

Influenza Pandemic of 1918

Lessons in Tackling a Public Health Catastrophe

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As India battles hard to combat the COVID-19 outbreak, it is important to look back and examine how a major pandemic that occurred nearly 100 years ago—the influenza pandemic of 1918 or “Spanish flu”—was tackled by the then colonial administration. The challenges encountered are examined, drawing specifically from the experiences of the state of Mysore, considered as one of the well-administered, “progressive” princely states in British India.

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When the world and India are battling hard to combat the COVID-19 outbreak, it is important to look back and examine how a major pandemic that occurred nearly a century ago, the influenza pandemic of 1918, or Spanish flu, was tackled. This pandemic killed around 12 million people in India alone, more than in any other country. The challenges encountered by the then administration in colonial India are examined, drawing specifically from the experience of the state of Mysore, which was considered one of the better-administered “progressive” princely states in British India. Census data and archival records, available both in India and England, are used to make a historical analysis of the administrative challenges in handling the pandemic.

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 the influenza outbreak in 1918. In India, the influenza pandemic cost at least 12 million lives, though the estimates vary considerably.¹ The sanitary commissioner of the Government of India, F Norman White (1919: 1), 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 [Table 1],

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.

In the end, few months of influenza resulted in more deaths than nearly 20 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 (1919: 5) pointed out:

Influenza within the space of four or five months was responsible for the death of 2% 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.

Exact 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 (Table 2, p 33). Those provinces reported high influenza mortality among the general population but

Table 1: Influenza Deaths in British India, 1918

Province	Population (Census 1911)	Total Estimated Influenza Deaths	Influenza Death Rate per Thousand
Central Provinces and Berar	1,39,16,308	7,90,820	56.8
Delhi	4,16,656	23,175	55.6
Bombay	1,95,87,383	9,00,000	45.9
Punjab	1,93,37,146	8,16,317	42.2
North-West Frontier Province	20,41,077	82,000	40.0
United Province	4,68,20,506	10,72,671	22.9
Coorg	1,74,976	3,382	19.0
Madras	4,00,05,735	5,09,667	12.7
Assam	60,51,507	69,113	11.4
Bihar and Orissa	3,44,89,846	3,59,482	10.3
Burma	98,55,853	60,000	6.0
Bengal	4,53,29,247	2,13,098	4.7
British India	23,80,26,240	48,99,725	20.6

Source: “A Preliminary Report on the Influenza of 1918 in India by the Sanitary Commissioner with the Government of India,” Simla: Government Monotype Press, 1919 (London: Wellcome Library).

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 and higher chances of infection in a crowded environment. According to available evidence, the prevalence of influenza was fairly constant across the provinces, but the mortality varied considerably.

Situation 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 partly due to 50 years of direct British rule from 1831 to 1881, when the administrative machinery in the state was modernised, thereby contributing to Mysore's subsequent reputation as a "progressive princely state."²

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 1918 and spread with lightning speed throughout

the state. According to government records, the total number of incidents was 8,83,491 and the death toll amounted to 1,66,391 (Table 3; GOM 1919a: 3). The 1921 Census for Mysore revealed that the number of deaths per 1,000 in 1918 was about 30 (though the Mysore Gazetteers later provide much higher figure as shown in Table 4), whereas in the previous year it had been 10 and for the year 1919 it was only eight, a good indication of the severity of the epidemic.³

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 (1927–30): Mysore Gazetteers, compiled for Government, Bangalore, 1927–30.

Apart from increased mortality, influenza also affected the spirit of celebrations at the most important annual events of Mysore, that is, the *dasara* festival celebrations and exhibition. This is evident from the speech of the maharaja

of Mysore, Sri Krishnaraja Wodeyer (1921). On 22 October 1918, at the prize distribution function of the *dasara* industrial and agricultural exhibition, he said:

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.

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.⁴ 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.⁵ The district medical officer, the sanitary officer, the amildars (revenue officers), and the deputy amildars were to tour the taluks and ensure that the government instructions were implemented efficiently. They also were to liaise with a variety of medically trained people, such as *vaidyas*, sanitary inspectors and *hakims*, to facilitate the distribution of medicines.

Action Plan

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

Table 2: Influenza Mortality Rates, Incidence Rates and Case Mortality Rates: Selected Provinces and Jail Populations, British India, 1918 (rate per 1,000)

Sl No	Province	Province Influenza Mortality Rate	Jail Influenza Mortality Rate	Jail Influenza Incidence Rate	Jail Influenza Case Mortality
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 in Mills 1986: 12).

Table 3: Mortality from Influenza in Mysore State, 1918

Sl No	District/City	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	7,59,522	1,52,323	16,600	2.2
4	Kolar	7,89,153	77,800	19,631	2.5
5	Tumkur	7,35,346	1,56,316	35,260	4.7
6	Mysore	12,70,765	1,15,997	23,841	1.8
7	Hassan	5,80,200	1,49,340	20,766	3.6
8	Shimoga	5,16,716	77,716	22,741	4.4
9	Kadur	3,38,457	24,355	5,867	1.7
10	Chitaldurg	5,64,243	53,094	18,815	3.3
	Total	57,05,359	8,83,491	1,66,391	2.9

The total figures (population and deaths) are reproduced here as provided in the government order. However, they do not tally. Source: "Report on the Epidemic of Influenza: Proceedings of the Government," 4 March, GO No G, 19409–21-MED. 56–18–96, General and Revenue Departments, Government of Mysore, Karnataka State Archives, Bangalore, p. 3.

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from the chief secretary instructed as follows:

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

(i) 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.

(ii) The deputy commissioner in each district 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.

(iii) 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 cooperation 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.⁶

Tasks of the Officials

This memorandum also specified the responsibilities of the senior surgeon and the sanitary commissioner respectively in handling the pandemic.

(i) 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.

(ii) 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.⁷

M Srinivasa Rao, sanitary commissioner, issued a special statement regarding the cure and prevention of influenza.⁸ The printed version of this, both in English and in the local Kannada language, 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 suffered from influenza.⁹ 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 never got himself treated by the local sub-assistant surgeon. It emerged that he was fine and wanted to avoid exposure to the epidemic.¹⁰

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 Chitradurga 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.¹¹

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 1,95,437, representing a ratio of 34.3 per 1,000 population” (GoM 1919b). 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 (GoM 1919a: 1).

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 provisions were 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 (GoM 1919a: 2). By the 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 utilised, and the senior surgeon

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instructed the students at the medical school to work in conjunction with the medical subordinates in the cities of Bangalore and Mysore (GoM 1919a: 1).

Civic Response and Relief Operations

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.¹² The chief officer, R Subba Rao, informed the council that this disease was the influenza pandemic in some of its graver manifestations (BCMC 1918a). 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 (BCMC 1918a).

The municipal council passed a resolution urging the government to provide suitable treatment and accommodation as quickly as possible for about 100 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 cooperation 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 (BCMC 1918b). A census conducted in Bangalore on 6 and 7 October indicated that there were about 10,000 persons suffering from influenza on those days.¹³ In fact, the situation was so critical

that the president of the municipality saw it necessary to refrain from attending the dasara durbar at Mysore.

Subba Rao prepared a detailed scheme whereby an organised attempt was to be made to supply food and medicines free to the sick at their own homes.¹⁴ 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 1918, was carried out to locate sick people. The free distribution of medicines and *conji* (rice porridge) commenced on 12 October 1918. 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* (free meal distribution centre), 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. Notebooks 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.¹⁵

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 (GoM 1919a: 1). 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% of them died (GoM 1919a: 1).

St Martha's Hospital, the Convent of Mary at Chamarajpet and several Unani dispensaries and Ayurvedic *vaidyasalas* attended to the treatment of the sick in Bangalore city. The relief work in Bangalore had started with a few people, mainly municipal councilors, 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 organisations actively engaged in the relief operations were the Amateur Dramatic Association, Wesleyan and London Missions at Bangalore, Young Men's Christian Association, National High School, Central College, Government Collegiate High School and Civic and Social Progress Association.¹⁶ A large body of students—including those from the Vokkaligara Sangha, the Veerasaiva Students' Hostel and the City Boy Scout organisation—participated in the relief work. The students from Bangalore Medical School played a key role in assisting the compounding work at the instruction of the 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 lakh 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.¹⁷ At the height of the pandemic, a minimum of 6,000 persons were undergoing daily Thymol treatment and at least 3,000 persons received *conji doles* daily in the city.¹⁸

Relief parties worked on the information furnished by the municipal councilors, sanitary inspectors, medical practitioners and residents of the locality. They patrolled the areas and distributed medicines and food free to all deserving cases. 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).

In addition to the above, Bangalore municipality issued further guidelines for the supply of essential items (Box 1).

Compared to Mysore, the Bangalore municipality seems to have organised

the relief operations in a more systematic manner and the involvement of various organisations and volunteers made it possible. The leadership provided by K P Puttanna Chetty, president of the municipality, who had handled the earlier plague epidemic efficiently by liaising with various organisations in the city, is notable.

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 officials with the non-officials, and the rich with the poor. He referred to the spirit of civic responsiveness in the face of great suffering and considerable financial loss.¹⁹

The 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.²⁰

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 organise relief measures (MRA 1918). In his address to the *dasara* session of the assembly, the diwan, M Visvesvaraya, echoed the concerns of the administration:

We are passing through anxious times. The war, the drought, the high prices of necessities 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. (MRA 1918: 1)

The diwan also issued a stern warning to traders and businessmen in the same session:

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.

To deal with the shortage of food supplies, the government attempted to control

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	1 week
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" (1918): Med. File 56/1918.sl. no: 1301–132. Circular from Chief Secretary to Government, 15 October 1918 (Karnataka State Archives).

Box 1: 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) Organisation 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.

the movement of principal foodgrains. Price limits were enforced for the sale of ragi 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 normalising 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. (MRA 1918)

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 the rural people about the non-availability of foodgrains. They complained that the government was not enough to provide essential supplies to people in the countryside.²¹

Disparities in Relief Operations

In the assembly session on 28 April 1919, a member, citing newspaper reports, argued that the cities received all possible help, with medicine and conji being carried to the doorsteps of the suffering poor, but that the rural areas received very little attention. In response, the officiating diwan, A R Banerji, pointed out that the government had spent about ₹81,000 for relief work during the influenza season and that some of it had been spent in rural areas. He was rather evasive about exactly how much had gone to the latter. Some assembly members therefore demanded that the expenditure incurred in urban and rural areas be specified (MRA 1919). 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 1918–19 (GoM 1919b).

In many cases, it was not the shortage 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 pandemic 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.²²

In fact, the expenditure statement on the relief measures shows that the government allotted generous funding for influenza relief operations. Out of the total allotment of ₹1,13,866, the expenditure incurred was only ₹81,386, of which ₹32,186 was for the supply of medicines (Table 6).

Table 6: Expenditure Incurred for Influenza Relief Measures in Mysore State, 1918

Sl No	District/City	Allotment (₹)	Expenditure (₹)	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," 4 March, GO No G, 19409–21–MED. 56–18–96, General and Revenue Departments, Government of Mysore, Karnataka State Archives, Bangalore, p. 3.

Only in Mysore city more money was spent on relief efforts than what the government had allocated. For the temporary influenza hospital in Bangalore, the government sanctioned ₹10,000, but at the same time instructed the municipality to meet one-third of the total expense. The city council however refused to meet its share of the costs, citing other financial commitments.²³

Conclusions

The 1918 influenza pandemic in India accounted for around one-fifth of total deaths in the world causing widespread havoc and disrupting lives and the economy, but it has received very little attention of researchers (Arnold 2019). However, the impact of this pandemic, including mortality, varied considerably across the provinces in India. In Mysore state, the well-organised administrative machinery and the existing health and sanitation infrastructure made it possible to minimise the calamity. Instructions from the chief secretary and the guidelines from the senior surgeon and sanitary commissioner provided the general framework for the relief measures. Required financial

support was granted by the princely government to the two municipalities and the districts. The entire administrative machinery was geared through coordinated efforts to face this public health challenge. 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 foodgrains and the free supply of essential goods and medicines helped to overcome a famine-like situation (Sekher 2018). However, in many rural areas, the relief measures were not very 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. They involve a combination of strong administrative measures, including strict monitoring of public health and sanitation services, timely gathering of data and information, well-organised relief operations, regulating the price of foodgrains, the administration's sensitivity towards public grievances and cultural sentiments, and the involvement of civilian and community organisations.

NOTES

- 1 Studies cite between 11 million and 18 million excess deaths due to influenza in India (Mills 1986; Davis 1951; Chandra et al 2012; Arnold 2019).

- According to Hill (2009), the mortality effects of the 1918 Influenza pandemic were higher in India than anywhere else in the world. In the worst-affected Bombay Presidency alone, 675,222 influenza deaths were reported in October 1918 in the "Annual Report of the Sanitary Commissioner for the Government of Bombay, 1918 (Bombay [1919], p 23), and Ramanna (2003).
- 2 The "progressive" image of a few Indian princely states, including Mysore, is generally ascribed to the administrative modernisation, state support for social services—mainly for education and health—and the introduction of representative institutions (see Ramusack 2004).
 - 3 According to the census, the reported numbers of deaths from fevers (including influenza) were 1,00,511 in 1918 and 32,954 for 1919. It also reported 7,552 deaths from plague, 4,584 from smallpox and 3,166 from cholera in Mysore state in 1918 (Thyagarajaiyar 1922).
 - 4 "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 ₹3,000 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, 29 October 1918, p 10, Karnataka State Archives.
 - 5 Mysore was the second largest princely state in India with a population of about 6 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 (see Manor 1977).
 - 6 "Official Memorandum from the Chief Secretary to Government, General and Revenue Secretariat" (1918): Mysore, 15 October, p 1, Karnataka State Archives (KSA).
 - 7 Official Memorandum from the Chief Secretary to Government, General and Revenue Secretariat" (1918): Mysore, 15 October, p 1, Karnataka State Archives (KSA).
 - 8 Mysore state had a well-established sanitation department. In 1897, the 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 that led to a uniform policy of sanitary administration throughout the state. The establishment of the 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. 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 Rao 1927-30). For a discussion on the evolution of public health services in Mysore state, refer to Sekher (2018).
 - 9 "Letter from Mysore camp to Mirza Ismail, Huzur Secretary to Maharaja, Dasara," Files of Maharaja's Private Secretariat, 1918, Divisional Archives, Mysore.
 - 10 "Final report on influenza from the deputy commissioner of Chitaldrug district to the chief secretary," p 8, KSA.
 - 11 Final report on influenza from the deputy commissioner of Chitaldrug district to the chief secretary," p 7, KSA.
 - 12 This belief/feeling was common even in 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, p 6, KSA.
 - 13 "Report from the Sanitary Commissioner on the Outbreak and Prevalence of Influenza in Mysore State during 1918 to the Chief Secretary of the Government" (1918): 28 December, File 56/1918, KSA.
 - 14 Proceedings of the meeting of leading Municipal Councillors 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 Nos 130-32, p 3, KSA.
 - 15 Proceedings of the meeting of leading Municipal Councillors 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 Nos 130-32, p 4, KSA.
 - 16 "A brief report on the relief work organised during Influenza epidemic of October and November 1918 in Bangalore city," File No 56/1918 sl no 85, p 2, KSA.
 - 17 A brief report on the relief work organised during Influenza epidemic of October and November 1918 in Bangalore city," File No 56/1918 sl no 85, p 4-5, KSA.
 - 18 A brief report on the relief work organised during Influenza epidemic of October and November 1918 in Bangalore city," File No 56/1918 sl no 85, p 5-6, KSA.
 - 19 A brief report on the relief work organised during Influenza epidemic of October and November 1918 in Bangalore city," File No 56/1918 sl no 85, p 7, KSA.
 - 20 A brief report on the relief work organised during Influenza epidemic of October and November 1918 in Bangalore city," File No 56/1918 sl no 85, p 6, KSA.
 - 21 *Mysore Star* (Kannada newspaper), 3 November 1918. Microfilms, Karnataka State Archives.
 - 22 "Final report from the Deputy Commissioner of Shimoga district on influenza to the Chief Secretary" (1918): File No 56/1918, Sl No 92, 24 December, KSA.
 - 23 "Adjustment of Expenditure incurred in connection with the Influenza Epidemic in the cities of Bangalore and Mysore," 11 November 1918, KSA.
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