Cancer Pain Management

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Definition

- Pain is an unpleasant and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.
- Pain is always subjective. Each individual learns the application of the word through experiences related to injury in early life.
- Pain is unquestionably a sensation in part or parts of the body but is also unpleasant and therefore an emotional experience.

Scope of the problem

- 53% all stages of disease
- 59% of patients on active anticancer treatment
- 64% of patients with metastatic, advanced or terminal disease
- 33% of patients who had been cured of cancer
- More than 33% graded pain as moderate or severe

van den Beuken-van Everdingen et al. 2007

Temporal assessment

❖ Acute pain	Recent onset, transient, identifiable cause
❖ Chronic pain	Persistent or recurrent pain, beyond usual course of acute illness or injury
❖ Breakthrough pain	Transient pain, severe or excruciating, over baseline of moderate pain

Acute pain

- Relief occurs with healing
- Symptomatic measures are curative
- Anxiety decreases with treatment
- Minimal changes occur in behaviour, environment and family dynamic

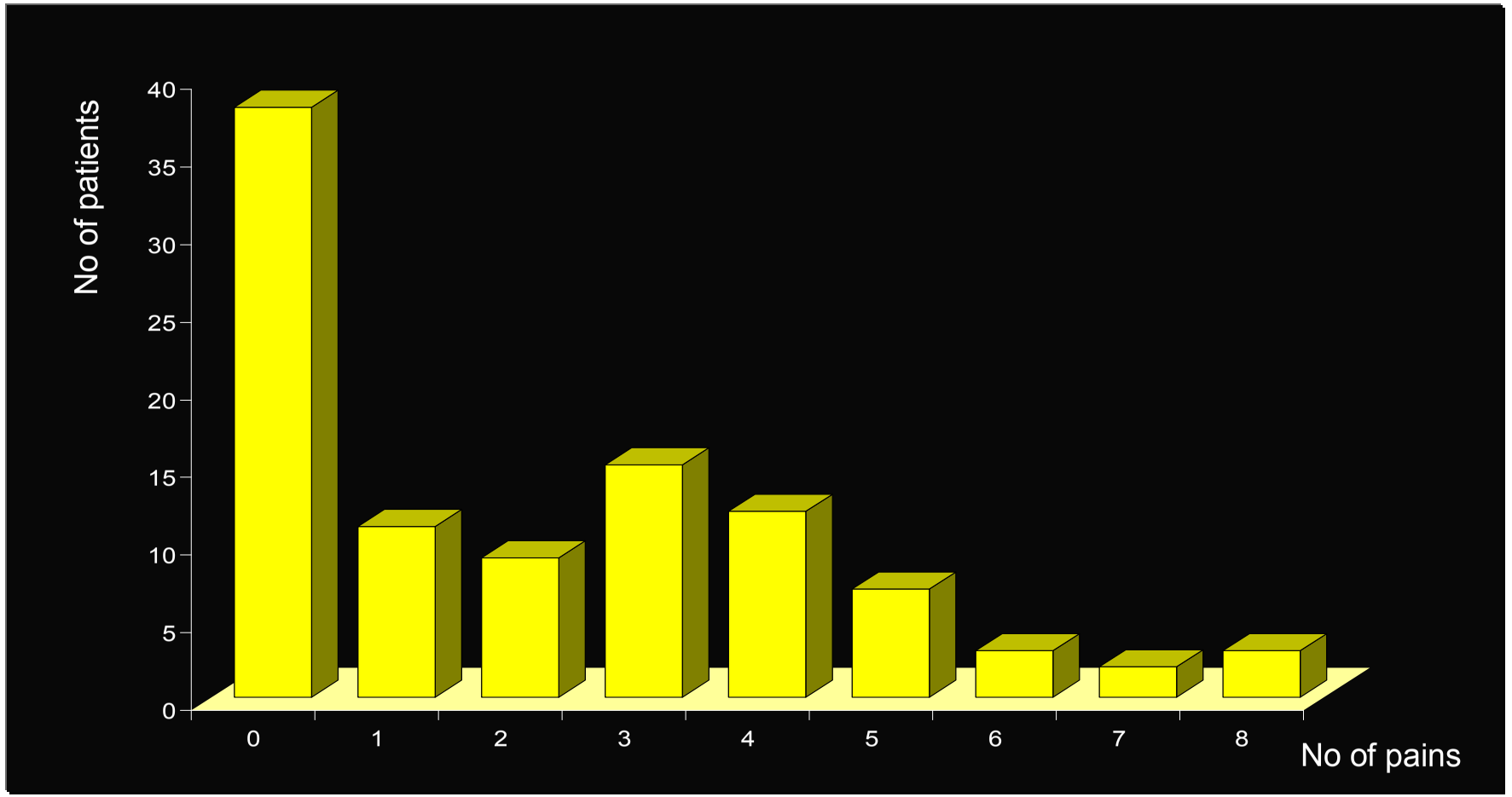
Chronic Pain

- Persists or recurrent pain
- Multiple treatments may not help
- Multiple psychological problems include anxiety and depression
- Significant changes likely in behaviour, environment and family dynamics

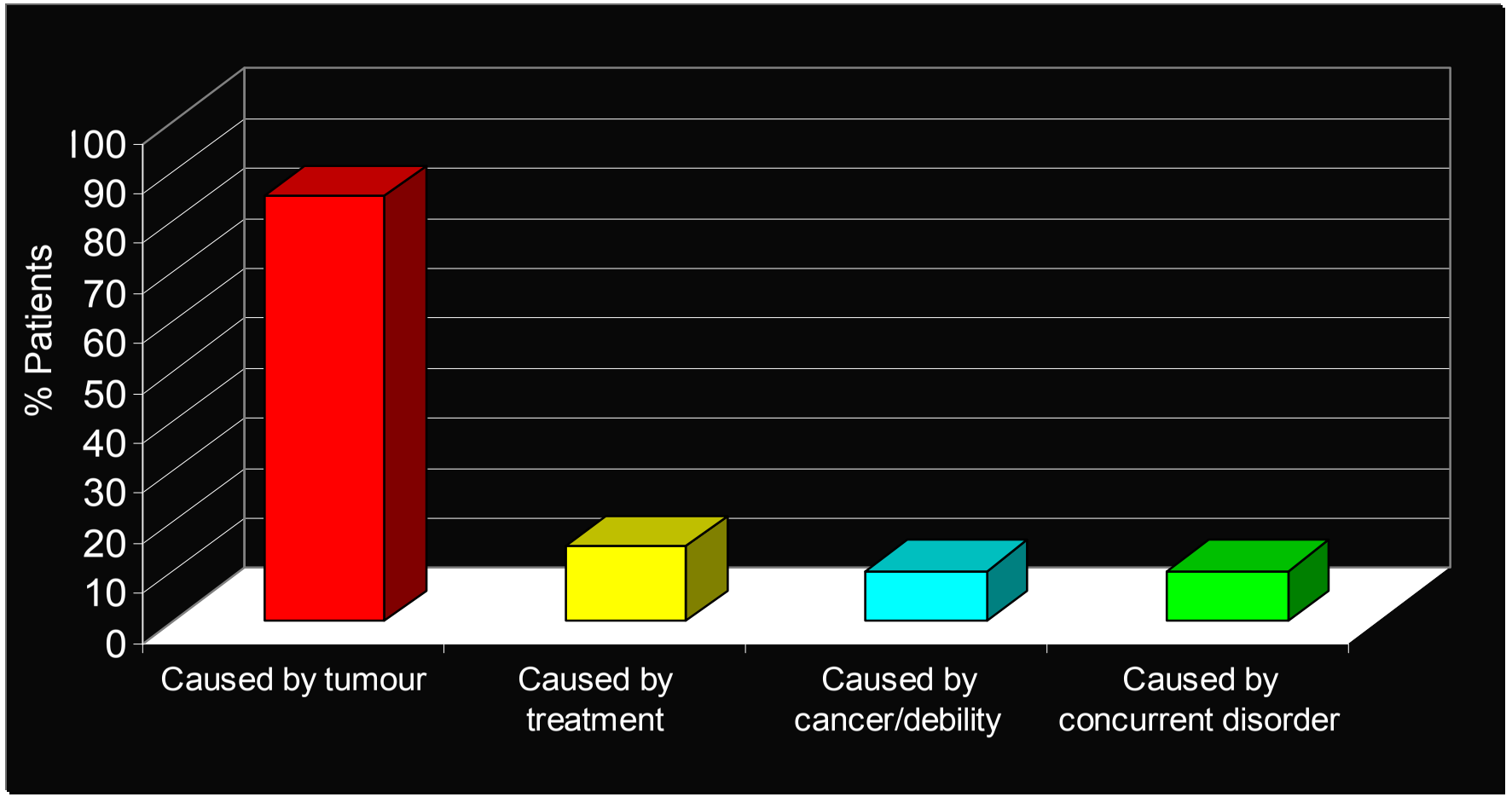
Pathophysiology

	Characteristics	Mechanisms	Examples
Somatic	Constant, aching, gnawing. Well localised	Activation of nociceptors in cutaneous or deep tissues	Skin metastases
Visceral	Constant, aching, poorly localised often referred	Activation of nociceptors due to infiltration compression	Pancreatic cancer Lung/liver metastases
Neuropathic	Paroxysmal, shooting or shock-like pain . Background of burning or constriction	Spontaneous and paroxysmal discharges in PNS and CNS	Tumour compression Post-surgical incision

Multiple Pains



Aetiology


% Patients
100
90
80
70
60
50
40
30
20
10
0
Caused by tumour
Caused by treatment
Caused by cancer/debility
Caused by concurrent disorder

Assessment

- Site
- Quality
- Exacerbating factors
- Relieving factors
- Temporal patterns
- Exact onset
- Associated symptoms
- Interference with activities of daily living
- Response to analgesics

Assessment Tools

- Pain charts
- Visual analogue scales
- Pain diaries
- Questionnaires

Clinical Barriers

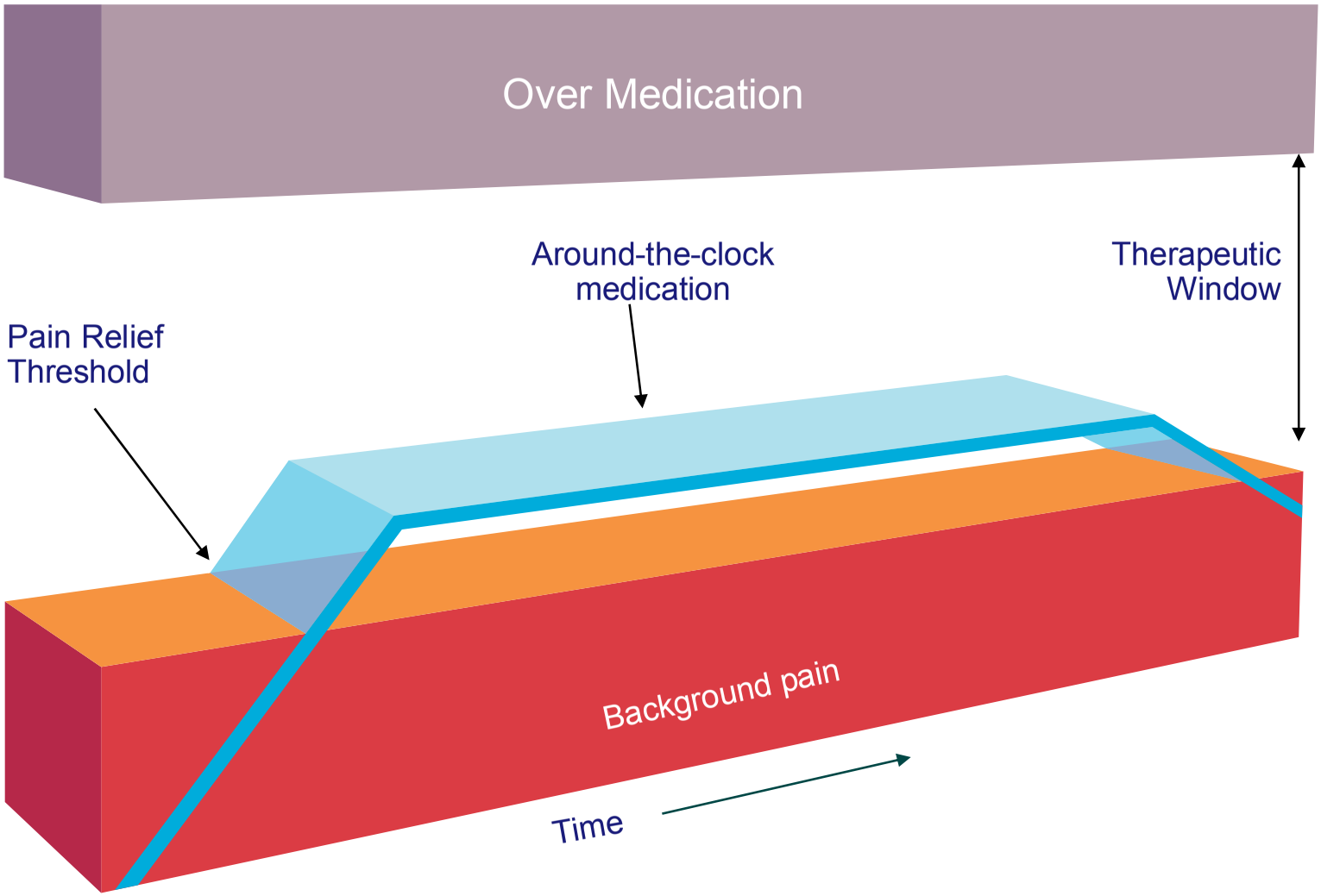
- Lack of pain training in medical school
- Insufficient knowledge
- Lack of pain-assessment skills
- Rigidity or timidity in prescribing practices
- Fear of regulatory oversight

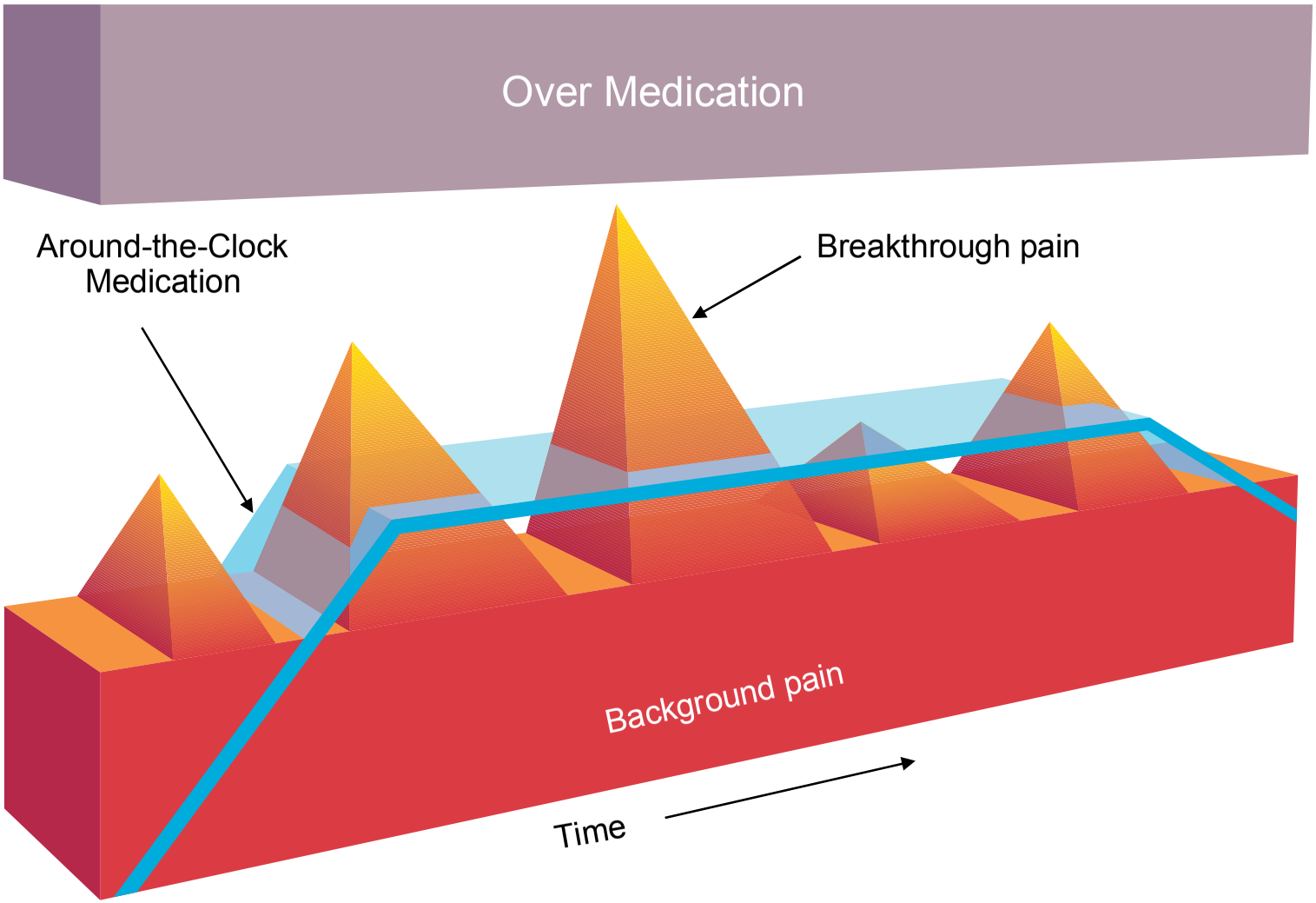
Patient Barriers

- Reluctance to report pain
- Reluctance to take opioid drugs
- Poor adherence

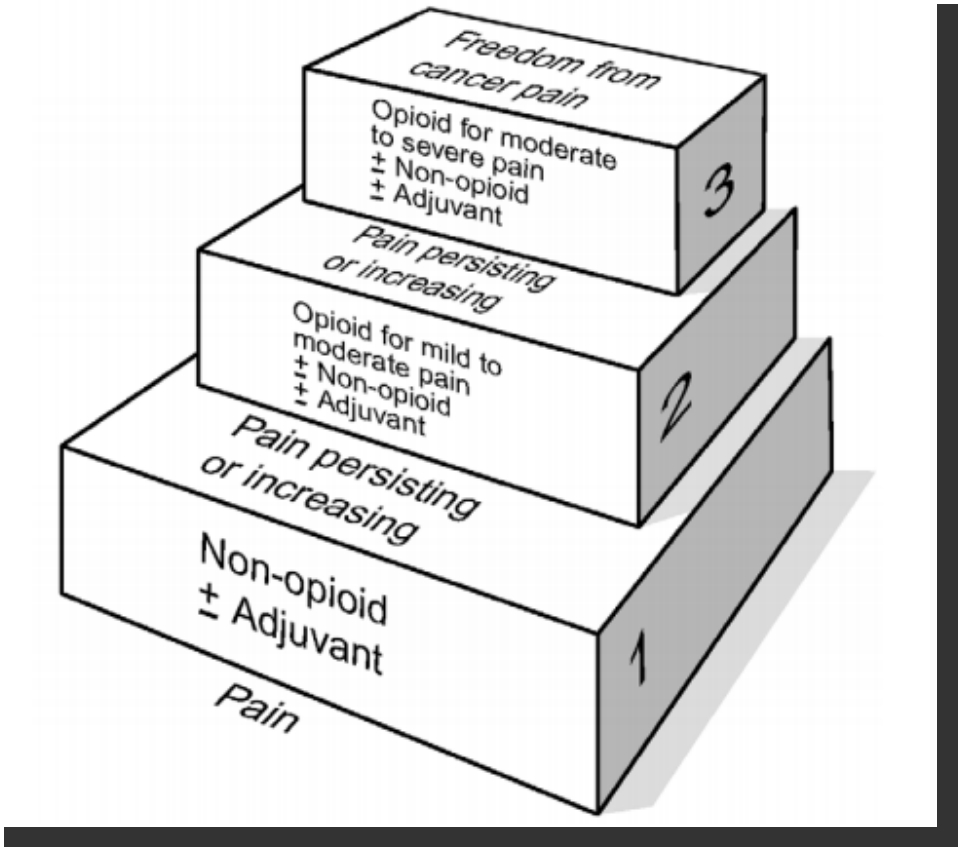
Health Service Barriers

- Low priority given to symptom control
- Lack of treatment guidelines
- Unavailability of opioid analgesics
- Inaccessibility of specialized care


Over Medication
Around-the-clock
medication
Therapeutic
Window
Pain Relief
Threshold
Background pain
Time


Over Medication
Around-the-Clock Medication
Breakthrough pain
Background pain
Time

WHO Ladder


Freedom from cancer pain
Opioid for moderate to severe pain
± Non-opioid
± Adjuvant
3
Pain persisting or increasing
Opioid for mild to moderate pain
± Non-opioid
± Adjuvant
2
Pain persisting or increasing
Non-opioid
± Adjuvant
Pain
1

WHO Ladder

- Simplicity - in choice of analgesics
- Simplicity - in choice of non-invasive route
- Individualisation of dose - particularly of strong opioid
- Continuous pain requires continuous medication
- Use of adjuvant analgesics
- Treatment of adverse events to allow adequate dose titration

Step 1

Aspirin

- adults 600mg 4 - 6 hourly
- oral or rectal administration
- major adverse events: GI disturbance

Paracetamol

- 0.5-1g 4 - 6 hourly
- oral and rectal administration
- major adverse event: liver damage in overdose

Step 2

Opioid	Mu	Kappa	Delta
Codeine	a	?	?
Tramadol	a	a	a
Morphine	A	a	a
Fentanyl	A+	a	a
Oxycodone	A	A	?
Hydromorphone	A	a	a
Methadone	A	O	A
Naloxone	X	X	X

Step 2 opioids

- Codiene
- Dihydrocodeine
- Tramadol
- Buprenorphine
- Non-opioid combinations

Morphine

- First introduced into clinical practice 200 years ago.
- Well absorbed by all routes of administration
- Highly variable oral bioavailability
- Recommended as the opioid of first choice by EAPC
- Starting dose 5 -10mg 4 hourly
- Increase dose by 25-50%
- Take into account pain severity and extra medication

Morphine

- Convert to modified release once pain is controlled
- 12 hr and 24 hr preparations available
- For 12 hr preparation give half the total 24hr requirement twice daily
- 20mg morphine 4 hourly ≡ 60mg twice daily
- Remember rescue medication
- Four hourly dose or equivalent recommended
- 20mg when required

Fentanyl

- Synthetic opioid agonist first introduced 1960
- Mu agonist; minor effects at kappa and delta
- More potent than morphine
- Anaesthetic agent
- Duration of action 1 - 2 hours
- Low molecular weight and high lipid solubility

TD Fentanyl

- 12, 25, 50, 75 and 100 mcg/hr
- Analgesia usually lasts for 72 hours
- Effective for cancer and non-cancer pain
- Less constipating than morphine

Conversion Chart

q4h morphine (mg)	TD Fentanyl (mcg/h)	q24h morphine (mg)
< 20	25	< 90
20-25	37	90-130
25-35	50	135-189
35-40	62	190-224
40-50	75	225-314
55-65	100	315-404

Step 3

- Oxycodone
- Hydromorphone
- Methadone

Conversion Chart

Morphine q24h	Fentanyl TD	Morphine q4h	Oxycodone q4h	Hydromorphone q4h
30mg	25mcg/h	10mg	5mg	1.3mg
60mg	37mcg/h	20mg	10mg	2.6mg
90mg	50mcg/h	30mg	15mg	3.9mg
120mg	62mcg/h	40mg	20mg	5.2mg
150mg	75mcg/h	50mg	25mg	6.5mg
180mg	100mcg/h	60mg	30mg	7.8mg

Adverse Effects

- Constipation
- Drowsiness
- Hallucinations
- Myoclonus
- Urinary retention
- Nausea
- Vomiting
- Confusion
- Pruritus

Unfounded Fears

- Sedation
- Tolerance
- Respiratory depression
- Dependence

Managing Adverse Effects

- Reassess pain
- Dose reduction of systemic opioid
- Symptomatic management of adverse effects
- Consider adjuvant analgesics
- Switch opioid

Managing Adverse Effects

- First synthesized in 1874
- Semi-synthetic analogue of morphine
- More soluble and lipophilic than morphine
- Doses up to 250mg/ml can be given SC

Indications

- Persistent nausea and/or vomiting
- Dysphagia
- Intestinal obstruction
- Coma
- Poor absorption of oral drugs

Palliative Therapies

- Nerve blocks
- Neurostimulation
- Neuroablative
- Radiotherapy
- Chemotherapy
- Surgery

Summary

- Cancer pain is common
- Management based on assessment
- 80% of pain can be controlled using WHO ladder
- Adjuvant analgesics can be used at each step
- Numerous drugs, diverse classes, sequential trials
- Palliative treatments
- Palliative procedures
- Review!!