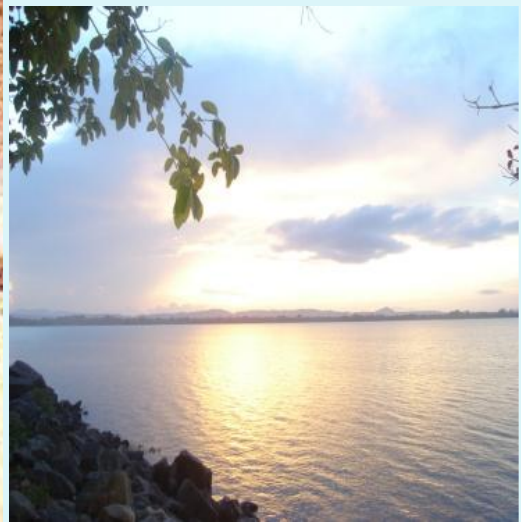
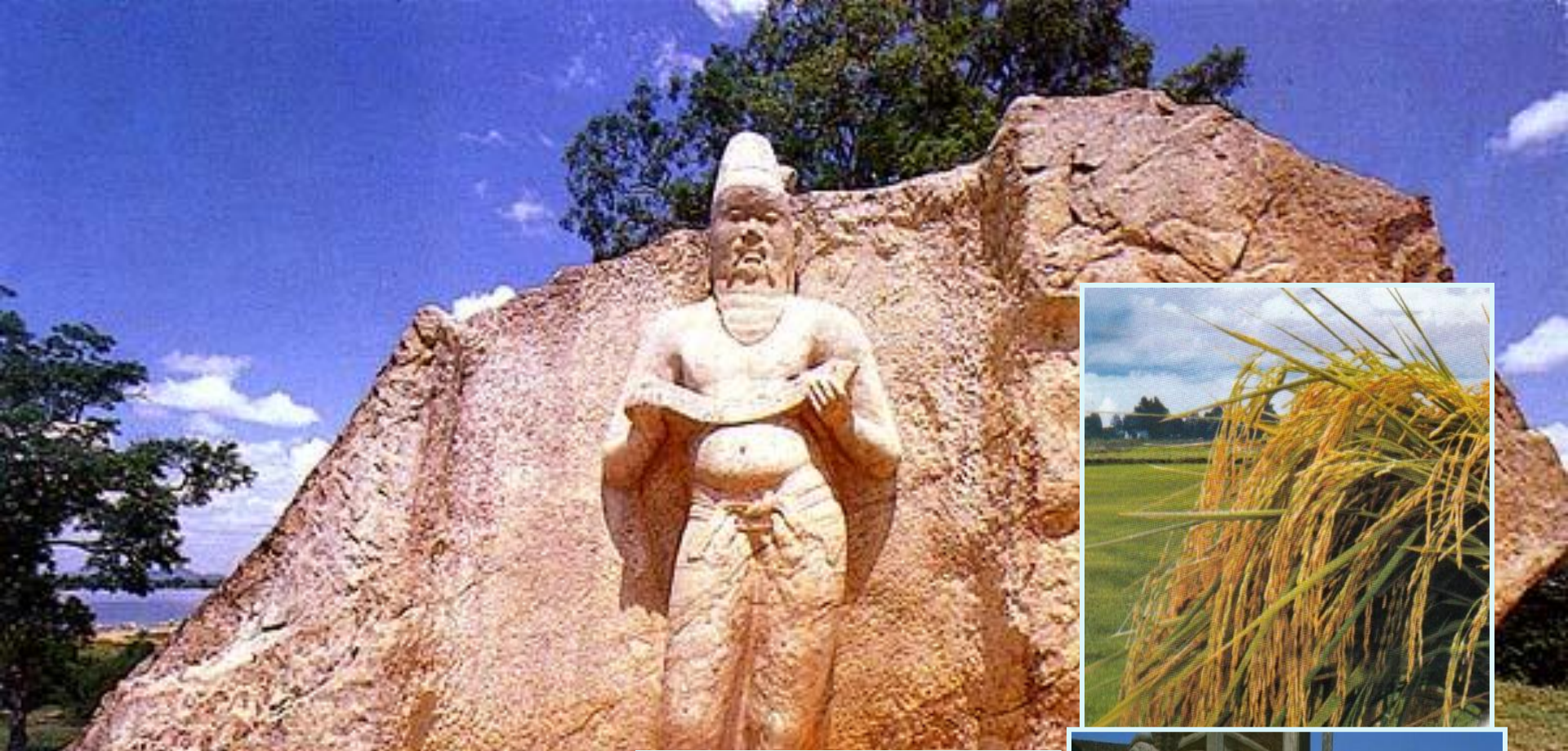


Poisoning a Physicians Experience from Rural Sri Lanka

Dr. Shaluka Jayamanne







Small white sign with text in Malayalam script, likely a field marker or identification tag.

27 11:04 AM

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27 11:02 AM

Deliberate?



Accidental?



Self inflicted violence

- Self inflicted violence accounts for around half of the 1.6 million violent deaths that occur every year worldwide.
- About 63% of global deaths from self harm occur in the Asia Pacific region.
- Most of these deaths occur in rural areas, where easy access to highly toxic pesticides turns many impulsive acts of self poisoning into suicide

Case Fatality

-
- many deaths from self poisoning in Asia Pacific occur in people who do not intend to die; they die because the poisons ingested are very toxic and patients are difficult to treat.

Case Fatality Rates

- The estimated case fatality from overdose in England is 0.5%
- In developing countries with high rate of pesticide poisoning the fatality rates range from 10%-20%

Suicide Rates from pesticides

Rural China	60%
Rural Sri Lanka	71%
Thailand	68%
Malaysia	>90%

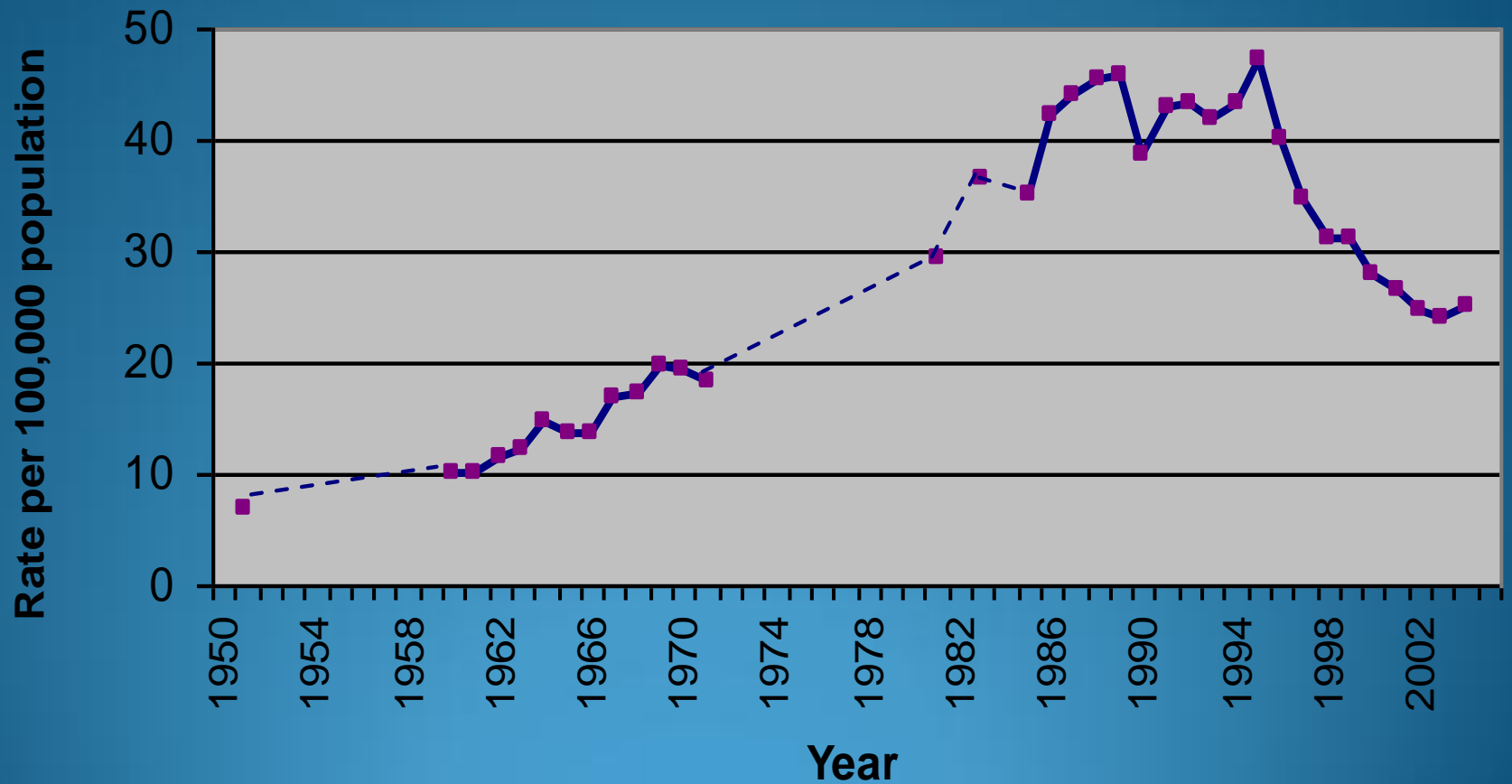
Fatal Self harm and mental disorders

- WHO's report supports the common view that fatal self harm is always associated with a mental disorder
- But studies from China, India, and Malaysia suggest that a substantial proportion of people who die from self harm do not have a diagnosable mental illness.

Magnitude of the problem

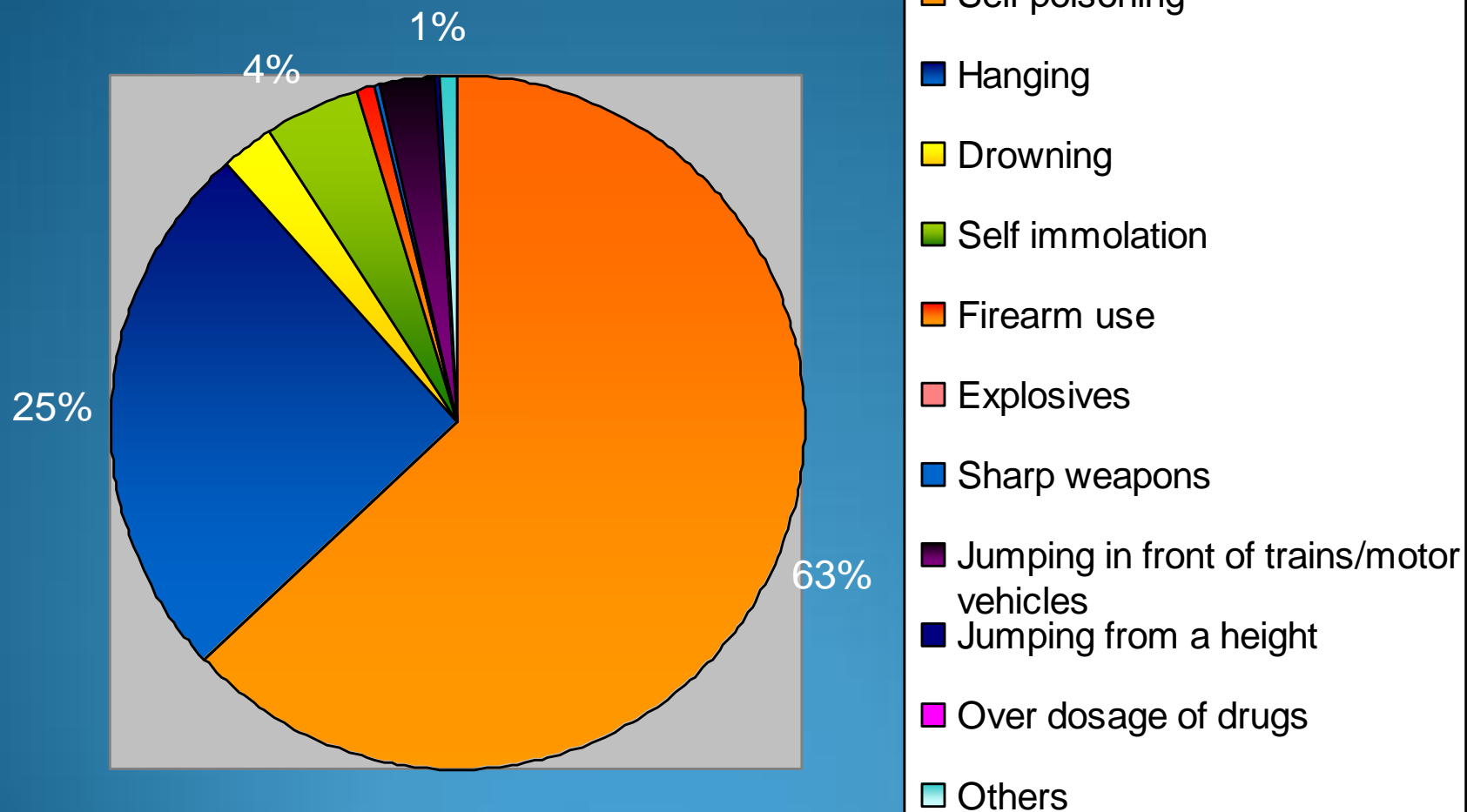
- 7% of the admissions to the Medical ward are due to instances of self poisoning
- The agents used are
 - Oleander seeds
 - Organophosphates
 - Carbamates
 - Paraquat
 - Other agro-chemicals
 - Drugs – Paracetamol, Salbutamol, antipsychotics, antidepressants, antihypertensive

Suicide rates in Sri Lanka 1950 - 2004

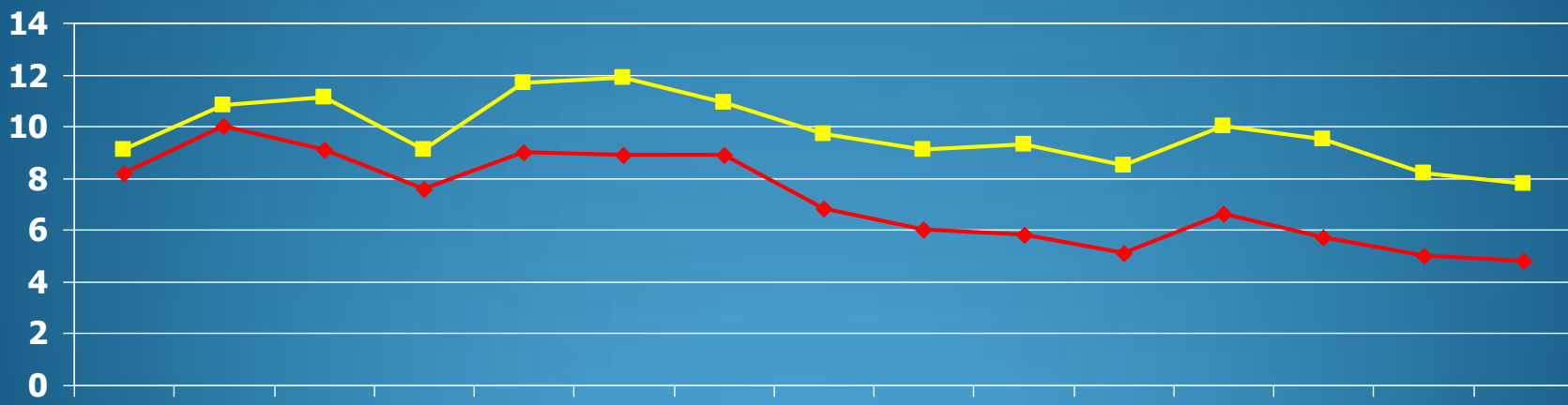
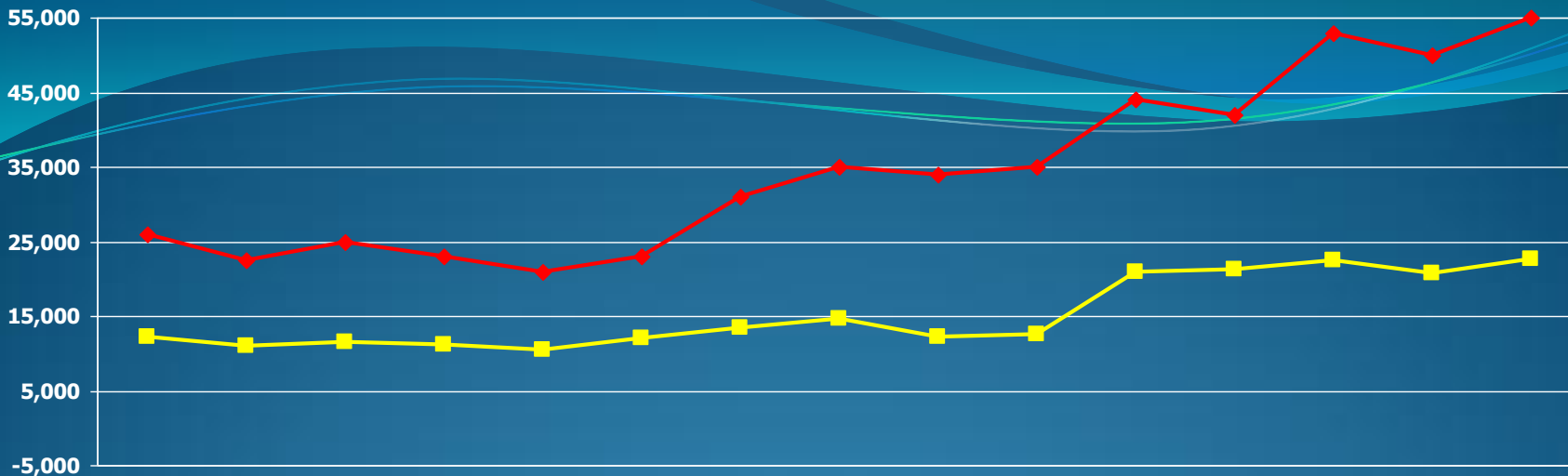


Source: National Poisons Information Centre

Methods used to commit suicide in Sri Lanka (2004)



Source: National Poisons Information Centre



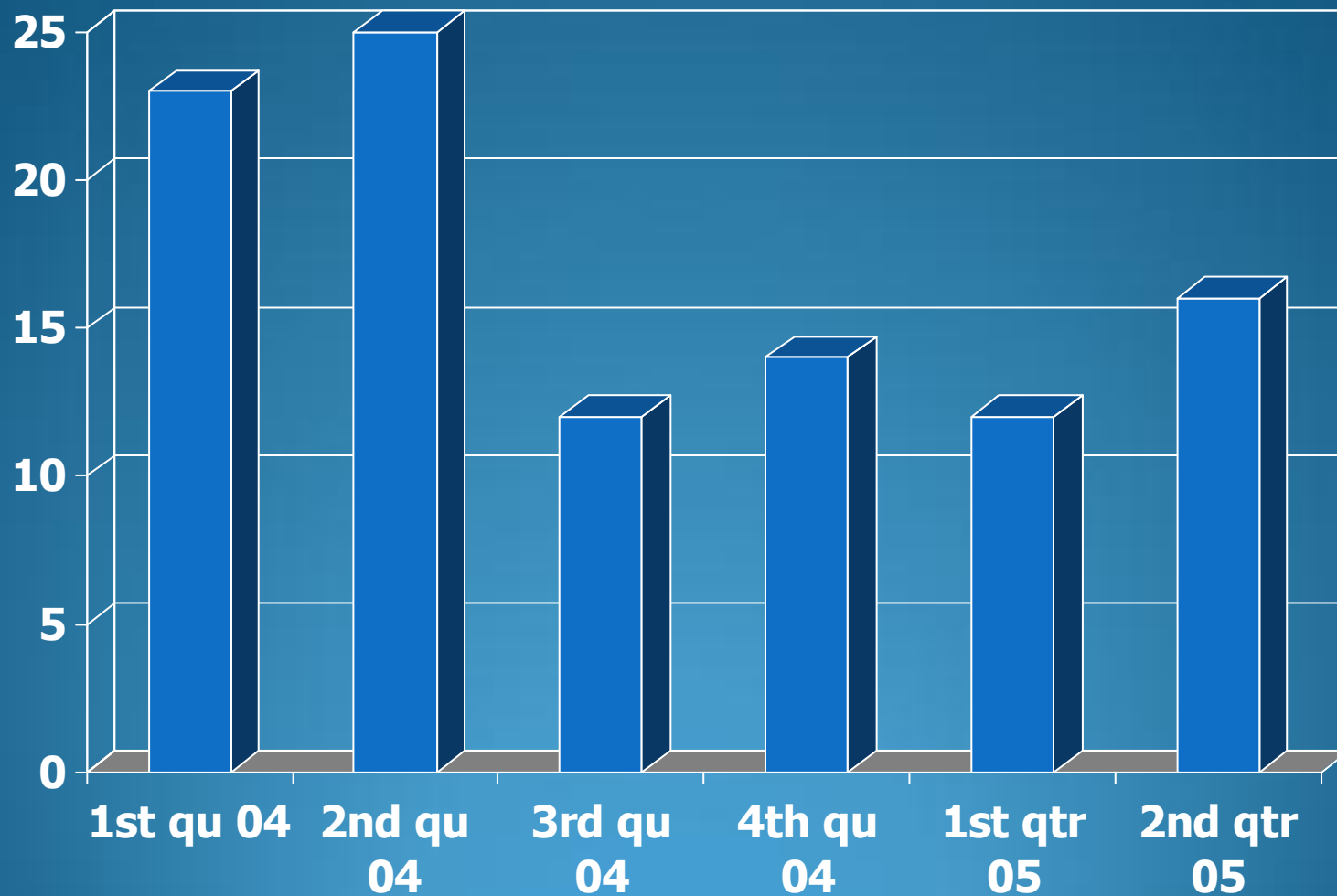
◆ Total poisoning admissions & case fatality rates ■ Pesticide admissions and case fatality rates

National figures

Mortality rates of poison admissions at Anuradhapura General Hospital, Sri Lanka (2.4.02 – 13.1.03)

	# Admissions	# Deaths	Mortality Rates (%)
Oleander	350	25	7.1
Organophosphate	277	39	14.1
Other Pesticides	141	6	4.3
Medicines	101	1	1.0
Carbamates	57	4	7.0
Hydrocarbons	44	0	0
Paraquat	45	21	46.7
Unknown	56	3	5.4
Unknown Pesticides	93	9	9.7
Organochlorines	5	3	60.0
Acid	3	0	0
Alkali	4	0	0

Total deaths due to poisoning in 2004 & 2005 in GHP



General Comments

- Try and get as much history as possible including witnesses
- People truly wanting to commit suicide often lie
- Remember the ABCs:
 - Airway Clear mouth & throat, gag reflex
 - Breathing O₂ saturation, ABGs
 - Circulation Venous access, IV fluids if shocked
- Assess GCS
- Examination

History

- When, what, how much ?
- Why?
- Circumstances
- PMHx, Drug history
- Psychiatric history
- Assess mental status and capacity

Management

- Supportive
- Monitor
- General
 - ↓ Absorption
 - ↑ Elimination

↓ Absorption

- Gastric lavage
 - Only if within 1 hour & life-threatening amount
- Activated charcoal
 - 50 g single or repeated dose (↑ elimination)

Problems

- ? follow the evidence based guide lines-
- ? aware of the guide lines
- Medical equipment and drugs are not available
- No trained health personnel

Forced Emesis

Pressure from the relations

Some strongly believe in
forced emesis

Charcoal is not available

Gastric Lavage

No consumables---- NG tubes

Health care workers are not
confidant

Not the traditional practice of the
Institution

Intubate when Transferring

last resort

Shortage of consumables

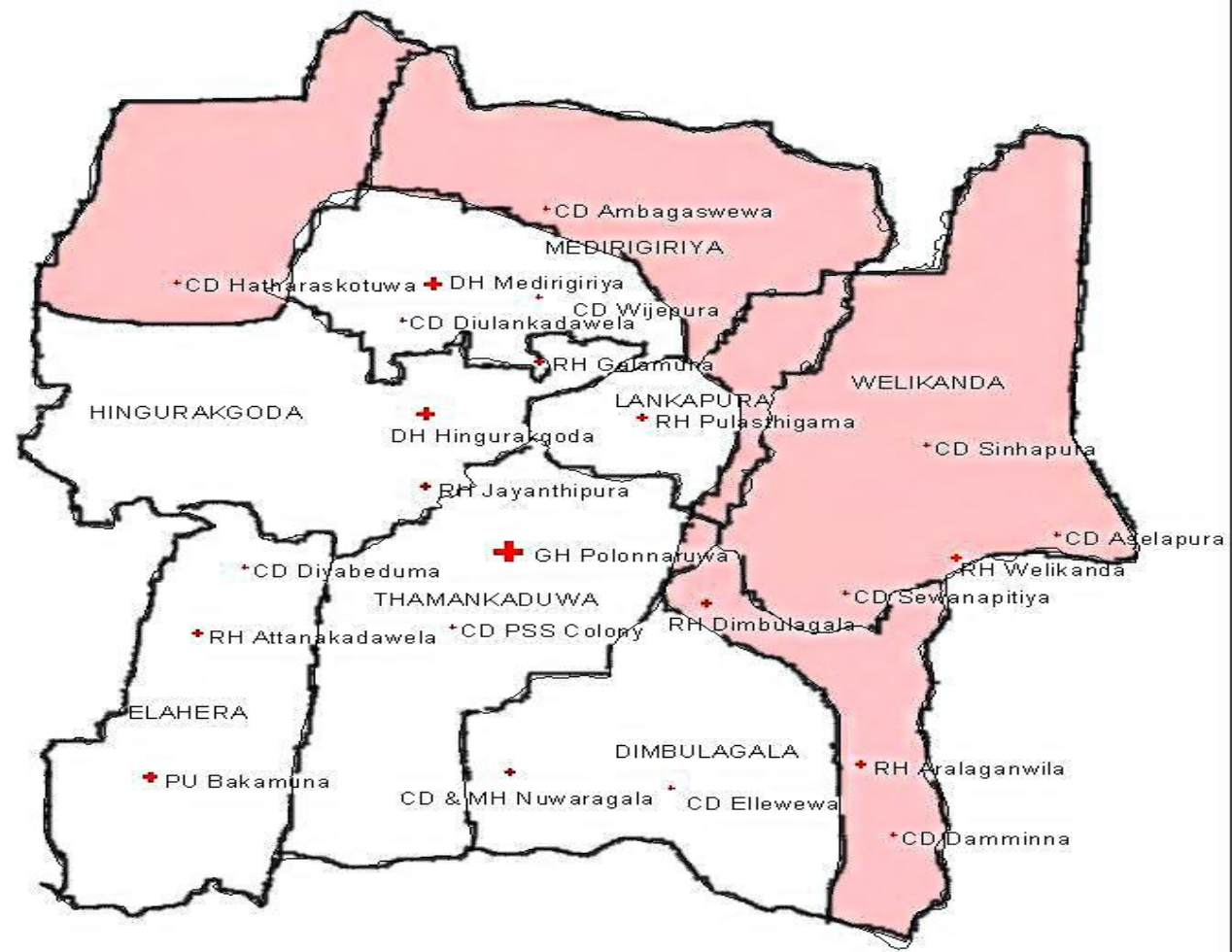
Not well trained

No Laryngoscope and intubation is possible only under direct vision

The Reality

- Unnecessary transfers--- Eg- Almost all Paracetamol Poisonings are transferred
- Necessary transfers are delayed





- Medical Institutions**
- + Central Dispensary
 - + CD & MH
 - + Rural Hospital
 - + Peripheral Unit
 - + District Hospital
 - + General Hospital
- DDHS Division
- Affected Area



District Map – Divisions, National Parks, Health Institutions, Water pools



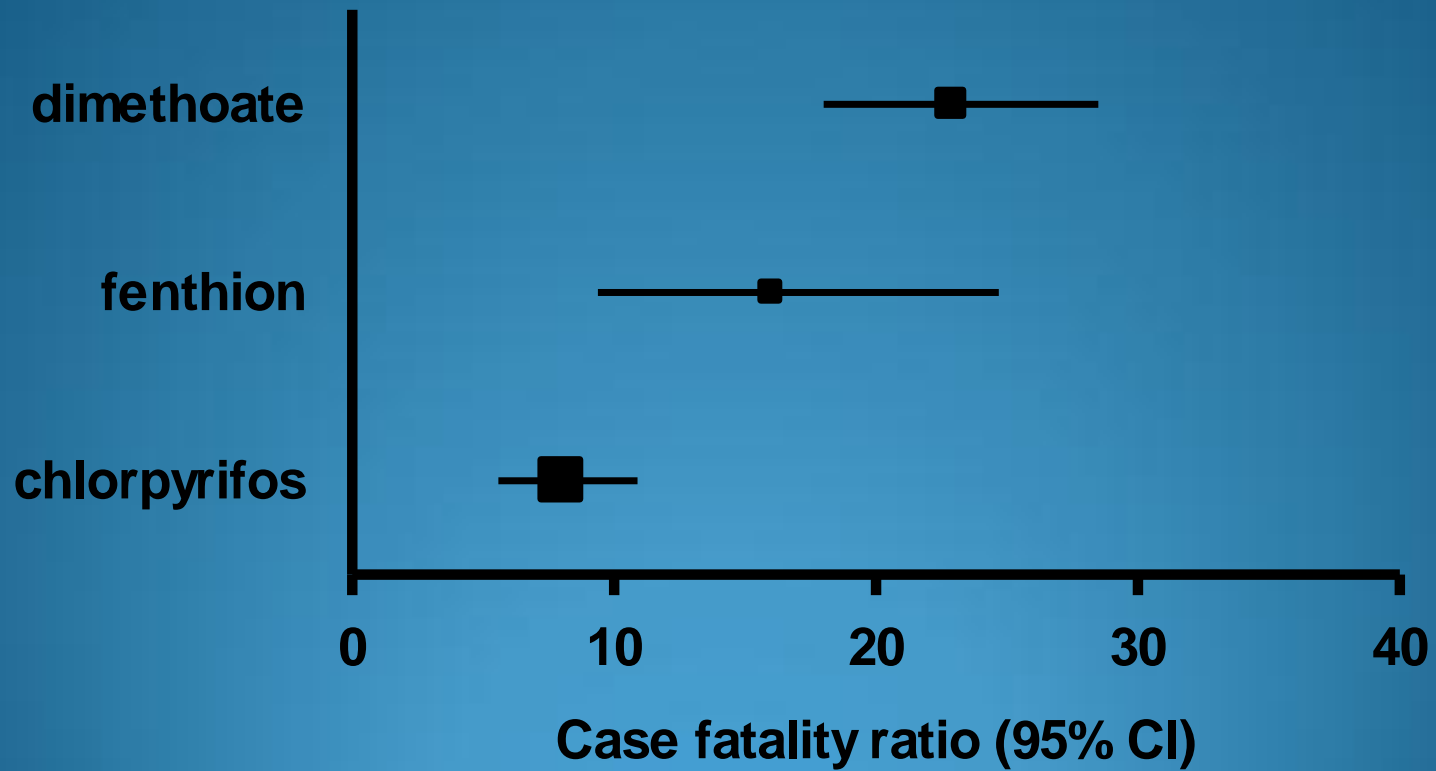
PESTISIDE REGULATIONS AND CHANGE IN THE EPIDEMIOLOGICAL PATTERN



Milestones on pesticide regulation in Sri Lanka (Withdrawals & Bans)

- Before 1980 – DDT, Endrin etc.
- 1980 – Arsenic, Aldrin etc.
- From 1991 to 1995 – class 1 Ops
 - Monocrotophos, methamidophos, dichloropropane etc.
- 1998 – Endosulfan
- ? 2006 – Dimethoate, Fenthion

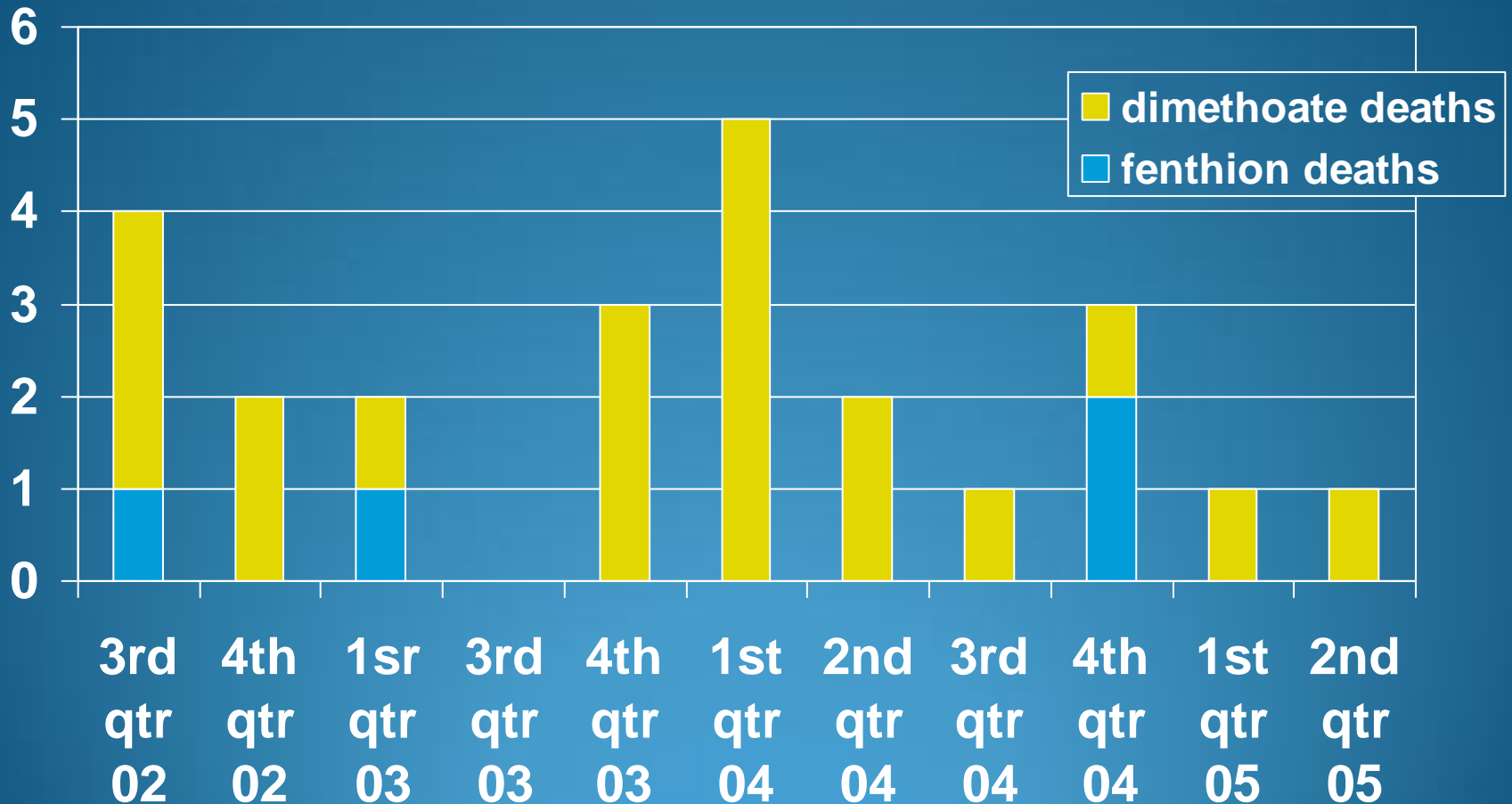
Human oral toxicity for the OPs



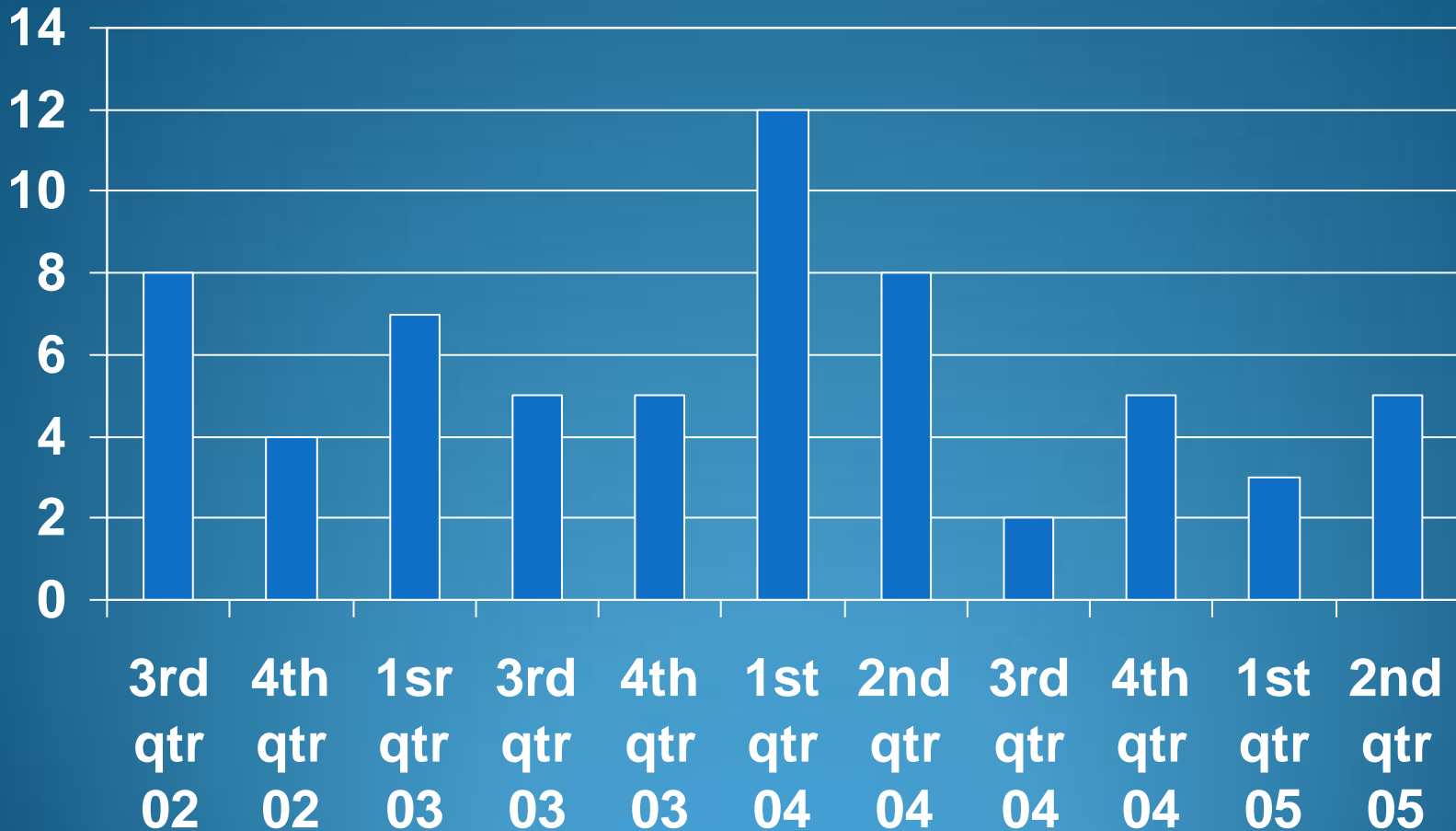
Fatality with different OPs

- Fatality rate
 - Chlorpyrifos 8.0%
 - Dimethoate 22.9%
 - Fenthion 31%

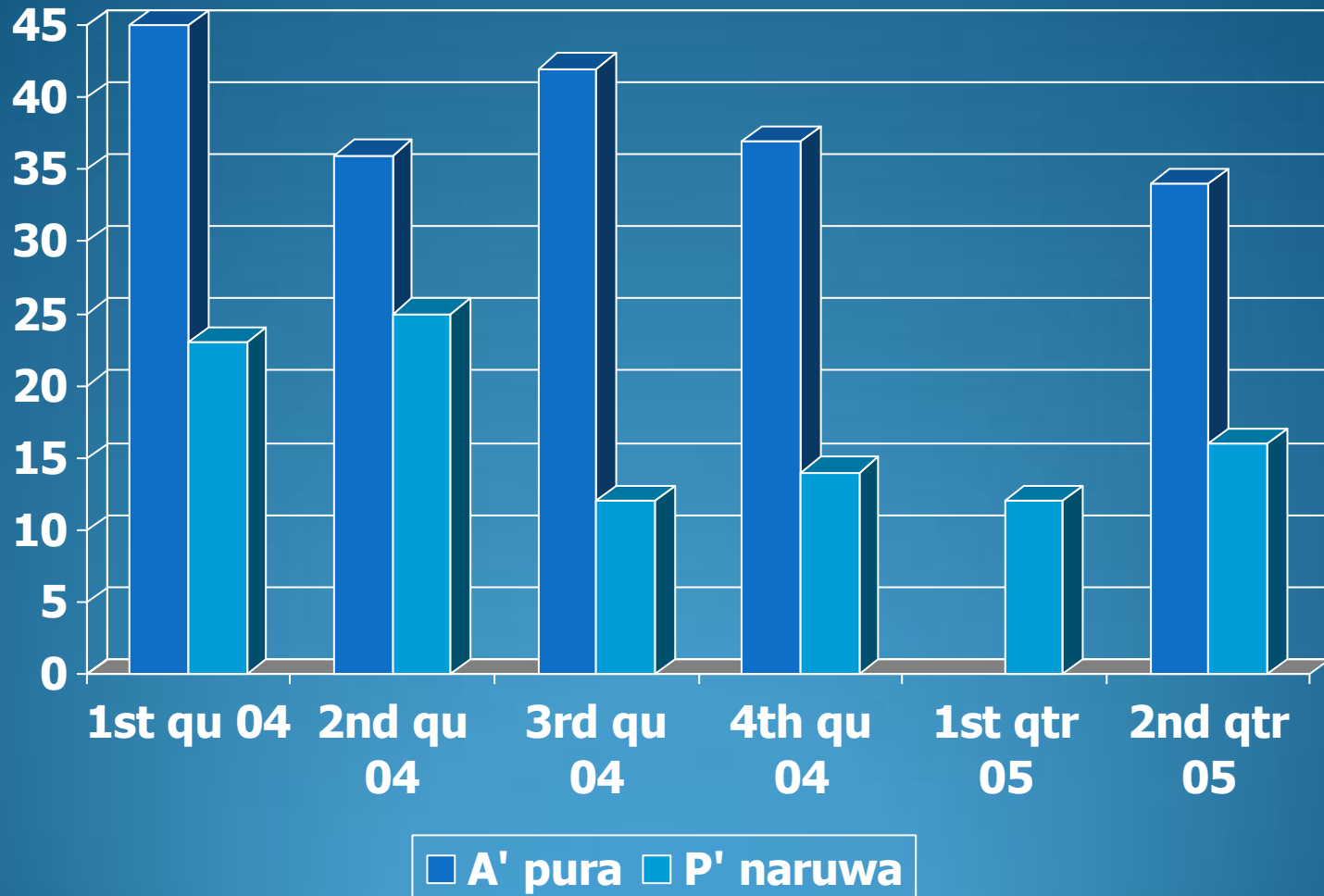
Total Fenthion, Dimethoate Deaths GHP (2002 July to 2005 June)



Total Organophosphate Deaths GHP (2002 July to 2005 June)



Deaths in Polonnaruwa & Anuradhapura 2004 & 2005

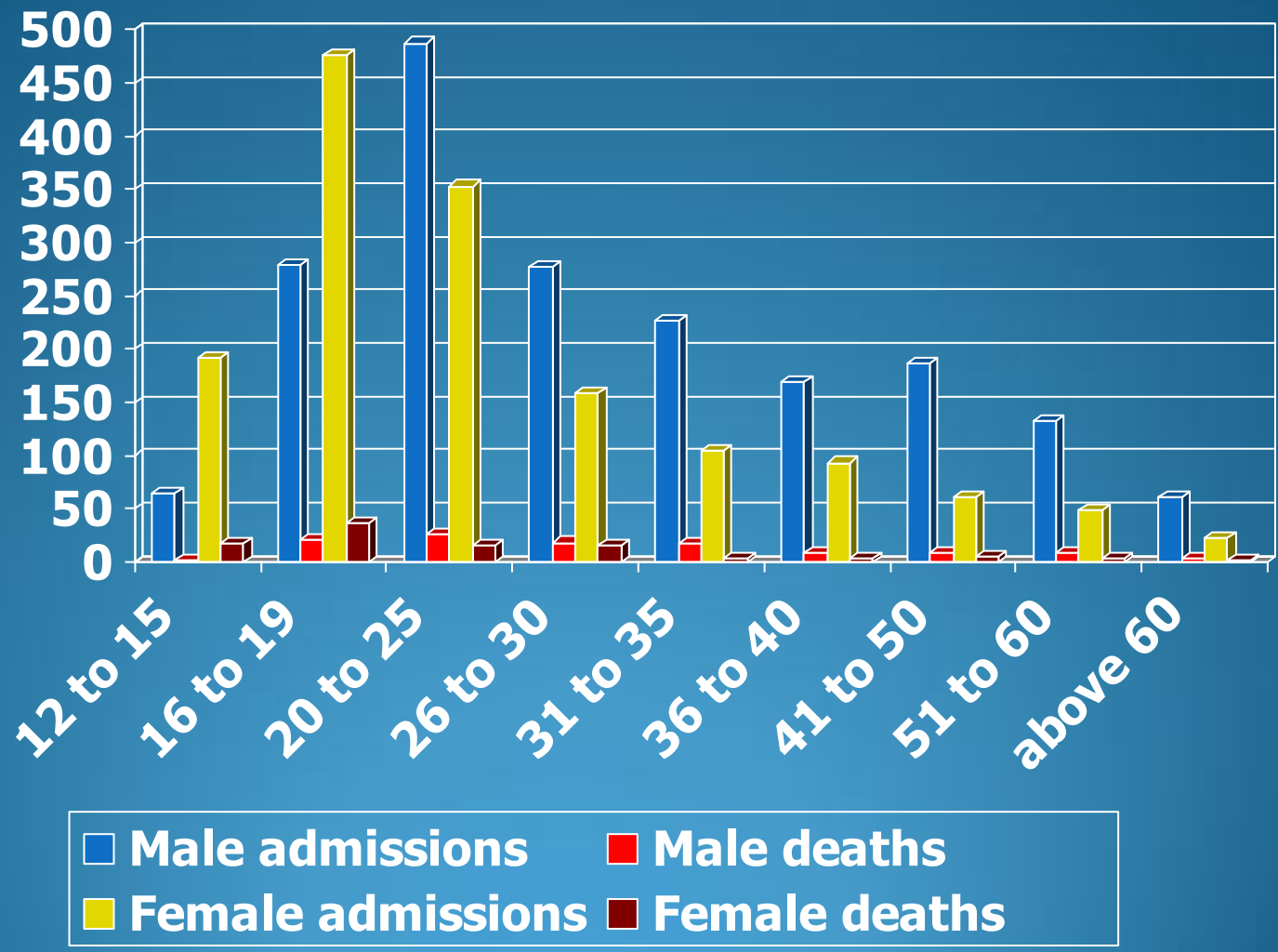


'Deliberate self harm'

Why do they do it?

- 100 consecutive patients were studied to find out the important characteristics and precipitating events
- Age group 13 to 75 years
- Average age 28.5 years
- Agents used
 - Oleander seed 34%
 - OP – 25%
 - Non OP agrochemicals – 22%
 - Paraquat – 1%
 - Drugs – 18% (PCM – 7%, Salbutamol – 3% other drugs – 8%)

Age distribution & deaths (September 2002 - June 2005)



(cont...)

- Educational status
 - Up to O/ L or more – 54%
 - Less than O/ L – 42%
 - No schooling – 4%
- Precipitating events
 - Domestic conflicts – 46%
 - Marital problems – 29% (M:F = 1:3)
 - Un successful love affairs – 10%
 - Serious economic constraints – 5%
 - Others – 5%

Cont...

- Marital status
 - Married 61%
 - Single 39%
- Agents used
 - Oleander seed 34%
 - OP – 25%
 - Non OP agrochemicals – 22%
 - Paraquat – 1%
 - Drugs – 18% (PCM – 7%, Salbutamol – 3% other drugs – 8%)

Cont...

- Level of pre – meditation
 - Planned – 4%
 - On impulse 96%
- Availability
 - Easy availability – 96%
- Consumption of alcohol in men
 - Consumed alcohol at least once in life – 80%
 - At the time of poison, drunk – 50%
 - Severe withdrawal syndrome – 10%

Cont...

- Motive
 - To frighten others – 38%
 - Intention to die – 37%
- Past attempts – 10%
 - Kaneru – 08
 - OP – 02

Reasons for self poisoning

- Inability to cope up with problems
- A form of threat to near relatives or loved ones (Communicating distress)
- Easy availability
- Alcohol related problems
- Deliberate self – harm is an “accepted” practice
 - ‘Trendy’, ‘fashionable’, ‘heroic’
- Psychiatric illnesses

How to minimize the intake of poisons

- Improving the storage of pesticides in the homes and the fields
- Restrictions on sales etc.
- Curb the use of alcohol
- Addressing social and financial problems
- Improve the coping skills in the community e.g. teenagers – improvement of life skills
- Pruning of 'Kaneru' trees

Acknowledgement

- Doctors
- Ward staff WD
- Dr. Michael Eddleston Prof Andrew Dawson & SACTRECT



PENGUIN CLASSICS

LEO TOLSTOY

Anna Karenina

Thank you



“We must be the change we wish to see in the world”

THANK YOU