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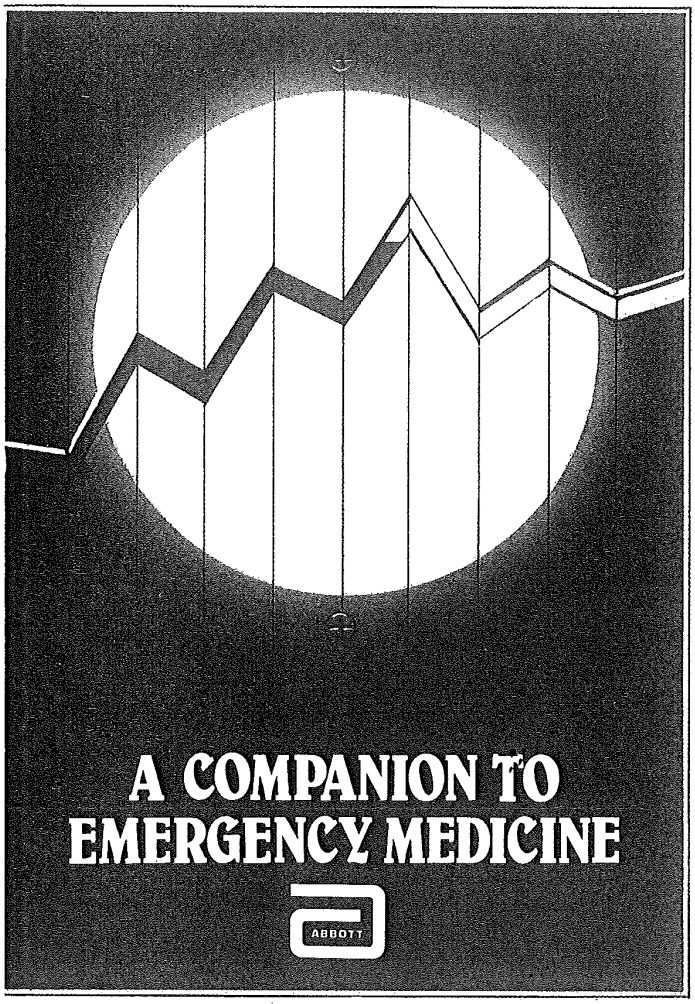

A COMPANION TO EMERGENCY MEDICINE

COMPILED BY C.P. FREEMAN F.R.C.S.
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ACCIDENT AND EMERGENCY MEDICINE
DUDLEY ROAD AND EAST BIRMINGHAM HOSPITALS
BIRMINGHAM

Supplied as a Service to Medicine by
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Telephone [redacted]

PREFACE

This pocket book is intended to be carried by Accident and Emergency staff to provide a quick reference to a range of factual material.

The data included is considered by the author to be useful in the Accident and Emergency environment. No attempt is made to provide a text and it is expected that established publications will be used to enlighten readers in subjects of which they are unfamiliar. References are provided for further reading.

A great deal of factual information is accumulated by the junior doctor throughout medical training, and it is hoped that this companion will provide an aid to improve and standardise the care of patients in the Accident and Emergency department.

C.P.F.
September 1985

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1. CARDIOPULMONARY RESUSCITATION (C.P.R.)

BASIC C.P.R. :

Airway
Breathing
Circulation

This involves checking the Airway for patency, Expired Air Ventilation and External Cardiac Compression.
This should be instigated by the first competent person at the scene.

ADVANCED C.P.R. :

This is performed by trained personnel with the aid of Resuscitation equipment. Basic C.P.R. must continue.
The following procedures may be involved:

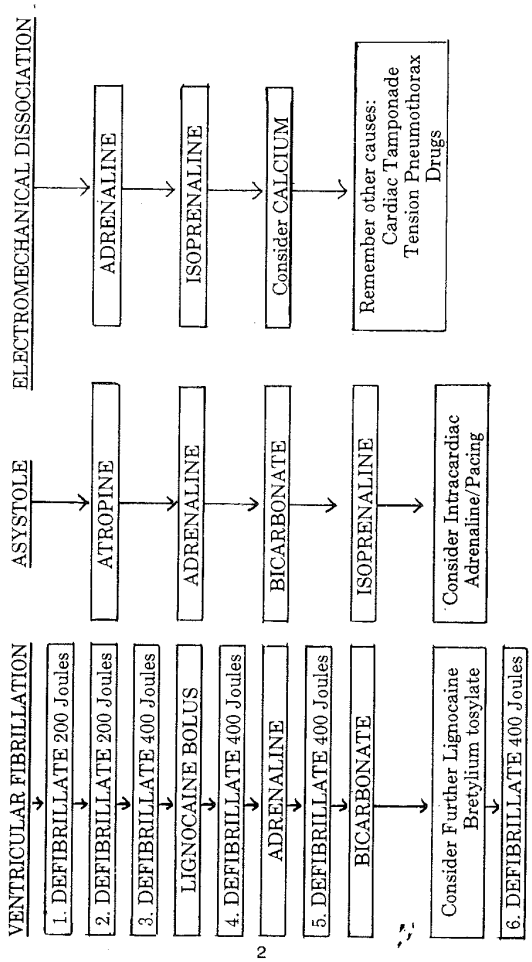
Intravenous therapy
Intubation
Electrocardiography
Defibrillation

DRUG DOSES (approx. Adult doses):

Adrenaline *	10mls 1:10,000 i.v. (20mls 1:10,000 Via E.T. Tube)
Atropine *	300-600ug i.v.
Calcium Chloride	5mls 10% i.v.
Cyclizine	25-50mg i.v.
Diamorphine	2.5-5mg i.v.
Isoprenaline	100ug bolus i.v. then 2 mg in 500mls 5% Dextrose infusion
Lignocaine *	100mg bolus i.v. then 4mg/min infusion
Naloxone	0.4mg i.v. (may be repeated)
Sodium Bicarbonate	50mls 8.4% i.v. (titrate slowly against p.H.) $\frac{\text{(Base deficit} \times \text{Body weight (kg)}}{3} = \text{mls } NaHCO_3\ 8.4\%)$

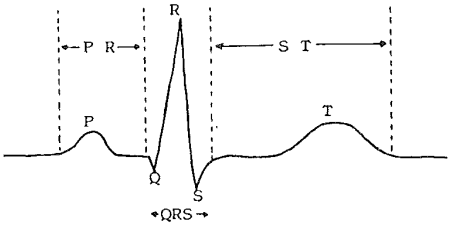
* N.B. These drugs may be given via endotracheal route.

C.P.R. — MANAGEMENT OF RHYTHM DISTURBANCE:



(The Resuscitation Council UK 1984)

THE NORMAL ELECTROCARDIOGRAM



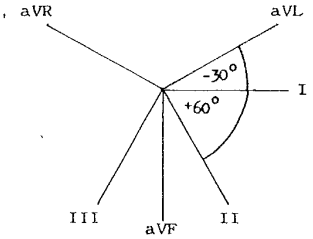
STANDARD TIMES:

Interval	Range
PR	0.17 - 0.20 seconds
ST	0.27 - 0.33 seconds
QRS	0.08 - 0.10 seconds

N.B. With a paper speed of 25 mm/second :
1 small square = 0.04 seconds
5 small squares = 0.2 seconds

Potential difference 1 millivolt = 10mm
= 10 small squares

THE FRONTAL PLANE LEADS:



NORMAL
AXIS LIMITS : -30° to +90°

N.B. Leads II, III and aVF are Inferior; I and aVL are Anterolateral.

2 HEAD INJURIES

GUIDELINES FOR THE MANAGEMENT OF PATIENTS WITH RECENT HEAD INJURY

CRITERIA FOR SKULL X-RAY AFTER RECENT HEAD INJURY:

1. Loss of consciousness or amnesia at any time.
2. Neurological symptoms or signs.
3. Cerebrospinal fluid or blood from the nose or ear.
4. Suspected penetrating injury.
5. Scalp bruising or swelling following blunt injury.
6. Alcohol intoxocation.
7. Difficulty in assessing the patient (eg. infants, epilepsy, stroke).

CRITERIA FOR HOSPITAL ADMISSION AFTER RECENT HEAD INJURY:

1. Confusion or any other depression of the level of consciousness at the time of examination.
2. Skull fracture.
3. Neurological signs, persistant vomiting or severe headache.
4. Serious difficulty in assessing the patient (eg. infants, epilepsy alcohol).
5. Co-existing medical conditions (eg. haemophilia. stroke).
6. Unfavourable social conditions, lack of supervision.

Note: Post-traumatic amnesia with full recovery is not sufficient indication for admission.

Relatives or friends of patients sent home should receive written instructions concerning indications for return to hospital.

CRITERIA FOR INFORMING THE APPROPRIATE CONSULTANT:

1. Fracture of the Skull in association with:

   confusion or other depression of conscious level
   or focal neurological signs
   or epileptic fits.
2. Confusion or other neurological disturbance persisting for longer than 12 hours (even if there is no skull fracture).
3. Coma continuing after resuscitation.
4. Depressed skull fracture.
5. Fracture base of skull.
6. Deterioration in clinical condition.

2. HEAD INJURIES (continued)

GLASGOW COMA SCALE:

Best Motor Response -	Obeys	M.6
	Localises	5
	Withdraws	4
	Abnormal Flexion	3
	Extends	2
	No Response	1
Verbal Response -	Orientated	V.5
	Confused Conversation	4
	Inappropriate Words	3
	Incomprehensive Sounds	2
	No Response	1
Eye Opening-	Spontaneous	E.4
	To speech	3
	To pain	2
	No Response	1
Score-	(Total possible	15)

N.B. Studies have shown a favourable outcome in patients with a Glasgow Coma Score of 8 or more. (Kohi Y.M.: Injury 1984 Vol 16 p 25-29) However, staff responsible for recording neurological observations must be aware of the signifigance of changes in the Glasgow Coma Score and act accordingly.

EDINBURGH COMA SCALE:

Grade-
- i Drowsy but responds to vocal command
- ii Unconscious but responds to minimal stimuli
- iii Unconscious and responds to painful stimuli
- iv Unconscious and no response

3. BURNS

PRIORITIES:

Airway (40-60% Oxygen)

Establish Time of Burn and whether Smoke was inhaled

Initial Estimation of Burn Area (Rule of Nines Adults Only)

Intravenous Line - burns of over 10% for Children
- burns of over 15% for Adults

Analgesia (i.v. Morphine)

Investigations - Urea and Electrolytes
Haemoglobin and Haematocrit
Group and Cross Match
Electrocardiogram
Chest X-Ray and Blood Gases

Calculate Fluid Requirement

Calculate Plasma Deficit

Establish Unit/Time Infusion

Catheterise Bladder

Assess Depth of Burn (Sensation)

Dress Burn (Avoid Repeated Inspection of Burn)

Drugs (Tetanus Toxoid, Antibiotics ?)

Reassess Fluid Replacement at 1 hour

FLUID REPLACEMENT:

Requirement mls./ unit time = $\frac{\%\ \text{Burn Area} \times \text{kg Weight}}{2}$

Unit Time: 4 hours 4 hours 4 hours
6 hours 6 hours
12 hours

Plasma Deficit = Blood vol. - $\frac{\text{Blood vol.} \times \text{Haematocrit (Normal)}}{\text{Haematocrit (Actual)}}$

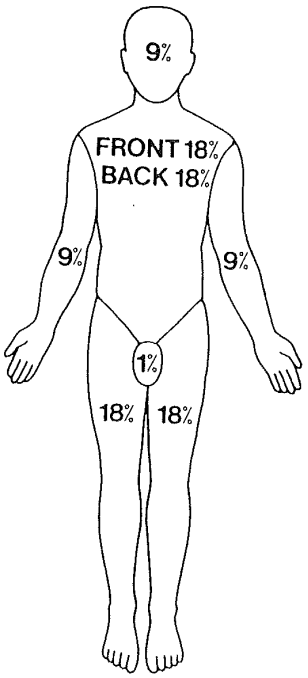
3. BURNS continued

TREATMENT OF SHOCK - TABLE OF EXPECTED VALUES

Age	Wt. in Kg. M	Wt. in Kg. F	Haematocrit M	Haematocrit F	Haemoglobin % M	Haemoglobin % F	Blood vol. in ml. M	Blood vol. in ml. F
Birth	3.5		60		145		260	
6/12	7		36		80		520	
1	10		38		85		750	
2	12.5		38		85		940	
3	15		38		85		1120	
4	17		39		88		1270	
5	19		39		88		1420	
6	22		40		90		1650	
7	24		40		90		1800	
8	26		40		90		1950	
9	30		40		90		2250	
10	32		40		90		2400	
11	35		41	40	93	90	2620	
12	40		42	40	96	90	3000	
13	45		43	40	98	90	3370	
14	50		44	40	100	90	3750	
15	54	52	44	40	100	90	4050	3800
16	58	53	44	40	100	90	4350	4000
17	62	54	44	40	100	90	4650	4050
18	64	55	44	40	100	90	4800	4120
Adult	70	60	44	40	100	90	5000	4500

3. BURNS continued

WALLACE'S RULE OF NINES : For Adults



N.B. The surface area of the patients hand is approximately equal to 1% of the patients body surface area.
This may be useful in children where Wallace's rule of nines does not apply.

4. INTRAVENOUS FLUIDS

COMPOSITION OF COLLOID SOLUTIONS:

	Na+	K+ (Millimoles/Litre)	Ca++	Cl-	Albumin (g/l)	Globulin (g/l)	pH	Osmolality (mmol/kg)	Volume (mls)
Blood	136-145	3.5-5.0	2.0-2.5	100-106	35-45	20-30	7.4	285-295	450
Fresh Frozen Plasma	140	5	2		43	7	7.0	300	250
Human Albumin 4.5% (Plasma Protein Fraction)	130-160	2		112	45(95% Alb.)		7.3	Normal	400
Haemaccel	145	5.1	6.26	145	35(polygeline)		7.3	300-306	500
Dextran 70 in 5% Dextrose					60(polysaccharide)		5.7	335-337	500

COMPOSITION OF CRYSTALLOID SOLUTIONS:

	Na+	K+ (Millimoles/Litre)	Ca++	Cl-	HCO3-	Dextrose (g/l)	pH	Osmolality (mmol/kg)
Sodium Chloride 0.9%	150			150			5.5—6.5	Normal
Dextrose 4% with Sodium Chloride 0.18%	30			30		40	3.5—6.5	Normal
Hartmann's	131	5	2	111	29 (Lactate)		5.0—7.0	Normal
Dextrose 5%						50	3.5—5.5	Normal
Sodium Bicarbonate 8.4%	1000				1000		8.0—8.5	2000

5. INTUBATION

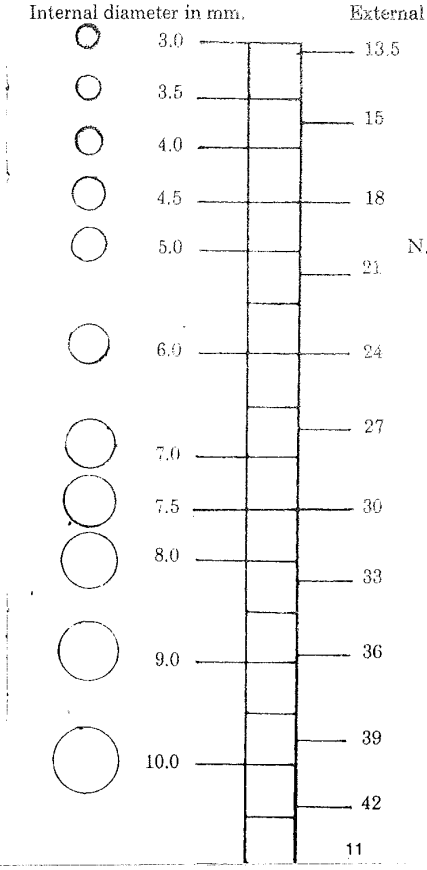
ENDOTRACHIAL TUBE SIZES (ORAL TUBES):

	AGE		TUBE SIZE	
CHILDREN- (Uncuffed)	Birth		3.5 mm	
	3 months		4.0	
	6 months		4.0	
	9 months		4.5	
	1 years		4.5	
	2 years		5.0	
	3 years		5.0	
	4 years		5.5	
	5 years		5.5	
	6 years		6.0	
	7 years		6.0	
	8 years		6.5	
	9 years		6.5	
	10 years		7.0)	
	11 years		7.0)	Cuffed
	12 years		7.5)	or
	13 years		7.5)	Uncuffed
	14 years		8.0)	
ADULTS- (Cuffed)	Female	Small	8.0 mm	
		Medium	8.5	
		Large	9.0	
	Male	Small	8.5	
		Medium	9.0	
		Large	9 5	

N.B. it is preferable to use a "Portex" tube if it is anticipated that intubation may be prolonged (ie. Head Injuries).

ENDOTRACHEAL/TRACHEOSTOMY TUBE SIZES

CONVERSION TABLE:



N.B. 1 Endotracheal tubes are specified by their internal diameters in mm. (Metric)
2 Tracheostomy tubes are specified by both French Gauge and Metric (mm) sizes. (See above conversion)
3 Thoracic drainage tubes are specified in French Gauge sizes only.

6. ANAPHALACTIC SHOCK

MANAGEMENT:

GENERAL RESUSCITATIVE MEASURES -
Oxygen -Airway / Intubation / Tracheotomy
Intravenous Fluids
Circulatory Support

SPECIFIC MEASURES -
Adrenaline - 0.5 ml 1:1000 Deep IM or Slow IV (Monitor ECG)
Antihistamine - 10 mg IV Chlorpheniramine maleate
Steroids - 100-200 mg IV Hydrocortisone
Treat Bronchospasm - Salbutamol 0.5 mg SC or IM
0.25 mg IV (Slow)
Nebulised 2.5—5.0 mg
in 3ml saline
or
Aminophylline 250-500 mg IV (Slow)
(Child 5 mg/kg)

CANNULA SIZES

	Portal Cap Colour	Outside Diameter	Gauge
Venflon	Blue	0.8 mm	22G
	Pink	1.0 mm	20G
	Green	1.2 mm	18G
	Yellow	1.4 mm	17G
	Grey	1.7 mm	16G
	Brown	2.0 mm	14G
Abbocath	Yellow	0.6 mm	26G
	Purple	0.7 mm	24G
	Black	0.9 mm	22G
	Yellow	1.0 mm	20G
	Pink	1.3 mm	18G
	White	1.7 mm	16G
	Green	2.1 mm	14G

7. POISONING

SOME USEFUL ANTIDOTES:

POISON	"ANTIDOTE"
Acids	Magnesium Hydroxide mixture
Antidepressants	Activated Charcoal
(Tricyclics)	Pyridostigmine
Arsenic	Dimercaprol
Barbiturates	Activated Charcoal
Beta-blockers	Atropine/Prenalterol/Glucagon
Butyrophenones	Benztropine
(Haloperidol)	
Carbon Monoxide	100% Oxygen
Cholinesterase Inhibitors	Pralidoxime/Atropine
Chromates	Dimercaprol
Copper	Penicillamine/Dimercaprol
Coumarin	Vitamin K
Cyanide	Oxygen/Dicobalt edate
	Sodium nitrate + Sodium thiosulphate
Dextropropoxyphene	Naloxone
Fluorides	Calcium gluconate
Gold	Dimercaprol
Heparin	Protamine sulphate
Hydrofluoric acid - Burns	Calcium gluconate gel
Hydrogen Sulphide	Sodium nitrate
Iron	Desferrioxamine
Lead	Sodium calcium edetate/Penicillamine
Lime - Burns	Disodium edetate
Mercury	Dimercaprol/Penicillamine
Metoclopramide	Benztropine/Diazepam
Monoamine oxidase inhibitors	Chlorpromazine
Opiates	Naloxone
Paracetamol	N-Acetyl cysteine/Methionine
Paraquat	Bentonite/Fullers earth
Salicylates	Activated Charcoal

(see British National Formulary for Doses)

Poisons Information Services :

Belfast (T.I)	0232-240503	Royal Victoria Hospital
Birmingham (T.I.L)	021-554-3801	Dudley Road Hospital
Cardiff (T.I)	0222-492233	Royal Infirmary
Edinburgh (T.I)	031-229-2477	Royal Infirmary
Leeds (I)	0532-430715	General Infirmary
London (T.I.L)	01-407-7600	Guys Hospital
Newcastle (T.I.L)	0632-325131	Royal Victoria Infirmary

Key: T-Treatment facilities
I-Information services
L-Toxicology Laborotory

Snake Antivenom Information:

London	01-407-7600
Liverpool	051-525-3611

8. ASSESSMENT OF INJURY

ABBREVIATED INJURY SCALE (A.I.S.)
Injuries are scored on a scale 1-5 according to the severity with a score of 5 associated with a high risk of death. Each region of the body is scored separately according to clinical judgement.

INJURY SEVERITY SCORE (I.S.S.):
Injuries are scored using the A.I.S. system taking the most significant injury in each of six regions:

1. Head and Neck
2. Face
3. Chest
4. Abdominal and Pelvic contents
5. Limbs and Pelvic girdle
6. External

The sum of the squares of the highest three injuries on the A.I.S. in different body regions gives the Injury Severity Score. Maximum score (3×25) is 75.

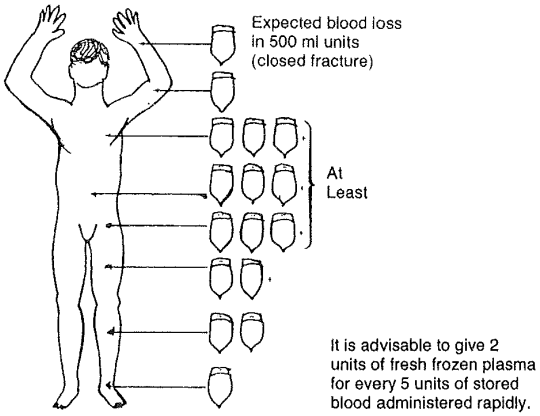
EXAMPLE:

A.I.S	Head Injury	Chest Injury	I.S.S.
1	Dizzy. No loss of consiousness	Single rib fracture	1
2	Unconscious<15 minutes	Multiple rib fractures	4
3	Unconscious>15 minutes with no neurological signs	Pneumothorax	9
4	Unconscious>15 minutes neurological signs	Flail chest	16
5	Unconscious>24 hours	Extensive lung laceration	25

N.B.: I.S.S. Less than 7-Mild injury
Between 7 and 12 - moderate injury
Greater than 12 - Severe injury

9. TRANSFUSION REQUIREMENTS

In the shocked patient the priority is to restore the circulating blood volume. It may be beneficial for the Haematocrit to fall to 30% - therefore initial fluid resuscitation should be with crystalloid of colloid solutions. Up to 3 Litres of clear fluid may be given following which crossmatched blood will be required.



BLOOD GROUPS:

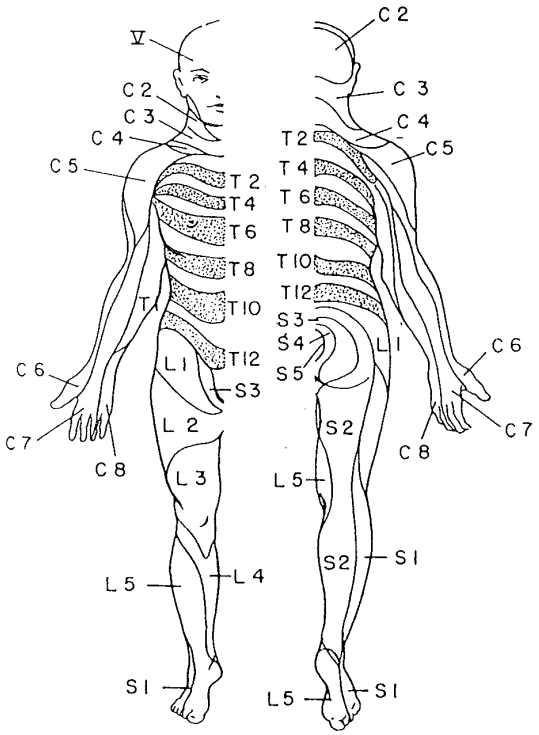
Type	Plasma agglutinins		Frequency
O	Anti-A, Anti-B	Universal donors	47%
A	Anti-B		42%
B	Anti-A		8%
AB	None	Universal recipients	3%

Rhesus

D +ve	Anti-D absent	85% (Caucasians)
D −ve	Anti-D present	15% (Caucasians)

N.B. Plasma agglutinins are insignificant in donor blood due to the dilution that takes place on transfusion.

10. DERMATOMES



10. MYOTOMES

UPPER LIMB:

Shoulder	Abduction and Lateral Rotation	C5
	Adduction and Medial Rotation	C 6, 7, 8
Elbow	Flexion	C 5, 6
	Extension	C 7, 8
Forearm	Pronation	C 6
	Supination	C 6
Wrist	Flexion	C 6, 7
	Extension	C 6, 7
Fingers and Thumb	Flexion	C 7, 8
	Extension	C 7, 8
Hand (intrinsic muscles)		T1

LOWER LIMB:

Hip	Flexion	L 2, 3
	Extension	L 4, 5
Knee	Extension	L 3, 4
	Flexion	L5, S1
Ankle	Dorsi-flexion	L 4,5
	Plantar-flexion	S 1, 2

11. MUSCLE POWER

Medical Research Council Grading:

Grade 5. Normal power

Grade 4. Active movements against gravity and resistance

Grade 3. Active movements against gravity

Grade 2. Active movements, with gravity eliminated

Grade 1. Flicker of contraction

Grade 0. No contraction

NERVE INJURIES

Nerves may be damaged in one of three ways:

Neurapraxia - Contusion of the nerve results in loss of function for up to 6 weeks.

Axonotmesis - crushing the nerve results in degeneration of the distal axon (Wallerian degeneration). The axon tubules remain in continuity so recovery can be expected.

Neurotmesis - division of the nerve results in degeneration of the distal axon. Recovery will depend on the quality of the repair.

Axon Growth - Regenerating axons can be expected to grow at a rate of 1 millimeter per day or 1 inch per month

12. FRACTURE CLASSIFICATION

GENERAL : Open - Fracture in communication with skin wound.
Closed - Fracture isolated from skin wounds or skin intact.

SPECIFIC FRACTURES:

PROXIMAL FEMUR - Intracapsular : Subcapital/Transcervical
Extracapsular: Basal
Trochanteric

Garden Grades for Subcapital Femoral Neck Fractures:

Grade i	One cortex disrupted on X-ray. Trabecullae angulated
Grade ii	Both cortices disrupted. Trabecullae in alignement
Grade iii	Rotation of femoral head. Slight displacement
Grade iv	Severe displacement

ANKLE-

Weber Classification of Fracture/Dislocations at the Ankle: (simplified):

Type A	Fracture of the fibula distal to the level of the ankle joint or rupture of the lateral ligament; Medial Malleolus may be fractured.
Type B	Fracture of the fibula at the level of the ankle joint - usually spiral; Medial Malleolus may be fractured or rupture of deltoid ligament.
Type C	Fracture of the fibula proximal to the level of the ankle joint with fracture of Medial Malleolus or rupture of deltoid ligament.

N.B. The higher the fibular fracture the more extensive the damage to the tibio-fibular ligamentous complex and the greater the likelihood of ankle mortice instability.

EPIPHYSEAL PLATE FRACTURES-

Salter Classification:

Class 1	A slip through the zone of provisional calcification adjacent to the growth plate
Class 2	A slip of the epiphyseal plate with an associated fracture through the metaphysis
Class 3	A slip of the epiphyseal plate with an associated fracture through the ephiphysis. The growth plate and articular surface are disrupted
Class 4	A fracture through the metaphysis, growth plate and ephiphysis. The articular surface is disrupted
Class 5	A crush fracture of the articular surface, ephiphysis and growth plate

N.B. Class 1 and 2 fracture separations do not generally result in growth disturbances following reduction. Class 3,4 and 5 injuries require specialist attention and often result in growth disturbances

15. SUTURE MATERIAL

ABSORBABLE MATERIALS:

Organic -	Catgut - Plain	
	Chromic	
Synthetic —	Polyglycolic acid (Multifilament)	"Dexon"
	Polyglactin (Multifilament)	"Vicryl"
	Polydioxanone (Monofilament)	"PDS"

NON-ABSORBABLE MATERIALS:

Organic (Multifilament) -		
	Silk	
	Linen	
Synthetic (Multifilament) -		
	Polyester	"Dacron" "Ethibond" "Ethiflex"
	Polyamide	"Nurolon" "Ethilon"
Synthetic (Monofilament)-		
	Polyamide	"Nylon" "Ethilon"
	Polyethylene	"Dermalene"
	Polypropylene	"Prolene"

RECOMMENDED SUTURE SIZES:

	Face	Limbs	Trunk	Scalp
Adults:	6.0/5.0	4.0	4.0/3.0	3.0
Children:	6.0	5.0	4.0	4.0

16. TETANUS PROPHYLAXIS

IMMUNITY CATEGORY:	A TOXOID COURSE OR BOOSTER WITHIN 5 YEARS	B TOXOID COURSE OR BOOSTER WITHIN 10 YEARS	C TOXOID COURSE OR BOOSTER BEFORE 10 YEARS	D NOT IMMUNISED OR IMMUNITY UNKNOWN
WOUND TYPE:				
1. CLEAN				
LESS THAN 6 HRS MINIMUM TISSUE DAMAGE. NO RETAINED FOREIGN BODIES.	NO TREATMENT	TOXOID BOOSTER	TOXOID BOOSTER	TOXOID FULL COURSE
TETANUS RISK MINIMAL				
2. DIRTY				
MORE THAN 6 HRS. EXTENSIVE TISSUE DAMAGE. RETAINED FOREIGN BODIES. BURNS.	NO TREATMENT	TOXOID BOOSTER	TOXOID BOOSTER + 1ml. HUMAN ANTI-TETANUS IMMUNOGLOBULIN (250 Units)	TOXOID FULL COURSE + 1ml. HUMAN ANTI-TETANUS IMMUNOGLOBULIN (250 Units)
TETANUS PRONE				

17. NOTIFIABLE INFECTIOUS DISEASES

Acute encephalitis	Paratyphoid fever
Acute meningitis	Plague
Anthrax	Poliomyelitis
Cholera	Rabies
Diptheria	Relapsing fever
Dysentery	Scarlet fever
Food poisoning	Smallpox
Infantile Gastroenteritis	Tuberculosis
Infective hepatitis	Typhoid
Lassa fever	Viral haemorrhagic fever
Marburg fever	Whooping cough
Measles	Yellow fever

NOTIFIABLE INDUSTRIAL DISEASES

Lead poisoning	Carbon bisulphide poisoning
Arsenic poisoning	Aniline poisoning
Mercury poisoning	Chronic benzene poisoning
Phoshorus poisoning	Toxic jaundice
Manganese poisoning	Toxic anaemia
Beryllium poisoning	Epitheliomatous ulceration (Tar)
Cadmium poisoning	Anthrax
Chrome ulceration	Compressed air illness

Central Public Health Laboratory:	01-205-7041
Hospitals for Tropical Diseases:	
East Birmingham Hospital, Birmingham	021-772-4311
Sefton General Hospital, Liverpool	051-733-4020
Hospital for Tropical Diseases, London	01-387-4411

18. INCUBATION PERIODS

Chickenpox (Varicella)	10-21 days (14-15 usually)
Diptheria *	1-6 days
Enteric fevers *	3-23 days
Infectious hepatitis (Hepatitis A) *	15-40 days
Legionnaire's disease	2-10 days (7 usually)
Measles (Morbilli) *	12-14 days (8-11 usually)
Mumps	14-28 days (17-18 usuallly)
Poliomyelitis *	5-21 days (7-14 usually)
Rabies	9 days-2 years (2-8 weeks usually)
Rubella (German Measles)	14-19 days (17-18 usually)
Scarlet fever *	2-5 days
Whooping cough (Pertussis) *	7-14 days

N.B. "At risk" (quarantine) time - add 2 days to incubation period.
*Notifiable disease in U.K.

19. IMMUNISATION PROGRAMME

Age	Vaccine	Interval	Notes
During the first year of life	Diph/Tet/Pert and oral polio vaccine. (First dose)		The earliest age at which the first doses should be given is 3 months, but a better general immunological response can be expected if the first dose is delayed to 6 months
	Diph/Tet/Pert and oral polio vaccine. (Second dose)	Preferably after an interval of 6 to 8 weeks.	
	Diph/Tet/Pert and oral polio vaccine. (Third dose)	Preferably after an interval of 4 to 6 months	
During the second year of life	Measles vaccine	After an interval of not less than 3 weeks.	Although measles vaccination can be given in the second year of life, delay until the age of three years or more will reduce the risk of occasional severe reactions to the vaccine.
At 5 years of age or school entry	Diph/Tet and oral polio vaccine or Diph/Tet/Polio vaccine		These may be given, if desired, at 3 years of age to children entering nursery schools, attending day nurseries or living in children's homes.
Between 10 and 13 years of age	BCG vaccine		For tuberculin-negative children
All girls aged 11 to 13 years	Rubella vaccine	There should be an interval of not less than 3 weeks between BCG and rubella vaccination	All girls of this age should be offered rubella vaccine whether or not there is a past history of an attack of rebella.
At 15 to 19 years of age or on leaving school	Polio vaccine (oral or inactivated) and tetanus toxoid		

20. INFECTIONS AND ANTIBIOTICS

INFECTIOUS:		LIKELY ORGANISMS:
CENTRAL NERVOUS SYSTEM		
Acute Pyogenic Meningitis:	Neonates	Escherichia coli Streptococci group B
	Adults/Children	Haemphilus influenzae Neisseria meningitidis Pneumococcus
LOCOMOTOR SYSTEM		
Acute Septic Arthritis:		Staphylococcus aureus Haemophilus influenzae Streptococci group B Neisseriae
Acute Osteomyelitis:		Staphylococcus aureus Streptococci group B Pneumococcus Haemophilus influenzae Escherichia coli
RESPIRATORY SYSTEM		
Otitis Media:		Pneumococcus Haemophilus influenzae
Diptheria		Corynebacterium diptheriae
Acute Epiglottitis:		Haemophilus influenzae (Viral)
Chronic Bronchitis:		Haemophilus influenzae Pneumococcus
Whooping Cough:		Bordetella pertussis
Pneumonia	Lobar	Pneumococcus
	Bronchial	Pneumococcus Staphylococcus aureus Haemophilus influenzae Mycoplasma pneumoniae
Legionnaires' Disease:		Legionella pneumophila
Tuberculosis:		Mycobacterium tuberculosis
CARDIOVASCULAR SYSTEM		
Endocarditis:		Streptococcus viridans Streptococcus faecalis Staphylococcus aureus

BLANK PAGE FOR PERSONAL NOTES

INFECTIONS continued

GASTROINTESTINAL SYSTEM		
Cholera:		Vibrio cholerae
Dysentery:		Shigellae
Enteric Fever:	Typhoid Paratyphoid	Salmonella typhi Salmonella paratyphi
Food Poisoning:		Salmonella typhimurium Campylobacter
Infantile Gastroenteritis:		Escherichia coli (Serotypes O and B)
GENITOURINARY SYSTEM		
Urinary Tract Infection:		Escherichia coli Proteus Pseudomonas Klebsiella Staphylococcus saprophyticus Streptococcus faecalis
Salpingitis:		Escherichia coli Streptococcus faecalis Chlamydia trachomatis Neisseria gonorrhoeae Mycobacterium tuberculosis
Epididymitis:		Escherichia coli Streptococci Staphylococci Neisseria gonorrhoeae Mycobacterium tuberculosis
Non-specific Urethritis:		Chlamydia trachomatis
Gonorrhoea:		Neisseria gonorrhoeae
Syphilis:		Treponema pallidum
SKIN AND SOFT TISSUES		
Impetigo:		Staphylococcus aureus Streptococci group B
Erysipelas:		Streptococci group B
Gas Gangrene:		Clostridium welchii
Human Bites and Dog Bites:		Staphylococcus aureus Streptococci group A Corynebacterium Bacteroides Streptococci Pasteurella multocida

KEY TO ANTIBIOTIC SPECTRA

1 - Almost 100% of strains are sensitive

2 - 50-90% of strains are sensitive

3 - 10-50% of strains are sensitive

R - Resistant

* - Penicillinase producers are Resistant

Na - Not applicable

N.B. When it is necessary to begin 'blind' treatment, specimens should be collected and then the most appropriate drug prescribed; this way then be altered in the light of sensitivity tests.

Source.

Data on File
Dept of Microbiology
Dudley Rd Hospital
Birmingham

	Benzyl Penicilin	Erythromycin	Ampicillin	Cephalexin	Tetracycline	Trimethoprim	Flucloxacillin	Clindamycin	Gentamicin	Chloramphenicol	Nitrofurantoin	Nalidixic acid	Metronidazole		
Staphylococcus aureus	3/R*	1	3/R*	2	2	2	1	1	1	1	R	R	R		
Streptococcus group B	1	1	1	1	2	2	3	1	R	1	Na	Na	R		
Streptococcus viridans	1	1	1	1	2	1	1	1	R	1	Na	Na	R		
Streptococcus faecalis	3	2	1	R	2	2	R	R	R	1	Na	Na	R		
Pneumococcus	1	1	1	1	2	2	1	1	R	1	Na	Na	R		
Mycoplasma pneumoniae	R	1	R	R	1		R								
Legionella pneumophila		1													
Meningococcus (Neisseria)	1	1	1	1	1	R	Na	3	R	1	Na	Na	R		
Neisseria gonorrhoeae	1*	1	1	1	1	R	Na	3	R	1	Na	Na	R		
Clostridium welchii	1	1	1	1	2		1	1	R	2	R	R	1		
Escherichia coli	R	R	2	2	2	1	R	R	1	1	1	1	R		
Enterobacter	R	R	R	R	3	2	R	R	1	1	1	1	R		
Proteus	R	R	2	2	2	2	R	R	1	1	R	1	R		
Pseudomons	R	R	R	R	R	R	R	R	1	R	R	R	R		
Klebsiella	R	R	3	2	2	2	R	R	1	1	1	1	R		
Salmonella typhi	R	R	2	Na	Na	1	R	R	Na	1	Na	Na	R		
Haemophilus influenzae	3	2	2	R	2	1	R	2	1	1	Na	Na	R		
Bacteroides	3	2	3	R	2	R	R	1	R	1	Na	Na	1		
Treponema pallidum	1	1	1	1											
Chlamydia trachomatis	R	1	R	R	1								R		

21. NORMAL HAEMATOLOGICAL AND BIOCHEMICAL VALUES

HAEMATOLOGY - ADULT VALUES

Haemoglobin Male	13.0-18.0 g/dl
Female	11.5-16.5 g/dl
MCHC	32-36 g/dl
MCH	27-31 pg
MCV	76-92 fl
Haematocrit Male	40-54%
Female	37-47%
Red Cell Count Male	$4.4\text{-}6.1\times10^{12}$/l
Female	$4.2\text{-}5.4\times10^{12}$/l
Total White Cell Count	$4.0\text{-}11.0\times10^{9}$/l
Neutrophils	$2.5\text{-}7.5\times10^{9}$/l
Lymphocytes	$1.5\text{-}4.0\times10^{9}$/l
Platelets	$150\text{-}400\times10^{9}$/l
Serum Iron Males	13-32 umol/l
Females	10-29 umol/l
TIBC	45-70 umol/l
Serum B_{12}	150-900 ng/l
Serum Folate	2-14 ug/l
Red Cell Folate	200-800 ug/l
Sedimentation Rate Males	0-12 mm/hr
Females	0-20 mm/hr
Bleeding Time (template)	3-9 minutes
Fibrinogen	200-400 mg%
Prothrombin Time	12-14 seconds
Partial Thromboplastin Time	38-48 seconds

BLOOD GASES:

Arterial Oxygen (P_aO_2)	›10.6 kPa
Arterial Carbon Dioxide (P_aCO_2)	4.7-6.0 kPa
Arterial pH (H^+)	7.35-7.45 (35-45 nmol/l)
Base Excess	± 2 mmol/l
Venous P_aCO_2	›10.6 kPa
Standard Bicarbonate	24-32 mmol/l
Carboxyhaemaglobin (venous)	‹6% saturation
Toxic	›20% saturation

BIOCHEMICAL VALUES

Amylase	70-300 IU/l
Albumin	35-50 g/l
Bicarbonate	21-28 mmol/l
Bilirubin	‹17 umol/l
Calcium (total)	2.2-2.6 mmol/l
Chloride	95-110 mmol/l
Cholesterol	3.1-6.5 mmol/l
Creatinine	44-133 umol/l
Ethanol-Legal limit UK	17.4 mmol/l (80 mg/100 ml blood)
Glucose (fasting)	3.3-5.6 mmol/l
Lead	0.3-1.8 umol/l (‹30 ug/dl)
Magnesium	0.7-1.0 mmol/l
Osmolality	280-297 mOsm/kg
Phosphate (inorganic)	0.8-1.45 mmol/l
Potassium	3.3-5.8 mmol/l
Protein (total)	63-84 g/l
Sodium	130-150 mmol/l
Thyroxine	50-150 nmol/l
TSH	‹6 mU/l
Urea	3.0-8.3 mmol/l
Uric acid	0.12-0.36 mmol/l
Zinc	12-20 umol/l

DIAGNOSTIC ENZYMES:

Acid phosphatase (total)	1-8 IU/l
Alkaline phosphatase	20-130 IU/l
Aspartate aminotransferase (AST)	‹45 IU/l
Creatine kinase (CK)	‹150 IU/l
CK isoenzyme MB	‹25 IU/l
Gamma glutamyl transpeptidase (GT)	‹40 IU/l
Lactate dehydrogenase (LDH) Total	‹500 IU/l
Heart	‹300 IU/l
5' Nucleotidase	2-15 IU/l

The above values may vary slightly between laboratories.

22. THE 1983 MENTAL HEALTH ACT

PART II: COMPULSORY ADMISSION TO HOSPITAL

SECTION 2*	- Admission for Assessment
Duration	- Up to 28 days
Application	- Nearest relative or Approved Social Worker either of whom must have seen the patient within 14 days.
Grounds	- Mental disorder of a degree and nature warranting detention in hospital for assessment (or assessment followed by medical treatment) in the interest of the health and safety of the patient or for the protection of others.
Recommendations	- An approved Medical Practitioner (usually a Consultant Psychiatrist) and a Medical Practitioner acquainted with the patient (preferably the G.P.).

SECTION 3	- Admission for Treatment
Duration	- Up to 6 months.
Application	- Nearest relative or Approved Social Worker either of whom must have seen the patient within 14 days.
Grounds	- Mental illness or severe mental impairment or psychopathic disorder of a nature of degree that makes it appropriate to receive hospital treatment and such treatment is likely to alleviate or prevent deteriation of the condition. Detention must be necessary in the interest of the patients health and safety (or for the protection of others) and treatment cannot be provided unless he is detained under this section.
Recommendations	- An approved Medical Practitioner (usually a Consultant Psychiatrist) and a Medical Practitioner acquainted with the patient (preferably the G.P.).

*N.B. SECTION 2 is the preferred method of compulsory admission. The Approved Social Worker must be involved at an early stage. The Social Worker will have a list of those doctors approved under Section 12 of the Act.
The appropriate hospital is usually the mental hospital in whose catchment area the patient resides.

SECTION 4	- Emergency admission for Assessment
Duration	- Up to 72 hours
Application	- Nearest relative or Approved Social Worker either of whom must have seen the patient within 24 hours.
Grounds	- Mental disorder of a degree and nature warranting detention in hospital for assessment in the interest of the health and safety of the patient or for the protection of others, and is of such urgent necessity that compliance with section 2 would cause undesirable delay.
Recommendations	- A Medical Practitioner acquainted with the patient (preferably the G.P.) or another approved doctor who must have seen the patient within the previous 24 hours.

SECTIONS 135 and 136

Designed to allow an Approved Social Worker (135) or a Police officer (136) to remove anyone considered to be suffering from a Mental disorder, from a public place to a 'Place of Safety'. This may be a police station or any hospital. Further appropriate action can then be taken e.g. Section 2.

SUMMARY:

Full provisions of the act are rather complicated but in practice Accident and Emergency staff are only likely to be involved in voluntary (informal) admission or Section 2.
A police officer or social worker may bring a patient to the Accident and Emergency Department under Section 135/6.
Emergency admission (Section 4) will rarely be used unless the need is overwhelming and there is no other alternative.

20. 1986/87 CALENDAR

1986

January

Monday		6	13	20	27
Tuesday		7	14	21	28
Wednesday	1	8	15	22	29
Thursday	2	9	16	23	30
Friday	3	10	17	24	31
Saturday	4	11	18	25	
Sunday	5	12	19	26	

February

Monday		3	10	17	24
Tuesday		4	11	18	25
Wednesday		5	12	19	26
Thursday		6	13	20	27
Friday		7	14	21	28
Saturday	1	8	15	22	
Sunday	2	9	16	23	

March

Monday		3	10	17	24	31
Tuesday		4	11	18	25	
Wednesday		5	12	19	26	
Thursday		6	13	20	27	
Friday		7	14	21	28	
Saturday	1	8	15	22	29	
Sunday	2	9	16	23	30	

April

Monday		7	14	21	28
Tuesday	1	8	15	22	29
Wednesday	2	9	16	23	30
Thursday	3	10	17	24	
Friday	4	11	18	25	
Saturday	5	12	19	26	
Sunday	6	13	20	27	

May

Monday		5	12	19	26
Tuesday		6	13	20	27
Wednesday		7	14	21	28
Thursday	1	8	15	22	29
Friday	2	9	16	23	30
Saturday	3	10	17	24	31
Sunday	4	11	18	25	

June

Monday		2	9	16	23	30
Tuesday		3	10	17	24	
Wednesday		4	11	18	25	
Thursday		5	12	19	26	
Friday		6	13	20	27	
Saturday		7	14	21	28	
Sunday	1	8	15	22	29	

July

Monday		7	14	21	28
Tuesday	1	8	15	22	29
Wednesday	2	9	16	23	30
Thursday	3	10	17	24	31
Friday	4	11	18	25	
Saturday	5	12	19	26	
Sunday	6	13	20	27	

August

Monday		4	11	18	25
Tuesday		5	12	19	26
Wednesday		6	13	20	27
Thursday		7	14	21	28
Friday	1	8	15	22	29
Saturday	2	9	16	23	30
Sunday	3	10	17	24	31

September

Monday	1	8	15	22	29
Tuesday	2	9	16	23	30
Wednesday	3	10	17	24	
Thursday	4	11	18	25	
Friday	5	12	19	26	
Saturday	6	13	20	27	
Sunday	7	14	21	28	

October

Monday		6	13	20	27
Tuesday		7	14	21	28
Wednesday	1	8	15	22	29
Thursday	2	9	16	23	30
Friday	3	10	17	24	31
Saturday	4	11	18	25	
Sunday	5	12	19	26	

November

Monday		3	10	17	24
Tuesday		4	11	18	25
Wednesday		5	12	19	26
Thursday		6	13	20	27
Friday		7	14	21	28
Saturday	1	8	15	22	29
Sunday	2	9	16	23	30

December

Monday	1	8	15	22	29
Tuesday	2	9	16	23	30
Wednesday	3	10	17	24	31
Thursday	4	11	18	25	
Friday	5	12	19	26	
Saturday	6	13	20	27	
Sunday	7	14	21	28	

1987

January

Monday		5	12	19	26
Tuesday		6	13	20	27
Wednesday		7	14	21	28
Thursday	1	8	15	22	29
Friday	2	9	16	23	30
Saturday	3	10	17	24	31
Sunday	4	11	18	25	

February

Monday		2	9	16	23
Tuesday		3	10	17	24
Wednesday		4	11	18	25
Thursday		5	12	19	26
Friday		6	13	20	27
Saturday		7	14	21	28
Sunday	1	8	15	22	

March

Monday		2	9	16	23	30
Tuesday		3	10	17	24	31
Wednesday		4	11	18	25	
Thursday		5	12	19	26	
Friday		6	13	20	27	
Saturday		7	14	21	28	
Sunday	1	8	15	22	29	

April

Monday		6	13	20	27
Tuesday		7	14	21	28
Wednesday	1	8	15	22	29
Thursday	2	9	16	23	30
Friday	3	10	17	24	
Saturday	4	11	18	25	
Sunday	5	12	19	26	

May

Monday		4	11	18	25
Tuesday		5	12	19	26
Wednesday		6	13	20	27
Thursday		7	14	21	28
Friday	1	8	15	22	29
Saturday	2	9	16	23	30
Sunday	3	10	17	24	31

June

Monday	1	8	15	22	29
Tuesday	2	9	16	23	30
Wednesday	3	10	17	24	
Thursday	4	11	18	25	
Friday	5	12	19	26	
Saturday	6	13	20	27	
Sunday	7	14	21	28	

July

Monday		6	13	20	27
Tuesday		7	14	21	28
Wednesday	1	8	15	22	29
Thursday	2	9	16	23	30
Friday	3	10	17	24	31
Saturday	4	11	18	25	
Sunday	5	12	19	26	

August

Monday		3	10	17	24	31
Tuesday		4	11	18	25	
Wednesday		5	12	19	26	
Thursday		6	13	20	27	
Friday		7	14	21	28	
Saturday	1	8	15	22	29	
Sunday	2	9	16	23	30	

September

Monday		7	14	21	28
Tuesday	1	8	15	22	29
Wednesday	2	9	16	23	30
Thursday	3	10	17	24	
Friday	4	11	18	25	
Saturday	5	12	19	26	
Sunday	6	13	20	27	

October

Monday		5	12	19	26
Tuesday		6	13	20	27
Wednesday		7	14	21	28
Thursday	1	8	15	22	29
Friday	2	9	16	23	30
Saturday	3	10	17	24	31
Sunday	4	11	18	25	

November

Monday		2	9	16	23	30
Tuesday		3	10	17	24	
Wednesday		4	11	18	25	
Thursday		5	12	19	26	
Friday		6	13	20	27	
Saturday		7	14	21	28	
Sunday	1	8	15	22	29	

December

Monday		7	14	21	28
Tuesday	1	8	15	22	29
Wednesday	2	9	16	23	30
Thursday	3	10	17	24	31
Friday	4	11	18	25	
Saturday	5	12	19	26	
Sunday	6	13	20	27	

24. CONVERSION TABLE KILOGRAMS/STONES

KILOGRAMS	STONES
32	5
38	6
45	7
51	8
57	9
64	10
70	11
76	12
83	13
89	14
95	15
102	16
108	17
115	18
121	19
127	20

25. TELEPHONE NUMBERS

Accident and Emergency . . . . . .
Administration . . . . . .
. . . . . .
Blood Bank . . . . . .
Clinical Chemistry . . . . . .
Dining Room . . . . . .
Haematology . . . . . .
Immunology . . . . . .
Laundry . . . . . .
Medical Records . . . . . .
Mortuary . . . . . .
Occupational Therapy . . . . . .
Outpatients . . . . . .
Pathology (History) . . . . . .
Pharmacy . . . . . .
Physiotherapy . . . . . .
Residences . . . . . .
Staff Location . . . . . .
Theatres . . . . . .
Toxicology . . . . . .
X Ray . . . . . .
Wards . . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

Intensive Care . . . . . .
Coronary Care . . . . . .

Emergency Numbers:
CARDIAC ARREST . . . . . .
FIRE . . . . . .

Personal Numbers: . . . . . .
. . . . . .
. . . . . .

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