

Pitfalls in Acute Pain Management

C Hearty

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Overview

- Chronic Pain Vs Acute Pain
 - Pharmacology
 - Interventional
 - Psychological
- Cancer Pain

Introduction

- Incidence
- Ireland 35.5 % 12% not working due to pain (Raftery, Sarma et al. 2011)
- Cost 2.86 % GDP 5.34 Billion 5% account for 26% of costs (Raftery, Ryan et al. 2012)
- Europe 19%(Breivik, Collett et al. 2006)
- Worldwide 20% (Blyth, March et al. 2001)

Pain Medicine

- Pain as a disease (Siddall and Cousins 2004)
- Specialty recognition
- Australia
- New Zealand
- Ireland
- Europe?
- Now an epidemic in the US

Chronic Pain assessment

- Predisposing
- Precipitating
- Perpetuating
- Aggravating

Painful stimulus → **Acute pain** → Gets better



multiple therapists
multiple investigations
multiple medications / operations
legal / workcover involvement

ANXIETY, DEPRESSION, FINANCIAL HARDSHIP,
DRUG DEPENDENCE, FAMILY DISHARMONY



CHRONIC PAIN

Management

- Education
- Patients
- Professional
- Family members
- Team approach

Management

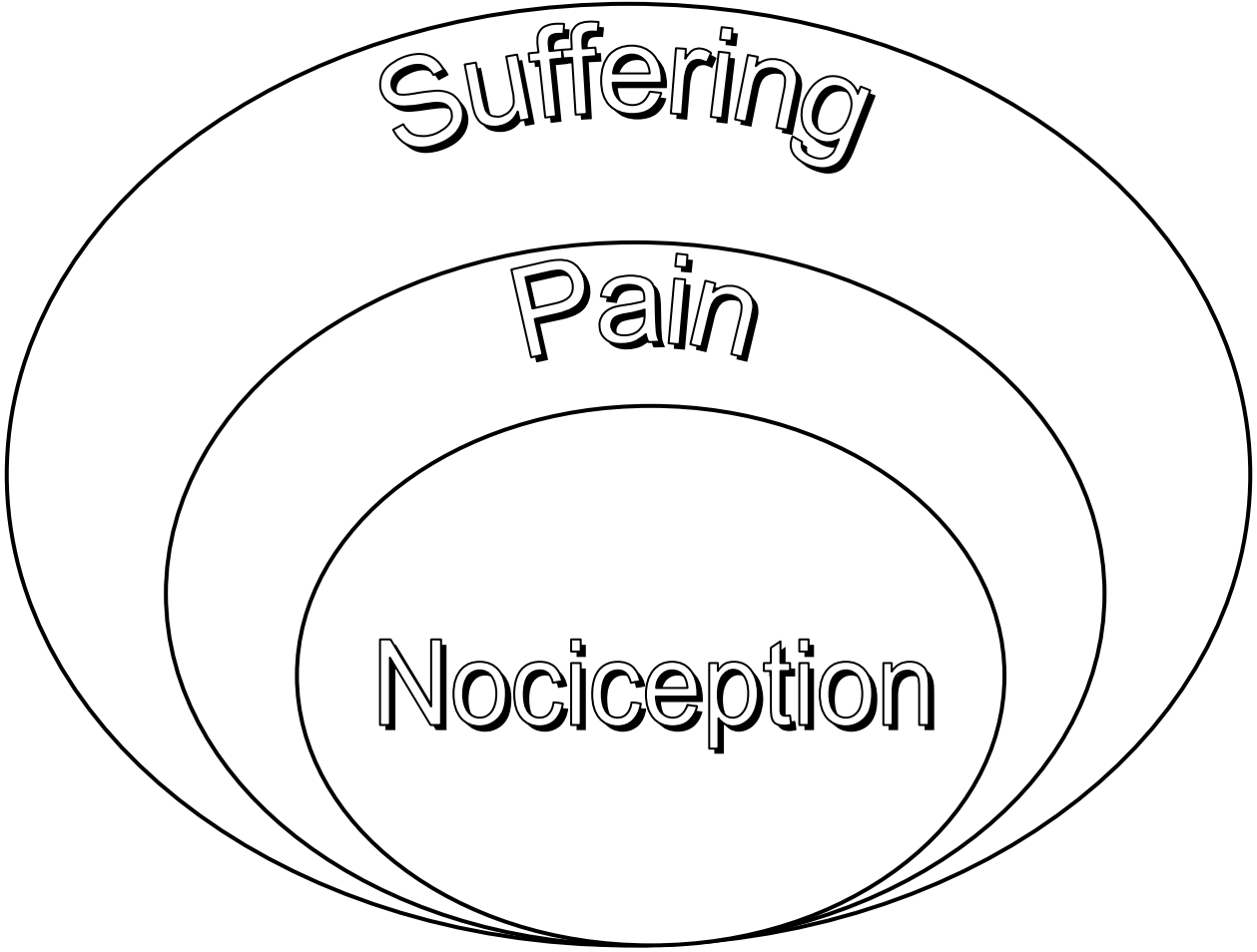
- Barriers
 - Patient
 - “There must be something wrong”
 - “ I wish they found cancer then I would get treatment”
 - “you are supposed to cure pain”
 - Professional
 - Dismissal
 - Psychological
 - Education

Avoiding Pitfalls

- Find out why the patient is here
- What do they want
- What are their expectations
- ACT-UP
 - Activities How is pain affecting your life
 - Coping how do you cope or deal with your pain
 - Think do you think your pain will ever get better
 - Upset have you been feeling worried
 - People how do other people respond when you have pain

Psychological assessment

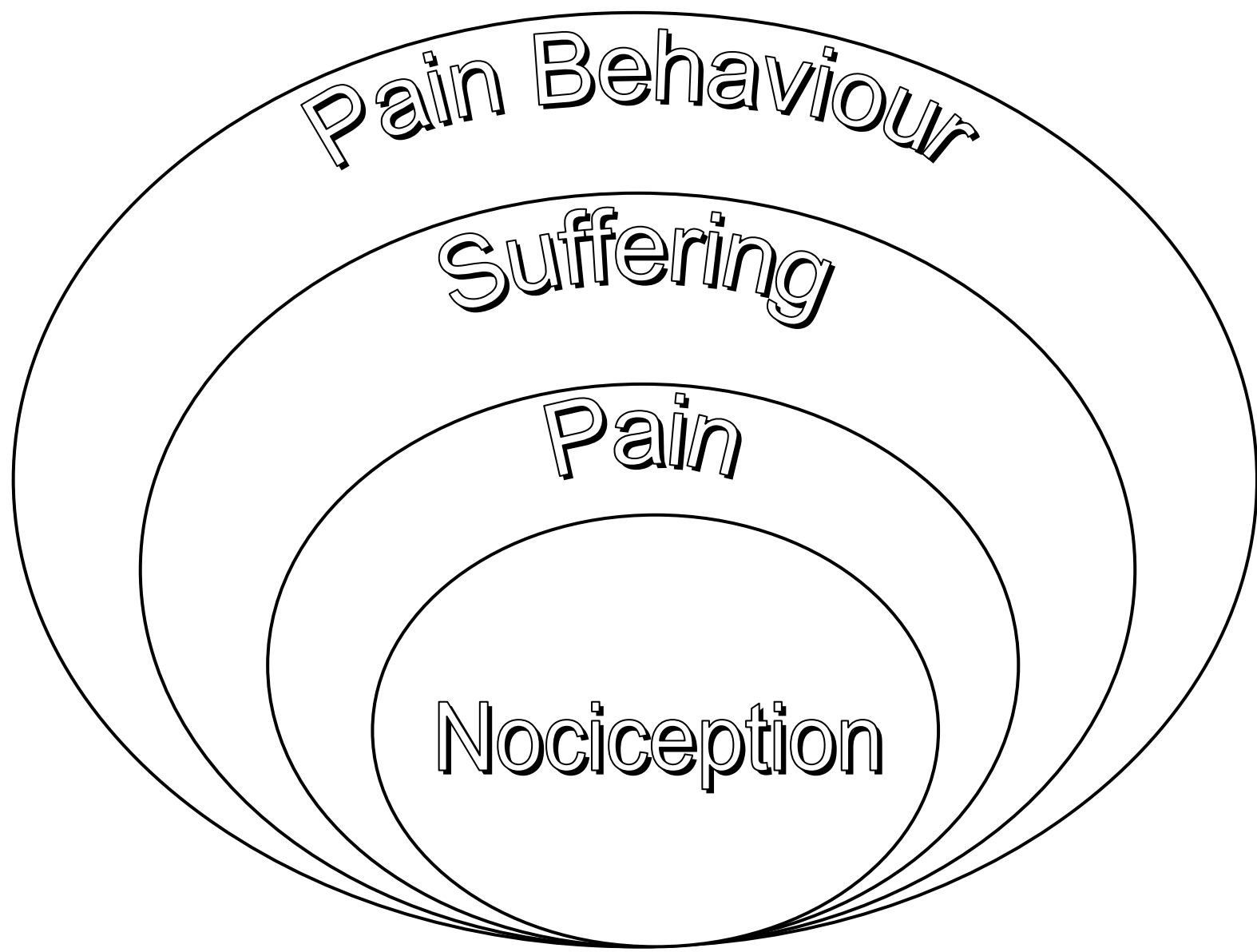
- COPING
- Understanding
- Therapy
 - Attention
 - Learning and Memory
 - Beliefs and Thought processes



Suffering

Pain

Nociception

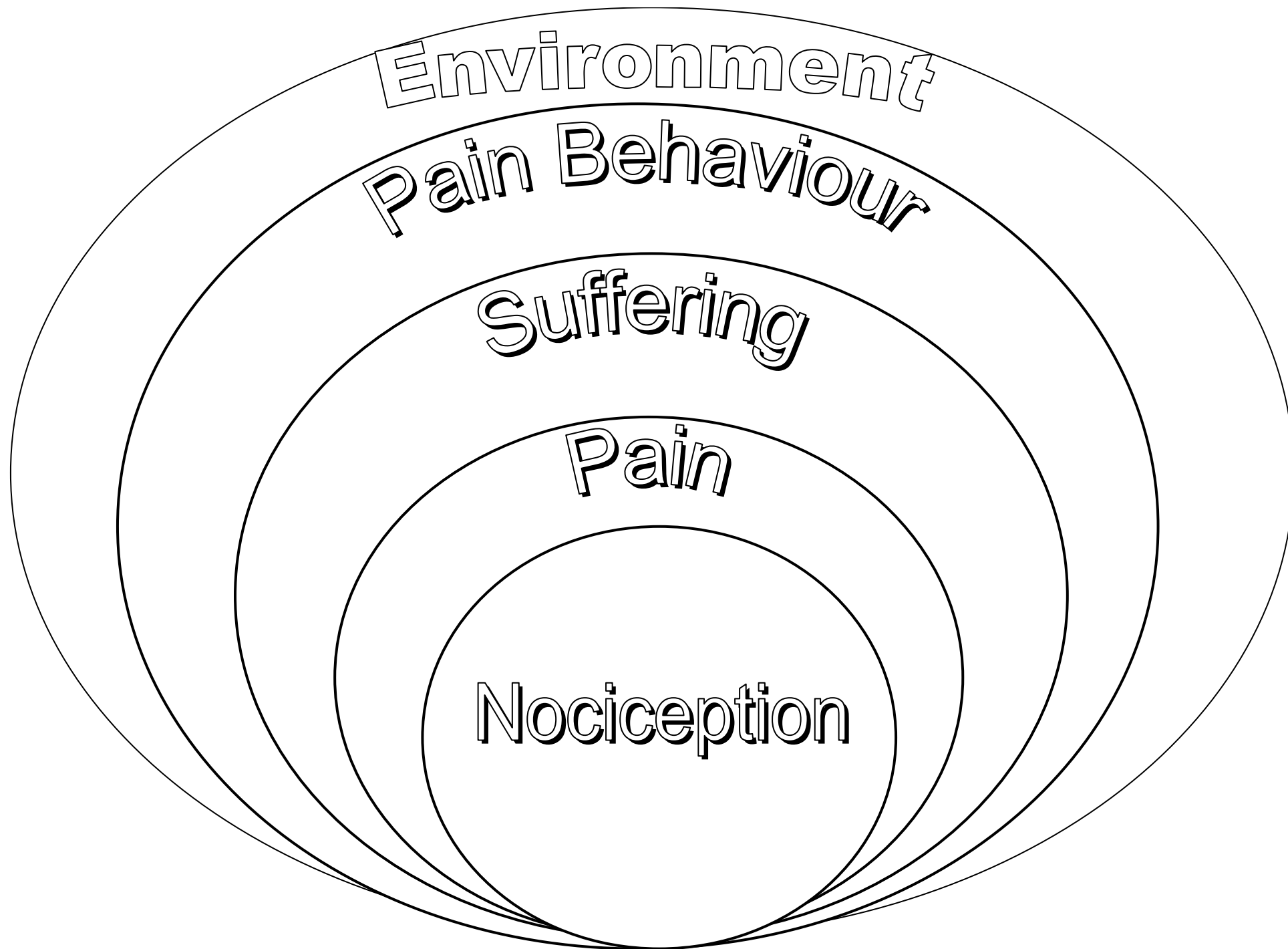


Pain Behaviour

Suffering

Pain

Nociception



Environment

Pain Behaviour

Suffering

Pain

Nociception

Understanding pain

- Lorimer Moseley

Central sensitization

- (Woolf 1983)(Woolf 2011)(Woolf 2014)

SENSITISATION – PNS / CNS.

Peripheral:

- Decrease stimulus needed.
- Windup - increase receptor field.

Central:

- Spinal cord sensitised.
- New receptors activated - NMDA.
- A_{β} nerves grow.
- Decrease threshold.

Evidence
NEUROPLASTICITY,
shows chronic pain
not
“in their mind”.

The PFC-limbic-brainstem (BrSt) pathways is involved in the descending modulation of pain.

Lee M C , and Tracey I Br. J. Anaesth. 2013;111:64-72

Distribution of blood concentrations.

OxyContin

Association between dose and blood concentration.

75% of samples are in the range 0.5 to 4.3 ug/l.

Note: There have been a few spuriously high fentanyl levels, eg > 15 ug/l. As yet we don't know why.

Rule of thumb: Median blood concentration associated with 100 mg/day is 40 ug/l.
Distribution of blood concentrations.

% of oxycodone concentrations are in the range 13 - 130 ug/l.

Note: Oxymorphone concentrations are usually < 3 ug/l. It is at present unclear whether oxymorphone contributes to analgesia.

Transdermal Fentanyl

Association between dose and blood concentration.

Rule of thumb: Median blood concentration from a 100 ug/h patch is 1.6 ug/l

opioids

- AAAA(Passik, Kirsh et al. 2004)
- Analgesia (pain relief)
- Activities of Daily Living (psychosocial functioning)
- Adverse effects (side effects)
- Aberrant drug-taking (addiction-related outcomes)

The “ideal” trial

- Therapeutic relationship
- Functional outcome targeted
- Time-limited trial
- Exit plan

Tylenol 8/day = Morphine 40mg/day
= opioid trial

Wrong patients ?

- Younger patients
- History of dependency
- High levels of distress
- Vague diagnosis
- Lack of access to alternative options

New concepts in opioids

- Neuro-endocrine effects
- Opioid-induced Pain Sensitization
- Dose stratification
- Urine and blood level monitoring
- Drug rotation
- Driving and opioids
- Prescription opioid related deaths

Opioid neuroendocrine effects

- Suppression of pituitary-hypothalamic axis (overnight onset following intrathecal administration)
- Weight-gain and fluid retention
- Hypotestosteronism and amenorrhea
- Osteoporosis?

Opioid-induced Pain Sensitization

- Prolonged opioid intake reduces pain thresholds
- Dual agonist and antagonist receptor effect
- “Cold pressor” test validated
- Evidence-based rationale for dose reduction
- Difficult to differentiate from tolerance

Opioid dose stratification in complex persisting pain

Low

- Morphine or equivalent 60mg/day

Moderate

- Morphine or equivalent 60-120mg/day
- Prescriber benefits from 2nd opinion

High

- Morphine or equivalent > 120mg/day
- Pain unit input

Chemical Coper

- Term first coined by Bruera and colleagues in the palliative care setting
- Often patients with history of alcohol or substance abuse
- Had tendency to somatize end of life related stress and distress
- Felt globally bad
- Received unusually high number of centrally acting meds
- Tendency to become delirious secondary to over-medication
- Khantzian has referred to substance abusers as
- Engaging in self medication
- Having de-differentiated affective arrays

Addiction vs CC

- Probably more predictive
 - Selling prescription drugs
 - Prescription forgery
 - Stealing or borrowing another patient's drugs
 - Injecting oral formulation
 - Obtaining prescription drugs from non-medical sources
 - Concurrent abuse of related illicit drugs
 - Multiple unsanctioned dose escalations
 - Recurrent prescription losses
- Probably less predictive
 - Aggressive complaining about need for higher doses
 - Drug hoarding during periods of reduced symptoms
 - Requesting specific drugs
 - Acquisition of similar drugs from other medical sources
 - Unsanctioned dose escalation 1–2 times
Unapproved use of the drug to treat another symptom
 - Reporting psychic effects not intended by the clinician

Acute Pain --- Timing

- Paracetamol
- NSAID
- Opioids
 - Preparation, route, duration
- Clonidine
- Lidocaine
- Ketamine
- Regional
- Intrathecal
- Steroids

Acute Pain

WHO Ladder

Who for?

History of the ladder

- 1980 – WHO establishes Cancer Control Programme
 - Cancer prevention
 - Early diagnosis with curative treatment
 - Pain relief and palliative care
- 1986 – ‘Method for relief of cancer pain’
- 1996 – revised edition published

History of the ladder

- Best regarded as a framework of principles and not a rigid protocol
- Advocates analgesia:
 - By the mouth, by the clock, by the ladder
 - Individualised to patients
 - Attention to detail
- Put oral opioids on the map

WHO ladder in practice

- Common mis-interpretations:
 - starting at step 1 for moderate to severe pain
 - assuming that the ladder is restricted to opioids
 - rotating around analgesics at steps 1 or 2 despite inadequate pain relief

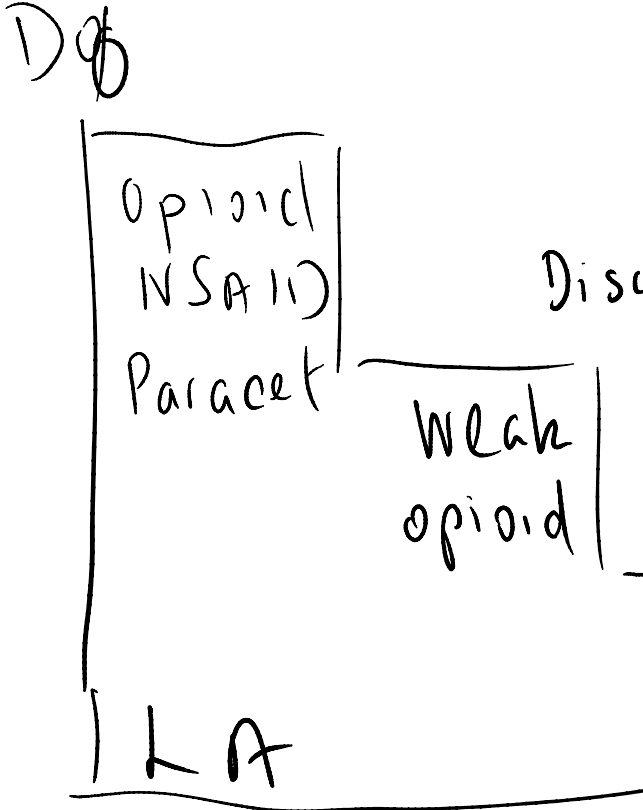
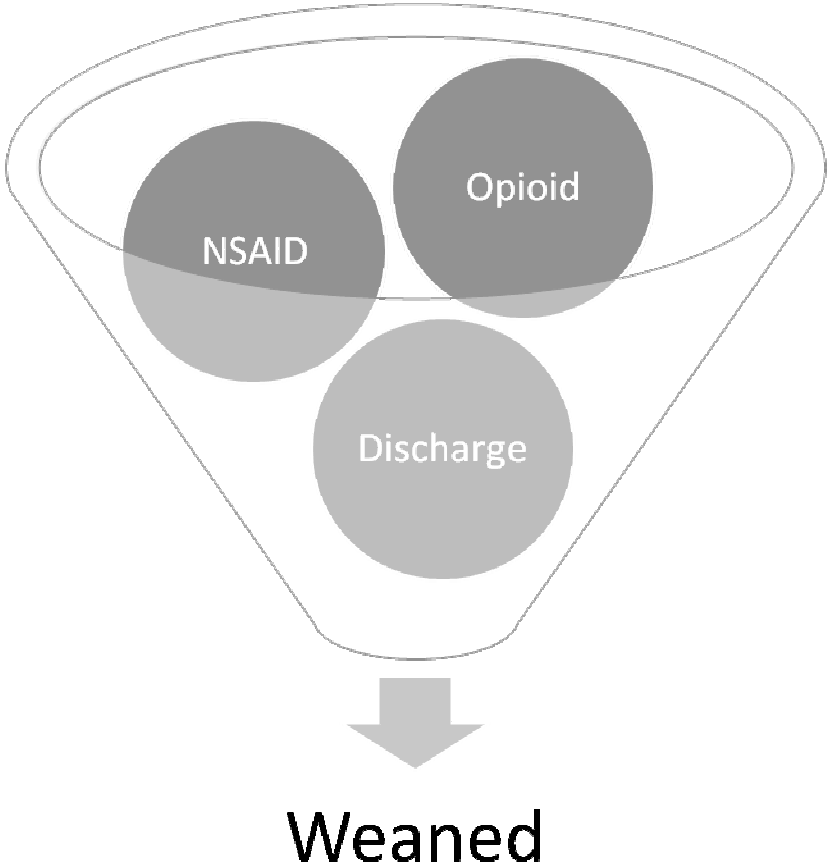
WHO ladder in practice

- Analgesics are the cornerstone of good cancer pain management
 - in contrast to management of non-cancer chronic pain
- But reducing barriers to pain management also important
 - educating patients and carers
 - access to medicines
 -*more on these aspects another time!*

Reverse analgesic ladder

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Reverse analgesic ladder



NNT for Opioids

The analgesic (painkiller) effects of opioids are due to decreased perception of pain, decreased reaction to pain as well as increased pain tolerance. The side effects of opioids include sedation, respiratory depression, constipation, and a strong sense of euphoria.

NSAID

- Under development to address GI and CVS complication
- Hydrogen Sulphide
- Naproxcinod - NO
- Intraarticular extended release
- Nanoformualtion of submicron particles