-132 ,3 (Karnataka State Archives).

²⁶ *Proceedings of the meeting of leading Municipal Councilors and citizens at City Municipal Office held on 10 October 1918 , Enclosure of the letter no:107 from the President of the Municipal Council, Bangalore City*,4

²⁷ *Report on the Epidemic of Influenza, Proceedings of the Government*, 1

²⁸ *Ibid.*, 1

²⁹ *A brief report on the relief work organized during Influenza epidemic of October and November 1918 in Bangalore city*, File No : 56/1918 sl.no: 85, 2 (Karnataka State Archives).

³⁰ *Ibid.*, 4-5

³¹ *Ibid.*, 5-6

³² *A brief report on the relief work organized during Influenza epidemic of October and November 1918 in Bangalore city*, 7.

³³ *Ibid.*, 6

³⁴ *Proceedings of the Mysore Representative Assembly, Dasara Session, October 1918, A*

³⁵ *Ibid.*, 1

³⁶ *Ibid.*

³⁷ *Mysore Star (Kannada Newspaper)*, November 3, 1918. Microfilms, Karnataka State Archives.

³⁸ *Proceedings of the Second Session of the Mysore Representative Assembly for the year 1918-19*, held on 28 April 1919 ,140 (Karnataka State Archives)

³⁹ *Ibid.*

⁴⁰ *Ibid.*

⁴¹ *Report of the Administration of Mysore for the year 1918-19* , 68

⁴² *Final report from the Deputy Commissioner of Shimoga district on influenza to the Chief Secretary*, File no: 56/1918,sl.no: 92 ,dated 24 December 1918. (Karnataka State Archives).

⁴³ *Adjustment of Expenditure incurred in connection with the Influenza Epidemic in the cities of Bangalore and Mysore*, 11 Nov. 1918. (Karnataka State Archives).

⁴⁴ Arnold, David "Death and the Modern Empire: The 1918–19 Influenza Epidemic in India," *Transactions of the Royal Historical Society* ,29, 2019, 181-200.

⁴⁵ Sekher, T.V. "Addressing public health and sanitation in Mysore, 1881-1921: 'model' state and 'native' administrators" In *Health and Medicine in the Indian Princely States: 1850-1950*, W. Ernst, B. Pati and T.V. Sekher , Routledge, London and New York, 2018. 26-41.