32 Prehospital

Field Amputation

Indications

- entrapped extremity where extrication will:
  1. not occur rapidly & unstable
  2. not occur rapidly & danger to move object
  3. be prolonged

Procedure

- PPE
- Tourniquet
- Sterile field
- Scalpel to bone
- Gauze under bone & blunt dissect
- Giggly saw
- Scalpel or scissors for the rest
- Saline soaked gauze & crepe
- Extra tourniquet/direct pressure if bleeding
- Plastic bag & bring limb

33 Retrieval

Transport Options

< 300km	> 300km	Other
- Road	- Fixed wing	- Boat
- Rotary		- Private

Pros	*Cons*
range, speed, escort, access, cabin size/pressure	

Fixed Wing	
- Long range	- Slowest response
- Fastest	- No access
- Mod cost	- scene
- Mod weather	- hospital
- Parent escort ok	- Turbulence
- Compressible to 1ATA	

Road	
- Fast response	- Slow
- Low cost	- Max 200km
- Good access	
- Mostly ok altitude	
- Parent escort ok	

Rotary	
- Winch access	- High cost
- Site-to-site often	- Max 400km
- < 300km	- Longest response
- Good access	- Cabin space
- Faster	- No compression

Preparation for Transport

Does this patient require retrieving?

Patient stability

- Airway safe & secure
- Breathing: enough O_2
- Circulation: enough access, spare, secure

Equipment

- Drugs
- Spare batteries
- Fluids

Communication

- Pilot happy with flying conditions
- Family aware
- Receiving hospital aware

34 Disaster

Phases of Disaster Management

1. Prevention
2. Preparedness
3. Response
4. Recovery

Response to Major Incident

Number of casualties overwhelms resources, CSSCATTT

Command & Control

- Movement in & out
- Gold: Strategic ***beyond*** site of incident
- Silver: tactical ***around*** site of incident
- Bronze: operation ***at*** site of incident

Site arrangement

a) ***Forward command post***
b) ***Patient collection/treatment/transport***

1. Forward command post: near site, EMS reps, co-ordinate & respond back
2. Casualty collection area: safe area eg upwind, uphill, patients triaged
3. Patient treatment post: re-triaged, basic medical care
4. Walking wounded site: last to be transported mass transport e.g. bus
5. Ambulance holding/loading points
6. Helicopter landing zone

Safety

- Staff
- Situation
- Survivors

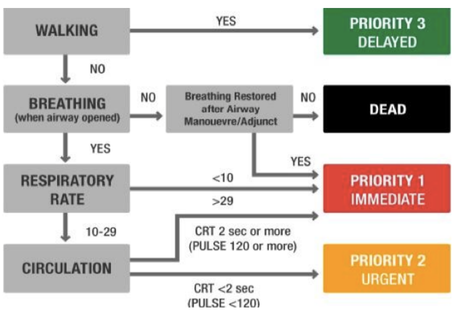
Communication

Assessment

METHANE

- **M**ajor Incident
- **E**xact Location
- **T**ype of Incident
- **H**azards: present/potential
- **A**ccess
- **N**umber of casualties: type/severity
- **E**mergency services present & req

Triage



Treatment

Transport

HOSPITAL DISASTER PLANNING

- Have a plan & practice
- Call code brown
- ED response
  - Clear stable/non-critical
  - Ensure stock supplies
  - Recall staff
  - FACEM to triage

DONT FORGET ABOUT NOTIFYING PUBLIC HEALTH IF DISEASE RELATED

35 EBM

Definitions

Causation v Correlation

Causation: event A the result of event B
Correlation: size & direction of a change only

Errors

Type 1. False +ve
Type 2. False –ve

Mean, Median, Mode

Mean: average
Median: middle number
Mode: most repetitive

Randomisation Types

Simple: single sequence randomisation
Block: groups within timeframe
Stratified: groups within covariates
Covariate Adaptive: block + stratified

Variable Types

Dichotomous: eg gender
Nominal: eg brands
Ranked (ordinal): eg income bracket
Continuous: eg height

Study Types

Gold Standard: Multi-centred RCT with validated studies

In order of value (not incl pooled):

1 Non-clinical
Lab research
Animal research
Ideas, editorials, opinions
Lit review

2 Retrospective
Case reports/series
Cross-sectional study
Case-control study

3 Prospective
Cohort study (observational)
RCT

4 Pooled
Systematic Review
Meta-analysis

Likelihood Ratio

Less Likely	LR 0-1	LR 1-10	More Likely
45%	0.1	10	45%
30%	0.2	5	30%
15%	0.5	2	15%
0%	1	1	0%

LR = sens/(1-spec)
LR 0-1 = less likely
LR 1-10 = more likely

Examples
LR 0.1 = 45% less likely
LR 0 = test didn't make a diff
LR 10 = 45% more likely

Statistical Analysis

	True +ve	True –ve	
Test +ve	**a**	**b**	**PPV** a/(a+b)
Test –ve	**c**	**d**	**NPV** d/(c+d)
	SENS a/(a+c)	SPEC b/(b+d)	

B = type I error
C = type II error

NNT = 1/ARR

PPV = likelihood of having if +ve
NPV = likelihood of not having if –ve

+ve LR = sens / (1 – spec)
- ve LR = (1 – sens) / spec

RR = a/(a+b) ÷ c/(c+d) = a(c+d) ÷ c(a+b)
OR = ad/bc (1 = no association)
Prevalence = (a+b)/(c+d)
False +ve rate = c/(c+d)
False –ve rate = b/(b+a)

Bayes' Theorem: "conditional probability"
Hawthorn Effect: Δ effect when being watched