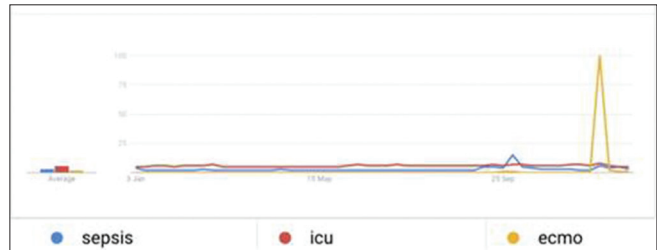


## Sepsis Awareness in India from Internet Search Trends: Where Do We Stand?

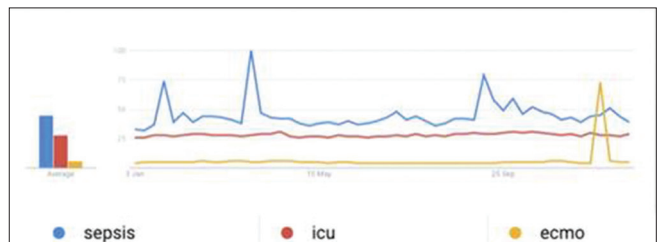
Sir,

Sepsis is defined as a life-threatening organ dysfunction caused by a dysregulated host response to infection. The incidence of sepsis has shown a steady upward trend across recent years. In the USA alone, it accounted for more than 20 billion US dollars in hospital costs in 2011.<sup>[1]</sup> Recognizing the gravity of the situation a Task force was constituted by the European Society of Intensive Care Medicine and the Society of Critical Care Medicine that has come up with a more effective operational definition of sepsis. The new definition is expected to ease identification of patients with sepsis or at risk of developing sepsis thereby helping in better management and improved outcome.<sup>[2]</sup> In India, the scenario is equally alarming with one in four patients admitted to the Intensive Care Unit (ICU) developing severe sepsis or septic shock with an estimated mortality of >50%.<sup>[3]</sup>

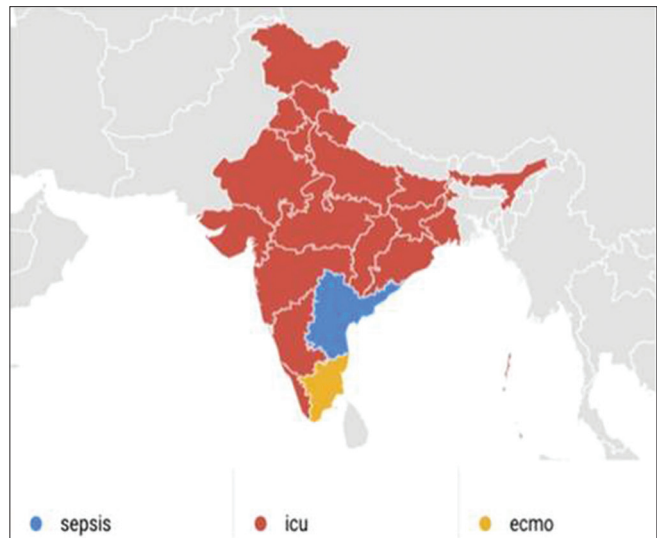
The population in India is a relatively young one, and as much as 34% of the population have access to the internet. We searched Google Trends for Indian data over the last 12 months to evaluate internet searches about sepsis. After determining search terms primarily related to sepsis, we compared search volume over the past 12 months using search terms including (sepsis), (ICU) and (ECMO). Our results were quite interesting. We found that average search volumes for all three terms remained dismally low throughout the year [Table 1 and Figure 1]. However, interest in the search terms of sepsis and extracorporeal membrane oxygenation (ECMO) has shown peaks at the beginning of October and December, respectively [Figure 1]. The Indian internet populace's renewed interest in sepsis could be related to the hospitalization and subsequent unfortunate demise of much loved Honorable ex-Chief Minister of Tamil Nadu Ms. J. Jayalalitha during this period. The sepsis-related terms which showed a rising search volume during the last 1 year is shown in Table 2. However, notwithstanding the peaks, interest in sepsis-related searches remain quite low in India compared to global averages over the last 1 year [Figure 2 and Table 2]. When we analyzed by subregions, we found that the states of Tamil Nadu and Andhra Pradesh were ahead of national average in searches for "sepsis," with the maximum number of searches for "sepsis" and "ECMO" emanating from Andhra Pradesh and Tamil Nadu, respectively [Figure 3]. Findings from this analysis provide valuable insight into internet use of Indians in gaining sepsis-related information. We need to capitalize on the renewed interest in sepsis during the latter half of the year as evident from the internet searches and create greater public consciousness about this dreaded condition. The burden of tropical infectious disease in India is huge and economic resources scarce.<sup>[4]</sup> The public and health personnel need to



**Figure 1:** Internet searches over time in relation to sepsis in India (reproduced from <https://www.google.co.in/trends/explore?date=today%2012-m&geo=IN&q=sepsis,icu,ecmo>)



**Figure 2:** Internet searches over time in relation to sepsis globally (reproduced from <https://www.google.co.in/trends/explore?date=today%2012-m&q=sepsis,icu,ecmo>)



**Figure 3:** Internet searches over last 12 months analysed at the state level (reproduced from <https://www.google.co.in/trends/explore?date=today%2012-m&geo=IN&q=sepsis,icu,ecmo>)

be made aware of the severe threats imposed by sepsis so that preventive measures are undertaken more vigorously, and measures to halt its progression are implemented at an earlier stage before multiorgan dysfunction sets in.

**Table 1: Average search index over the last 12 months**

| Search Term | India | Worldwide |
|-------------|-------|-----------|
| Sepsis      | 3     | 45        |
| ICU         | 6     | 28        |
| ECMO        | 2     | 6         |

**Table 2: Top search terms related to sepsis over last 12 months in India**

| Search Terms                | Average Search Index |
|-----------------------------|----------------------|
| Sepsis meaning              | 100                  |
| Sepsis guidelines           | 55                   |
| What is Sepsis              | 40                   |
| Sepsis disease              | 40                   |
| Sepsis icd 10               | 40                   |
| Neonatal Sepsis             | 40                   |
| Sepsis treatment            | 35                   |
| Sepsis guidelines 2016      | 30                   |
| Sepsis symptoms             | 30                   |
| Jayalalitha                 | 25                   |
| Puerperal Sepsis            | 25                   |
| Severe Sepsis               | 25                   |
| Sepsis syndrome             | 25                   |
| Sepsis definition           | 25                   |
| Sepsis means                | 20                   |
| Meaning of sepsis           | 20                   |
| Surviving sepsis guidelines | 15                   |
| Septic shock                | 15                   |
| Septicemia                  | 15                   |
| Jayalalitha news            | 10                   |
| Richard Beale               | 10                   |
| Symptoms of Sepsis          | 10                   |
| SIRS                        | 10                   |
| Jayalalitha latest news     | 5                    |

The internet is a powerful tool of communication today allowing an easier, cheaper and faster access, and dissemination of information. Hence, we need to use the internet and social media in generating interest and creating public awareness in the importance of prevention, early detection and timely management of this life-threatening condition.

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## Conflicts of interest

There are no conflicts of interest.

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