

## Pop pills at will: implications of self-medication

Pop pills at will, i.e. self-prescribing medicines is becoming a severe menace in India. Self-medication is common and acceptable across all segments of society including paediatric self-medication. People find self-medication a time saving quick way of treatment and avoid visiting physicians with an aim of presumptive cost cutting. In a study, 57% of undergraduate medical students in West Bengal reported self-medication including antibiotics<sup>1</sup>. Antibiotics are easily available over the counter without any prescription<sup>2</sup>. Self-medication, inappropriate dosage along with self-diagnosis, lack of public health care facilities, all contribute to growing incidences of antimicrobial resistance including the Carbapenem-resistance Enterobacteriaceae (CREs)<sup>3</sup>. Carbapenems are considered as drugs of last resort with very broad spectrum activity and highest potency against bacteria<sup>4</sup>. The CREs are moving around the globe with *Klebsiella pneumoniae* and *Escherichia coli* included in the list. CREs are life threatening and kill half of the affected patients due to ineffectiveness of antibiotics<sup>5</sup>. This provokes immediate alarm and is especially worrisome situation for India where carbapenems resistance is rapidly increasing in

the bacterial strains<sup>6</sup>. Due to inadequate and insufficient diagnostic procedures, antibiotic-resistant pathogens go undetected and pose risk of untreatable outbreaks. Also, in the absence of any foolproof surveillance system like Intensive Care Antimicrobial Resistance Epidemiology (ICARE), we are at greater risk of developing antibiotic resistance to most front-line drugs in use.

The prevalence of self-medication often provides superficial relief, but inappropriate combination and dosage may lead to recurrence of symptoms indicative of a serious problem. Increased self-medication may lead to intoxication, even proving fatal in many cases<sup>7,8</sup>. Eradication of deep-rooted self-medication in India would take long time with requirements of constant and dedicated efforts at all levels with serious measures for public awareness about deleterious effects of self-medication. Indian schools may have a compulsory subject of 'Medical Watch' with the support of agencies like ICMR and WHO. This will help the students to know the ill impacts of self-medication in the long run and benefits of promoting hygiene to control infections. Rigorous training and exclusive modules for physicians are also

required to improve use of antibiotics and identify the risk factors. Thus, a cumulative approach is required to address and tackle issues of self-medication leading to antimicrobial resistance.

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## Two Freds' no more: the legacies of two scientists

It has been a sad week just before the annual commencement of Nobel Laureate lectures. Frederick Sanger, two-time Nobel Prize winner who invented Sanger sequencing died in his sleep<sup>1</sup> while Fred Kavli, a physicist-turned-philanthropist died of cancer. These two great scientists would remain special for that they have given wonderful bequests to the scientific community. Kavli established the Kavlico Corporation and later went on setting up a foundation to benefit science. A total number of 17 Kavli institutes were setup around the world which focused on funding research in the areas of neuroscience, theoretical physics and nanosciences<sup>2</sup>. Sanger's research group

discovered that every protein had a unique sequence wherein their work on the two polypeptide chains of the protein insulin was shown to have precise amino acid sequences. This accomplishment earned him his first Nobel Prize in Chemistry in 1958. Such was the discovery that the sequence theory of Crick in DNA codes for proteins has been well considered. It would be a fitting tribute to learn their legacies not only on how to be a good scientist but also how to be a good promoter of science. While one laid the foundation for genetic engineering, the other setup his own foundation in providing research grants to the researchers.

1. <http://www.telegraph.co.uk/news/obituaries/science-obituaries/10462574/Frederick-Sanger-OM.html>
2. [http://www.nytimes.com/2013/11/25/us/fred-kavli-benefactor-of-science-prizes-dies-at-86.html?\\_r=0](http://www.nytimes.com/2013/11/25/us/fred-kavli-benefactor-of-science-prizes-dies-at-86.html?_r=0)

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