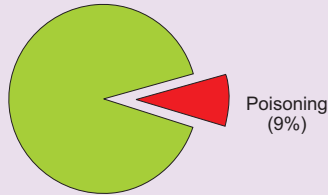
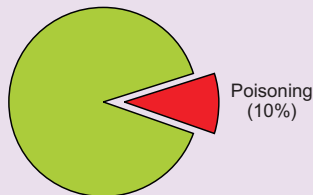




## Fatal



## Non-Fatal



Ms. G, aged 26 years, married, with a girl child, ended her life with a handful of barbiturates on a weekend. All her family members were away in a marriage function. It was reported that her death was due to chronic stomach ache (Sic!).

Ms. G was the 3rd child in a middle class family. When she was young she lost interest in education, but was forced to continue. Her parents kept pressurising for her to excel. She got into an affair in her 20th year, but could not marry against opposition from her family. She got married against her wishes when she was 23. An alcoholic husband, routine family fights, pressure to bring dowry and unable to get a job, she slowly started losing interest in life. She tried to confide in her husband, parents and friends, but everyone brushed it aside and told that it was normal for such things to happen. She attempted suicide 2 years prior to her death, but was treated soon after the act, and she refused to take any further treatment. Later, she lost all interest / happiness and was feeling isolated. All her attempts to rebuild her life failed as no one listened to her. A dispute with her husband on financial issues, resulted in her consuming tablets, bought from a nearby store.

**Poisoning, though common has remained a largely neglected area of research in India. In 2007, 25,447 deaths and 4,987 serious injuries were reported across the country. In the same year, there were 1619 deaths in Karnataka, while the city registered 584 deaths. Underreporting and misclassification are extremely common and actual numbers could be much higher.**

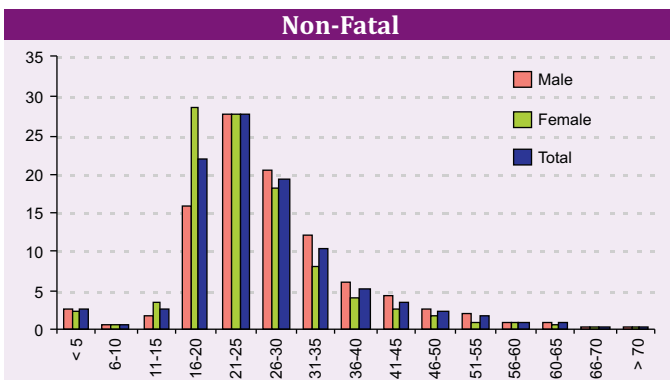
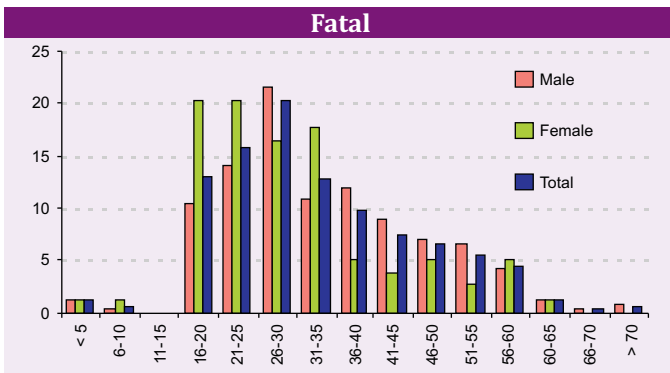
Poisoning is a common day-to-day event. Both print and visual media regularly report individual and mass instances of poisoning. The word poison means "a substance that causes injury, illness, or death, especially by chemical means". (1) Consumption of such substances either intentionally or accidentally results in death or serious injuries. Poisoning with adulterated liquor and contaminated food, though not included here, are also reported regularly in the media. Poisoning can be suicidal, accidental or even homicidal. Due to lack of research and systematic reporting, details with regard to nature of products, situation and outcome are not clearly known in India. Poisoning is not investigated in detail, and if investigated, information is not used for preventing such acts in future.

## The problem

- ❖ In 2007, there were 25,447 deaths and 4,987 serious injuries (reflecting severe underreporting) due to accidental poisoning in India. Injuries are seriously underreported in poisoning. (2)
- ❖ In Karnataka, there were 1619 accidental deaths and 3975 suicidal deaths due to poisoning (2) in the same year.
- ❖ The city of Bengaluru, reported 584 deaths due to poisoning with suicidal and accidental deaths in the ratio of 3: 1.(2)
- ❖ Data from BISP revealed that there were nearly 300 (9%) deaths due to poisoning in 2007. In the same one-year, there were 5,470 (10%) persons with injuries brought to 21 partner institutions. The actual number of poisoning injuries could be much higher as many of them are either treated in small nursing homes or even at home.(3)
- ❖ Due to medico legal complexities, substantial numbers of poisoning cases are not reported to police due to the fear of investigative and legal proceedings. Thus, the actual number of serious injuries due to poisoning could be approximately 10,000 in the city of Bengaluru. The problem could be much higher in rural areas. Further, people in rural areas need to travel long distances to obtain medical care.

## Profile and pattern

- ❖ Male preponderance was seen in poisoning with a ratio of 3: 1.
- ❖ Nearly one third of poisoning deaths occurred in 21 to 30 years, while among teenagers in 16 to 20 years age group it was 12.8%.
- ❖ Women were comparatively higher in younger age groups in fatal acts of poisoning.
- ❖ Few children had died in occasional instances of accidental poisoning.
- ❖ Housewives were represented in greater numbers for both fatal (12%) and nonfatal (9%) injuries.
- ❖ Among the injured, students were represented to the extent of 4.4 % (fatal) and 16% (nonfatal).

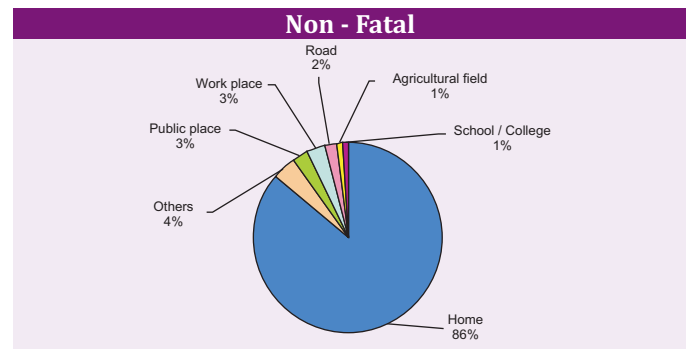
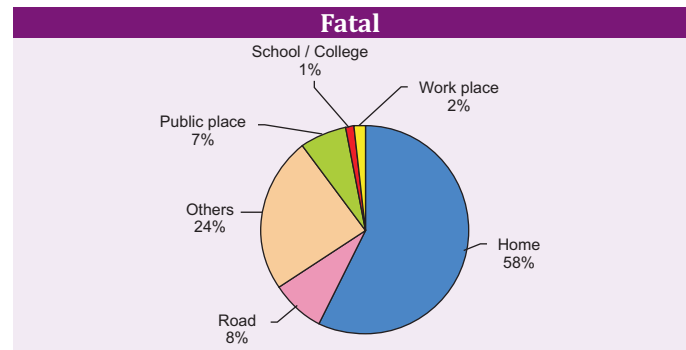


- ❖ Majority of deaths and serious injuries were reported from lower and middle-income sections of society.
- ❖ The first six months of the year reported higher poisoning deaths and no specific reasons could be attributed for this observation; probably could be due to increasing numbers among younger age groups. Data over a period of time need to confirm this finding and reasons should be identified.
- ❖ Two thirds of poisoning were suicidal (64%) with homicidal and accidental poisonings reported in

1-2% and 18-19% respectively. Intent was difficult to establish among others.

## Risk factors

- ❖ The commonest place of poisoning was home in 58% of fatal and 86% of nonfatal poisonings. Poisoning was also seen in educational institutions, hotels and public places.

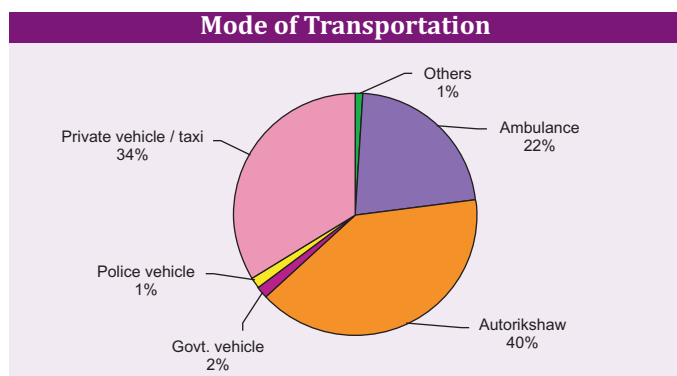


- ❖ A wide range of products were used for poisoning acts. The final outcome in poisoning depends on type – lethality and amount consumed along with availability of timely medical care. Data in the present programme showed that consumption of organophosphorus compounds and large amount of drugs resulted in deaths, even though many commonly available household products were used. In suicidal poisonings, the products were mainly organophosphorus compounds and drugs.
- ❖ From earlier studies, it has been documented that majority of these products were either available at home or were purchased from nearby shops.(4)
- ❖ The causes of poisoning were not clearly available and documented in the present programme and require further research. Limited studies in the past have shown that presence of some specific risk factors like easy availability of products, history of mental health problems (depression and alcoholism in particular), previous suicidal attempts, acute economic crisis, history of domestic violence and abuse absence of protective factors like coping abilities, crisis

support, family attachment, timely communication, social support and others contribute for voluntarily ending one's life (5, 6). Since analytical studies are extremely limited, the precise causes are difficult to establish requiring further understanding of suicides.

## Emergency care

- ✦ Nearly 43% and 39% were given first aid after they reached the first contact hospital.
- ✦ Majority were provided first aid by doctors and nurses and referred from public-sector hospitals. By and large, if the person is found to be alive, it was common for household members to administer some type of first aid.
- ✦ Transport by private vehicles and auto rickshaw was seen in 34% and 40%, respectively, for seriously injured patients.



## Impact

Nearly 90% percent of poisoning cases brought to hospitals were moderate to severe requiring aggressive management.

## Prevention and control

Prevention of poisoning rests on a number of strategies. To develop any intervention programmes, a clear understanding of problem, risk factors and causes, situation – context of occurrence are required. To facilitate this understanding, good research delineating human, product and social / environmental factors are required to identify what can be done before any poisoning occurs, in the event of an act or after such instances. Good documentation helps in developing strategies and approaches to prevent such acts occurring in future. In addition, it

requires cooperation of Governments, industry, health professionals and all others to develop integrated approaches. Even though India has established few poison prevention centres in selected cities of the country in recent years, their role in prevention and control is not clearly known.

Some of the strategies known to reduce poisoning include

- ✦ Manufacture of chemicals and compounds with less lethality, and if required, highly lethal ones not to be available in public domain.
- ✦ Community storage of organophosphorus compounds and making it available on restricted basis.
- ✦ Parental and care giver's supervision for safe storage of poisonous substances away from reach of children and vulnerable family members.
- ✦ Limiting the easy availability of poison through regulatory mechanisms, like selling medicines only on prescription and in limited quantities.
- ✦ Sale of medicines in small packets and containers.
- ✦ Compulsory childproof containers for all medicinal liquids.



- ❖ Mandatory warning in prominent letters to inform public.
- ❖ Making available required antidotes in all health-care institutions.
- ❖ Training of health personnel in emergency care
- ❖ Improving trauma care systems.
- ❖ Public education programmes to inform dangers of poisoning, and

- ❖ Information on environment, product responsible and other contributory factors need to be understood by future research.

Thus, it is apparent that regulating the manufacture, availability, distribution and sale along with greater public awareness are required for reducing poisoning deaths and injuries. Further research into nature and type along with availability of products is required to develop specific interventions.

The Queensland injury surveillance unit collects data from patients coming to emergency department of hospitals for treatment of their injuries and is based in Brisbane, Australia. The unit collects data from 16 hospitals around Queensland including urban, regional, rural and remote hospitals.

Before Christmas, in 2004, Harrison was brought to the Mater hospital emergency department with history of accidental consumption of dish washer powder. The powder was highly caustic and had resulted in swelling of his airways making him difficult to breathe. Investigations showed that the child resistant closure of the bottle cap had not been engaged, there was no proper warning or instruction, the pH of the powder was very high, and was easily accessible to Harrison.

A data search from the surveillance data base revealed that 4% of all non-medicinal ingestions were from dish washer detergents and many were severe. The data base revealed that there were 19 other children with a history of similar poisoning, with 3 of them related to dish washer powder. Pursuing some of the leads resulted in:

- ❖ Constitution of a multi-sectoral working party to revisit the laws.
- ❖ Supplementation of data from the local poison information centre.
- ❖ The manufacturer agreeing to make necessary changes in the composition, labeling and securing safety for the dish washer powder.
- ❖ Lobbying to provide safe product to consumers.
- ❖ Educating parents and care givers.
- ❖ Including the dish washer powder under stipulated schedules and limiting the availability for the domestic market.
- ❖ Bringing in standards for child resistant closure of bottles and ensuring that it works properly.
- ❖ Most importantly, the reality of such poisonings hit home to lots of people due to large scale media involvement.

The activities by different groups through different channels resulted in improving the safety of the product, limiting the availability, increasing public awareness and bringing in necessary mechanisms. A change was brought about due to clinical concern, supported with sound evidence and thorough development of mechanisms and partnerships. This made a big difference for the community.(7)

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<p>Bengaluru Injury / Road Traffic Injury Surveillance Programme is a collaborative Programme between Bengaluru City Police, 25 hospitals, Bengaluru Metropolitan Transport Corporation and Bruhat Bengaluru Mahanagara Palike. The programme is coordinated and implemented by National Institute of Mental Health &amp; Neuro Sciences and facilitated by Indian Council of Medical Research and World Health Organization, India office. The programme aims at reducing / preventing injuries, improving trauma care and strengthening rehabilitation services.</p>										
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