Dr Tony Smith

Intensive Care Specialist

Auckland DHB Critical Care Medicine, Auckland, National Medical Director for St John

Dr Dominic Fleischer

ED Specialist

Dr Richard Seigne

Specialist Anaesthetist

Canterbury District Health Board, Christchurch

Thursday, August 11, 2016 (Room 9)

14:00 - 16:00 WS #12: Pre Hospital Care Forum

16:30 - 18:30 WS #17: Pre Hospital Care Forum (Repeated)

Pre-Hospital Care Forum

Richard Seigne CDHB, Anaesthetist

Dominic Fleischer CDHB, Emergency Specialist

Tony Smith ADHB, Intensivist & Medical Director St John’s

11th August
2016

A Flight of Fancy……..
and how to avoid crashing

Richard Seigne
Anaesthetist CDHB

11th August
2016

Come fly with me

2015

Commercial flights?

Crashes? (excluding terrorism and deliberate acts)

Deaths?

Approximate mortality? 0.00000006% (6 in 100M)

Come fly with me

2009 -14 New Zealand surgery with GA – 1.2M

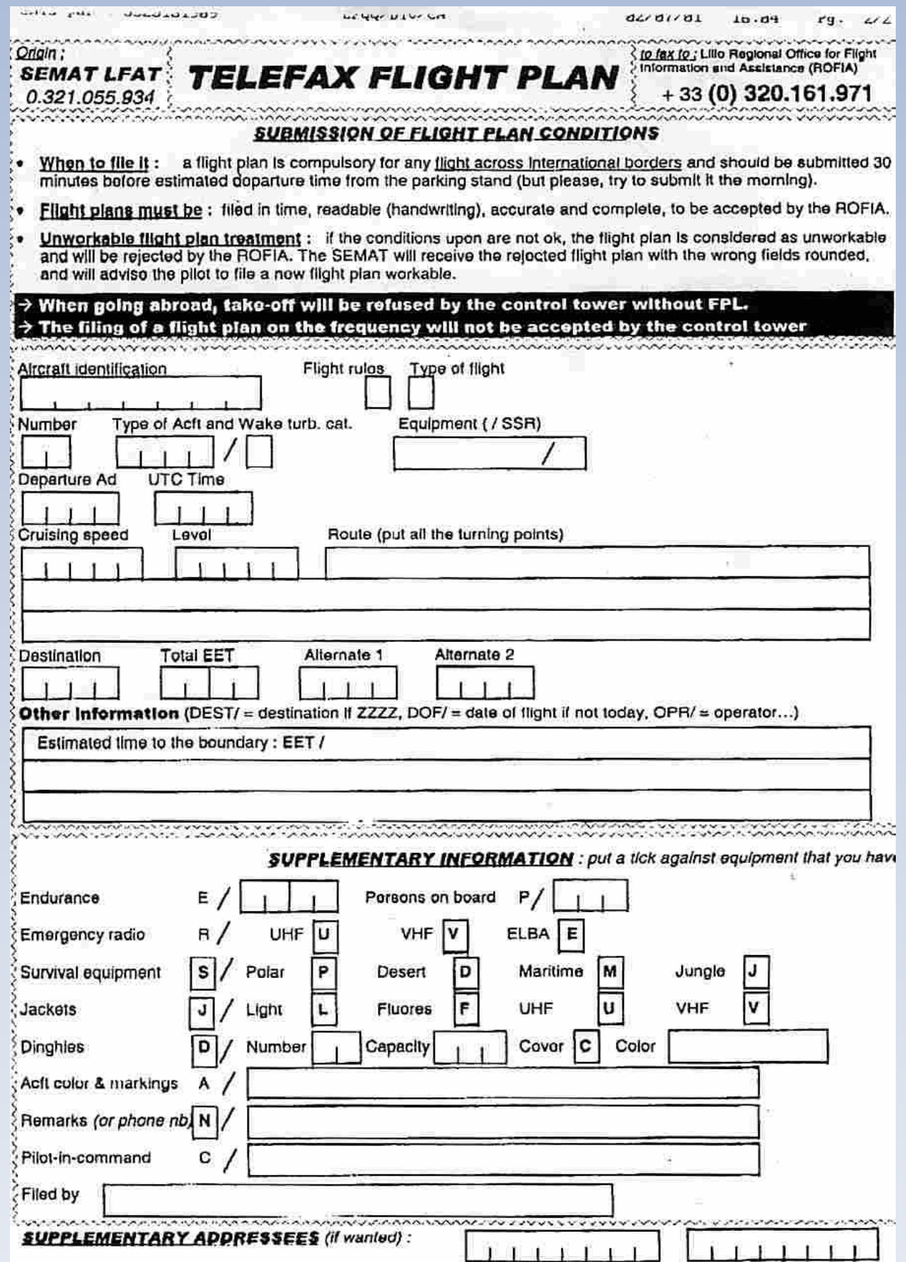
30 day mortality? Deaths 6755, 1/178, **0.56%**

CVS 1/15,400 Fit & well 1/2000

Colectomy 2 - 8.5% #NOF 7.2%, 1 year 25%

Hip, Knee replacement 0.12%, 0.17%

The flight plan – referral form



Origin :
SEMAT LFAT
0.321.055.934

TELEFAX FLIGHT PLAN

to fax to : Lille Regional Office for Flight Information and Assistance (ROFIA)
+ 33 (0) 320.161.971

SUBMISSION OF FLIGHT PLAN CONDITIONS

- **When to file it :** a flight plan is compulsory for any flight across international borders and should be submitted 30 minutes before estimated departure time from the parking stand (but please, try to submit it the morning).
- **Flight plans must be :** filed in time, readable (handwriting), accurate and complete, to be accepted by the ROFIA.
- **Unworkable flight plan treatment :** if the conditions upon are not ok, the flight plan is considered as unworkable and will be rejected by the ROFIA. The SEMAT will receive the rejected flight plan with the wrong fields rounded, and will advise the pilot to file a new flight plan workable.

→ When going abroad, take-off will be refused by the control tower without FPL.
→ The filing of a flight plan on the frequency will not be accepted by the control tower

Aircraft identification | Flight rules | Type of flight

Number | Type of Acft and Wake turb. cat. | Equipment (/ SSR)

Departure Ad | UTC Time

Cruising speed | Level | Route (put all the turning points)

Destination | Total EET | Alternate 1 | Alternate 2

Other information (DEST/ = destination if ZZZZ, DOF/ = date of flight if not today, OPR/ = operator...)

Estimated time to the boundary : EET /

SUPPLEMENTARY INFORMATION : *put a tick against equipment that you hav*

Endurance	E /		Persons on board	P /					
Emergency radio	R /	UHF	U	VHF	V	ELBA	E		
Survival equipment	S /	Polar	P	Desert	D	Maritime	M	Jungle	J
Jackets	J /	Light	L	Fluores	F	UHF	U	VHF	V
Dinghies	D /	Number		Capacity		Cover	C	Color	
Acft color & markings	A /								
Remarks *(or phone nb)*	N /								
Pilot-in-command	C /								
Filed by									

SUPPLEMENTARY ADDRESSEES *(if wanted) :*

Visa - discharge planning

Come Fly With Me

The plane - the patient

4 engines - 4 heart chambers

2 wings - 2 lungs

Taking off – extra stress

Taxiing ≠ Flying

Engines and wings under stress

The pilot - Anaesthetist

Cruising - maintenance of anaesthesia

The weather - the surgeon

Expect the unexpected

Repairs on the job

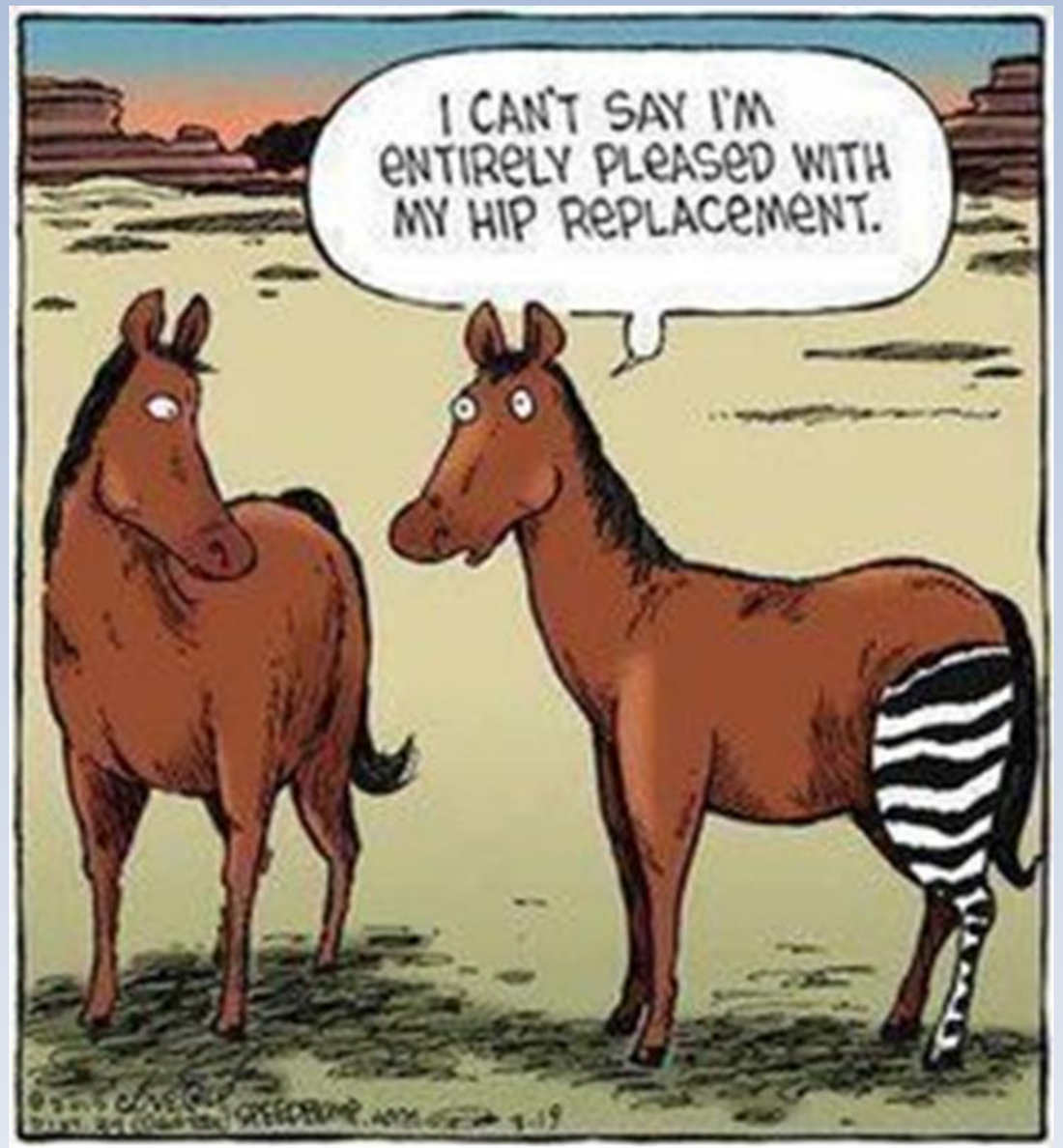
Landing - emergence

Restoration work - post operative recovery

Unwanted outcomes

Mortality

Unwanted outcomes



Morbidity

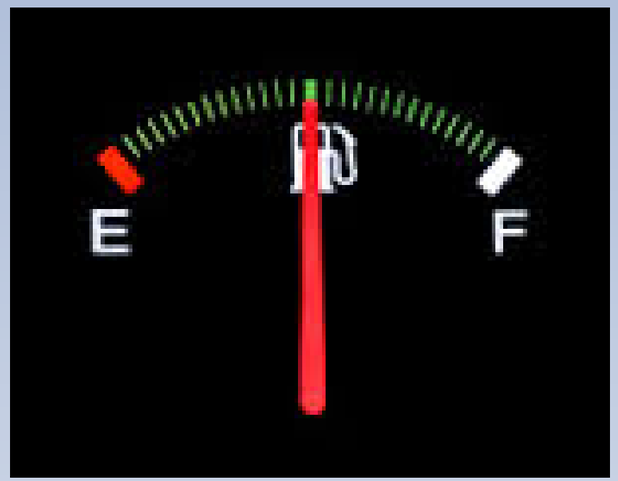
Australia NZ
4158 patients
Non cardiac surgery
>70yrs

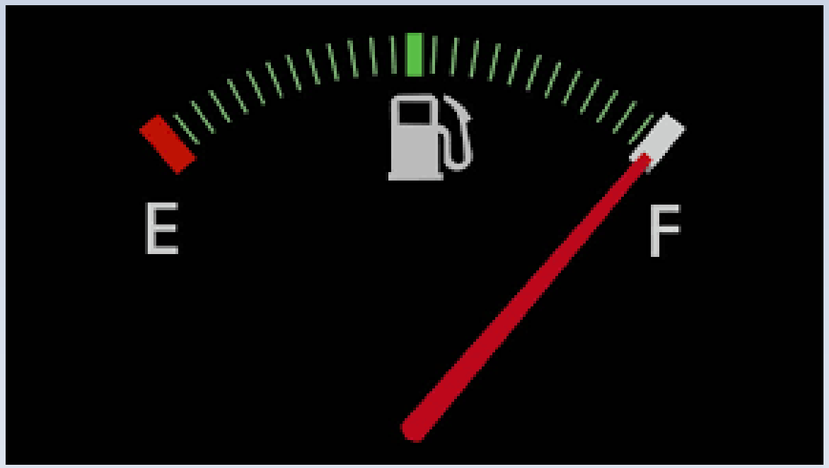
%?

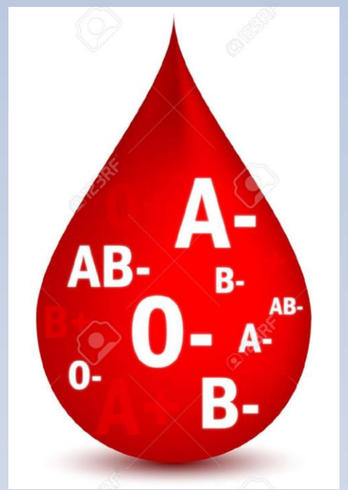
Pre-operative preparation

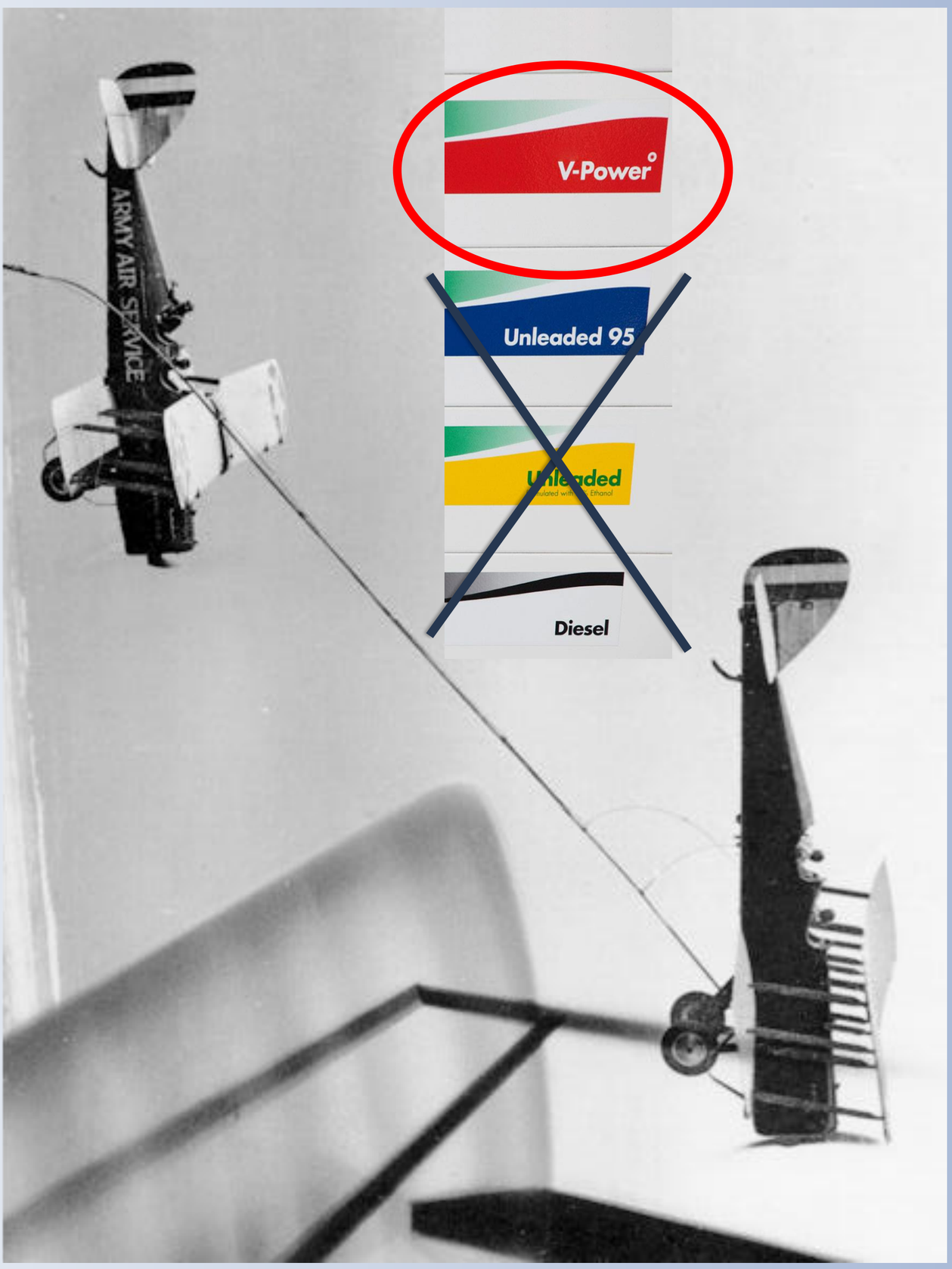
Common pre flight problems

Low Fuel








ARMY AIR SERVICE
V-Power
Unleaded 95
Diesel

The under weight plane

The over weight plane

BMI (kg/m$^{2)}$	WHO classification	New Zealand population		Referred hip and knee arthroplasty population 2006/7 (n=1747)
		2002-3	2011-12	
< 18.5	Underweight	1.3%	1.4%	1%
18.5 - 24.9	Normal	36.1%	33.3%	16%
25 – 29.9	Overweight	36.2%	34.1%	40%
> 30	Obese	26.5%	31.3%	35%
> 40.0	Morbidly obese	Not reported	Not reported	8%

The smoking plane

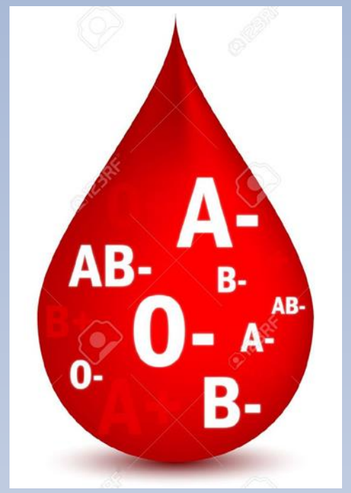
Hypertension

“Thar she blows”

“Sugar Coated” plane


AIR NEW ZEALAND

Case 1 – Low fuel



Male Afghani 71yrs bilat knee OA

April 2014 - Hcue 94g/L

May	Hb 102g/L	(130 - 175)
	Hct 0.32	(0.4 - 0.52)
	MCV 55fL	(80 - 99)
	MCH 17pg	(27 - 33)
	Plts 253 x 10^9/L	(150 - 400)
	WBC 7.0 x 10^9/L	(4 - 11)

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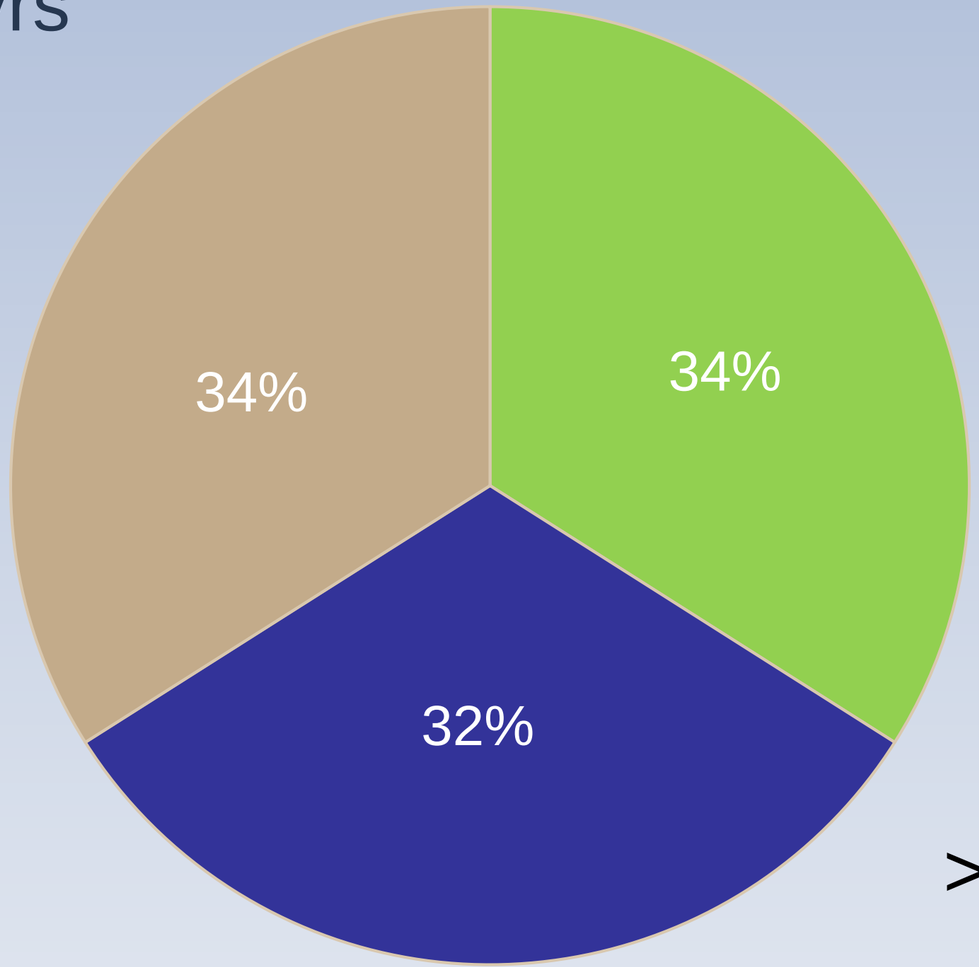
Anaemia in the elderly

> 10% > 65yrs



>50% > 80yrs

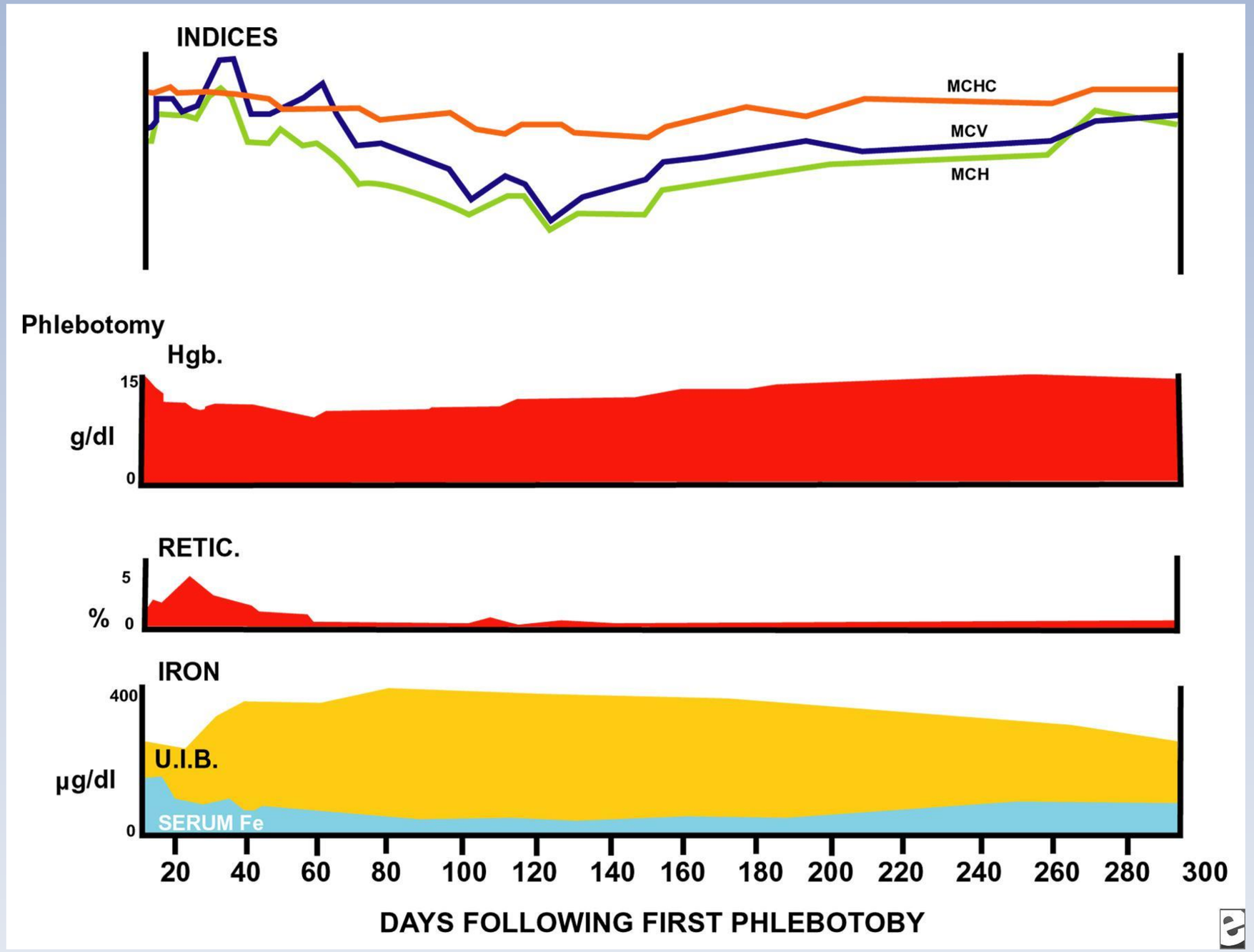
IDA

Infants, young children – breast/cows milk -15%
Menstruating women 4 - 8%
Pregnant women – 13%
Elderly 4 - 5%

Malabsorption – **proton pumps inhibitors**, helicobacter, *coeliac*, gastrectomy, gastric bypass, duodenal/jejunal resection, Chron's, ulcerative colitis

Blood donors
Heart failure, renal failure
Cancer
Obesity

Restless legs


INDICES
MCHC
MCV
MCH
Phlebotomy
Hgb.
15
g/dl
0
RETIC.
5
%
0
IRON
400
U.I.B.
µg/dl
SERUM Fe
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
DAYS FOLLOWING FIRST PHLEBOTOBY

Iron studies

Iron 6 µmol/L	(10 - 30)
Transferrin 3.4 g/L	(2.0 - 3.5)
Transferrin % Sat 7%	(16 - 45)
Ferritin 33 µg/L	(20 - 500)

CRP 12 mg/L (<5)

Soluble Transferrin Receptor
3.21 mg/L (0.83 - 1.76)

Renal function vitamin B12, folate and thyroid function tests all normal

July

Colonoscopy

“half circumferential malignant appearing lesion at 50cm in the sigmoid colon
…it was certainly my impression that the lesion was a **carcinoma**”

October

Sigmoid colectomy

“moderately differentiated adenocarcinoma”

June 2016

>6/12 oral iron 325mg ferrous sulphate (105mg)

Hb 97 g/L	(130 - 175)
MCV 57 fL	(80 - 99)
MCH 18 pg	(27 - 33)
Iron 5 µmol/L	(10 - 30)
Transferrin 2.2 g/L	(2.0 - 3.5)
Transferrin Saturation 9%	(16 - 45)
Ferritin 40 µg/L	(20 - 500)
CRP 91mg/L	(<5)

IV Iron

Fears

Disadvantages - old and new

Advantages - old and new

~~Iron dextran~~

Iron Polymaltose √

Ferric Carboxymaltose √ √

Case 2 – Overweight

Jan 2009
64 yr old female bilateral hip OA

$$BMI = \frac{130.6\ kg}{(1.65\ m)^2} = 48$$

IDDM type 2 - 40/30U insulin, hypertension

Case 2 – Overweight

Jan 2009
64 yr old female bilateral hip OA

$$\text{BMI} = \frac{130.6\ \text{kg}}{(1.65\ \text{m})^2} = 48$$

Walking stick, 100m max, SOB doing housework
night pain

Regular paracetamol & codeine falling asleep in the day

Case 2 – Overweight

July 2010
64 yr old female bilateral hip OA

$$\text{BMI} = \frac{86.1\ \text{kg}}{(1.65\ \text{m})^2} = 31.6$$

43.9kg loss 18 months
1 THR completed, awaiting second
Off all insulin
No longer SOB doing housework

Initially missed appointments
Realised no other option than to lose weight
Patient's mind set completely changed - key to her success

Case 3 – Overweight

July 2013
70 yr old male bilateral knee OA

$$\text{BMI} = \frac{146.8\ \text{kg}}{(1.8\ \text{m})^2} = 45.8$$

Previously active stopped work gained weight, missing playing with grandchildren

Had joined gym and doing “aquacise”

No “quick fix” lifestyle changes required

Case 3 – Overweight

November 2014
70 yr old male bilateral knee OA

$$BMI = \frac{109.8\ kg}{(1.8\ m)^2} = 33.8$$

39.1kg loss 18 months

Symptoms and mobility improved

Surgical opinion – surgery not required, BP reduced

Patient satisfied

Weight loss ongoing

OSA

Diabetes – HbA_1C < 75mmol/mol (9%)
BS11.7mmol/l

Hypertension – cuff size

Anaemia - normocytic

BMI Guidelines for patients having elective primary hip and knee replacement surgery

BMI <35 Proceed with surgery unless other contra-indication

BMI 35 - 40 Surgery at discretion of operating surgeon/anaesthetist

BMI >40 GP managed care and review patient when BMI ≤40

Early Dietetic Intervention

2¼ years – 265 patients BMI >40

58% achieved weight loss

5.3% deferred surgery – symptom reduction

44% lighter than referral weight 1 year post surgery

Mean loss 8.2% body weight

Mobility Action Plan

Evidence based interventions to reduce OA symptoms

Aerobic exercise

Cycling CHAIN programme

Specific muscle strengthening exercises

Lateral wedge insole knee OA

Water based exercise

Education