



Gateshead Health
NHS Foundation Trust



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The Anatomy of a Major Haemorrhage

Chris Izod

Consultant Anaesthetist

Laura Condren

Senior Biomedical Scientist

Rachel O'Donnell

NIHR Clinical Lecturer, Oncology Surgery

The Story....

- Account of a major haemorrhage in theatre
 - Anaesthetist
 - Surgeon
 - Blood Transfusion
- Human factors
- Wider team
- Communication models

Human Factors – The Dirty Dozen

- Lack of communication
- Lack of resources
- Lack of teamwork
- Lack of awareness
- Lack of knowledge
- Lack of assertiveness
- Distraction
- Stress
- Complacency
- Pressure
- Fatigue
- Norms

A Brief Overview....

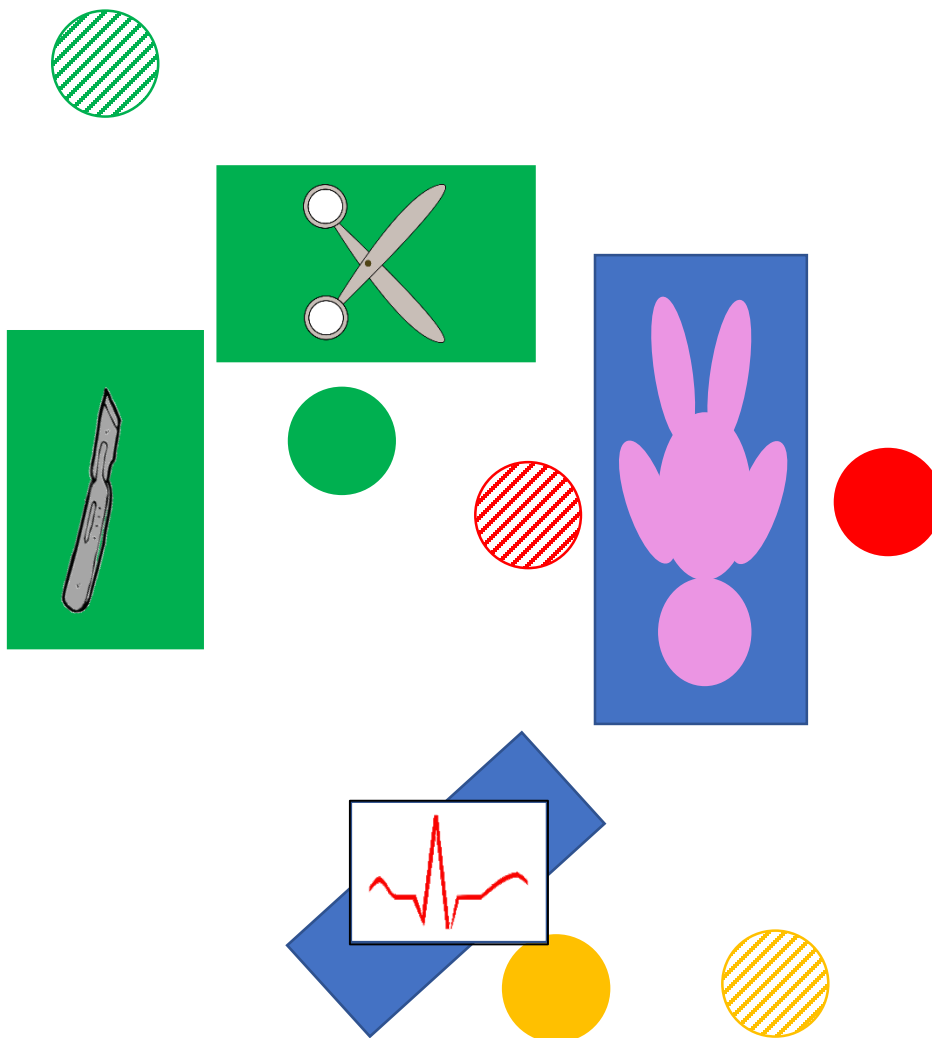
- Patient attended for surgery
- Day 25 patient discharged home
- This is not the whole story

Blood Values: Summary for the day

	Pre op value	13:30	15:00	16:10	17:10	18:30	19:30
Hb	104	103	87	85	93	110	120

The case

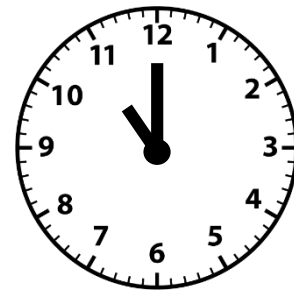
- 55 year old
- Abdo pain, palpable mass
- CA125 = 610
- CT
 - 16cm pelvic mass
 - Ascites, peritoneal and omental disease
 - 13 mm indeterminate liver lesion
- Day 0
 - Laparotomy for cytoreductive surgery



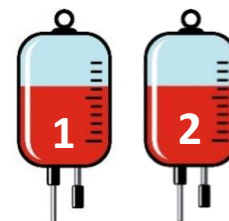
Scrub room

Anaesthetic room

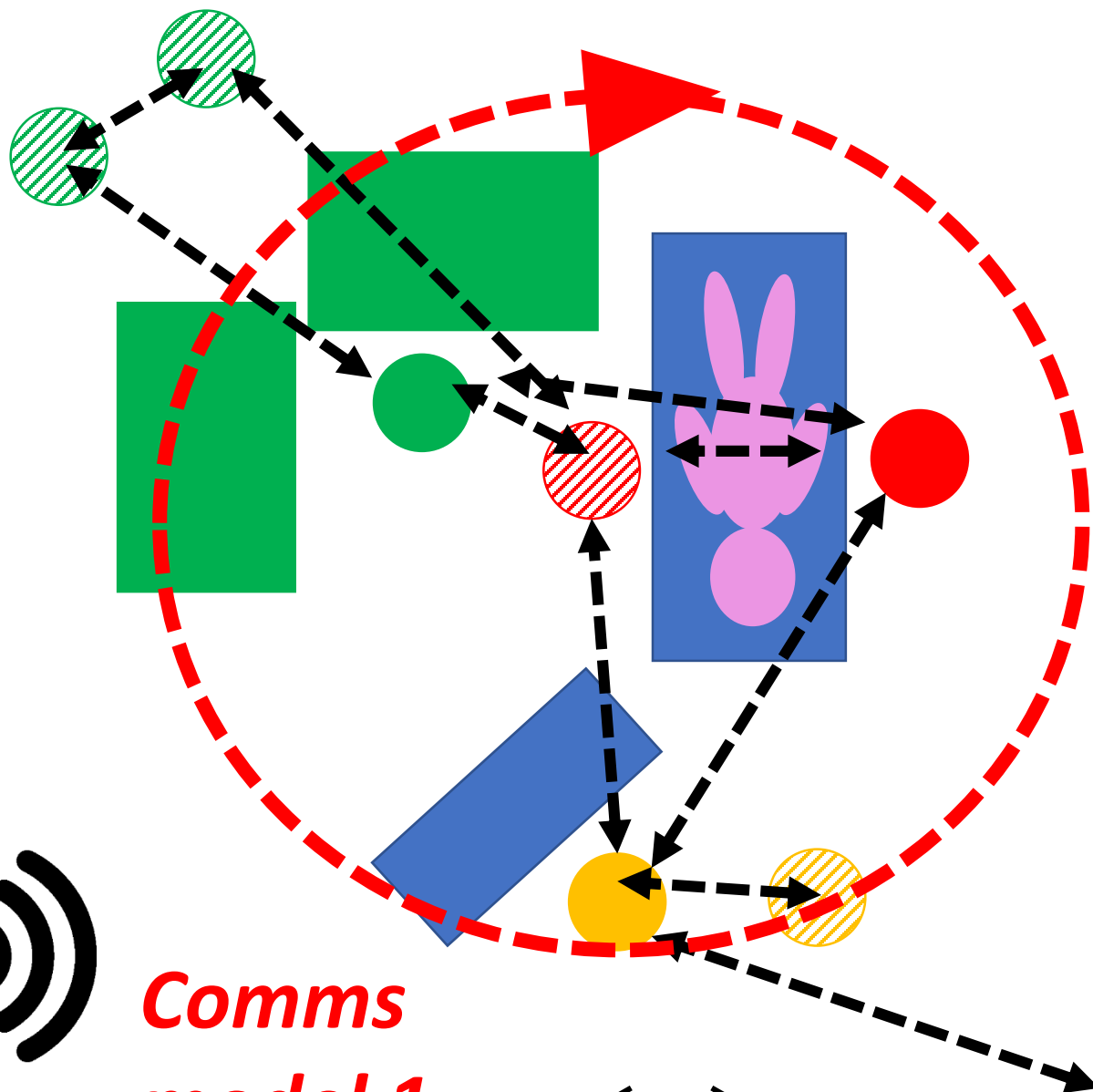


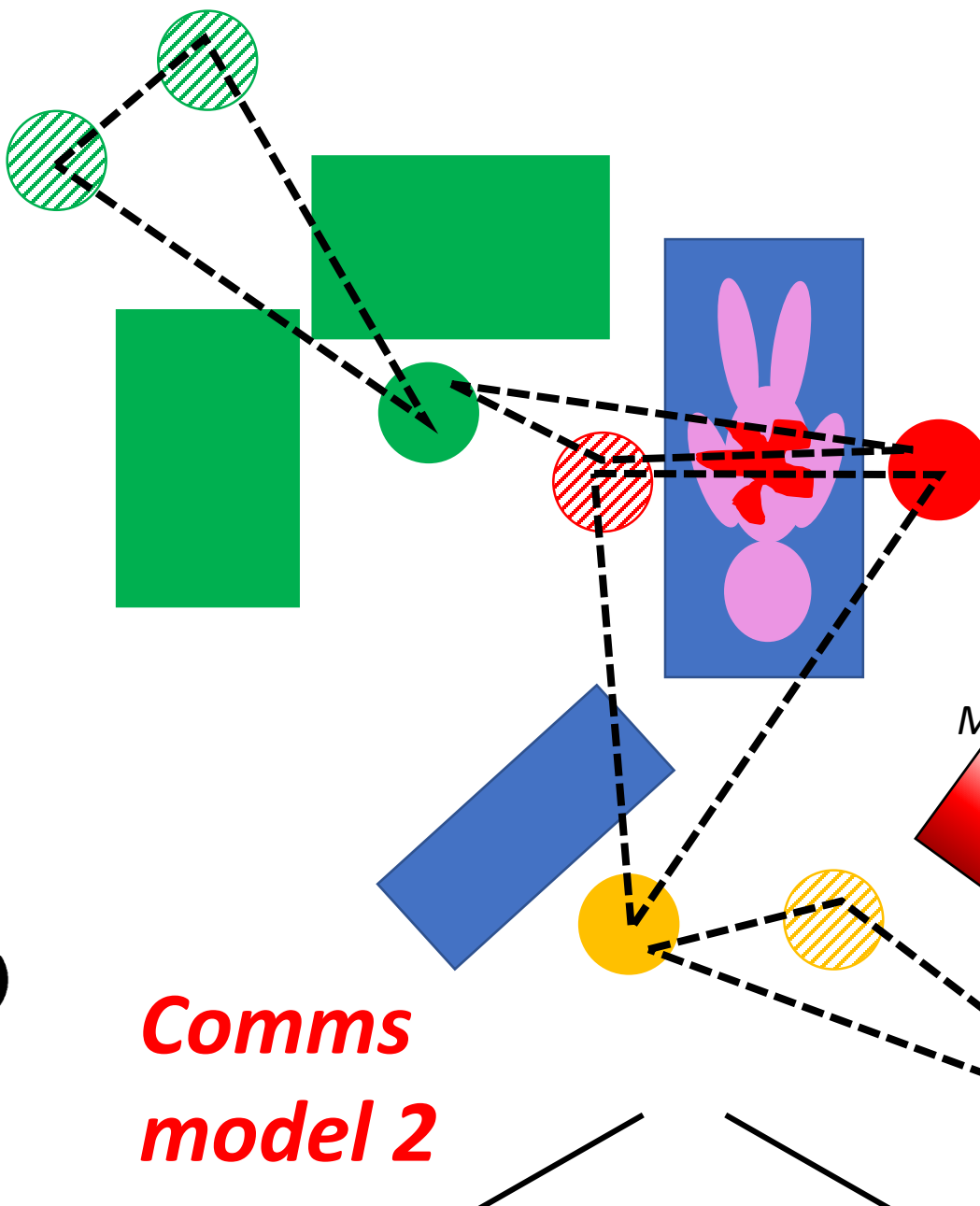
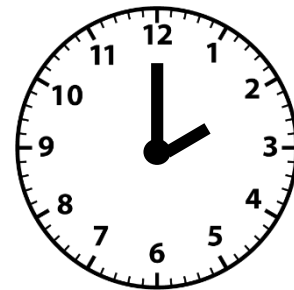


*TAH, BSO
subtotal
colectomy*

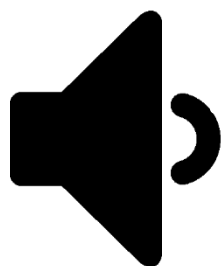
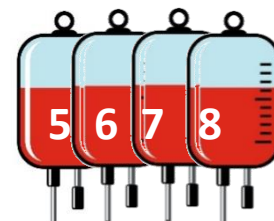


***Comms
model 1***



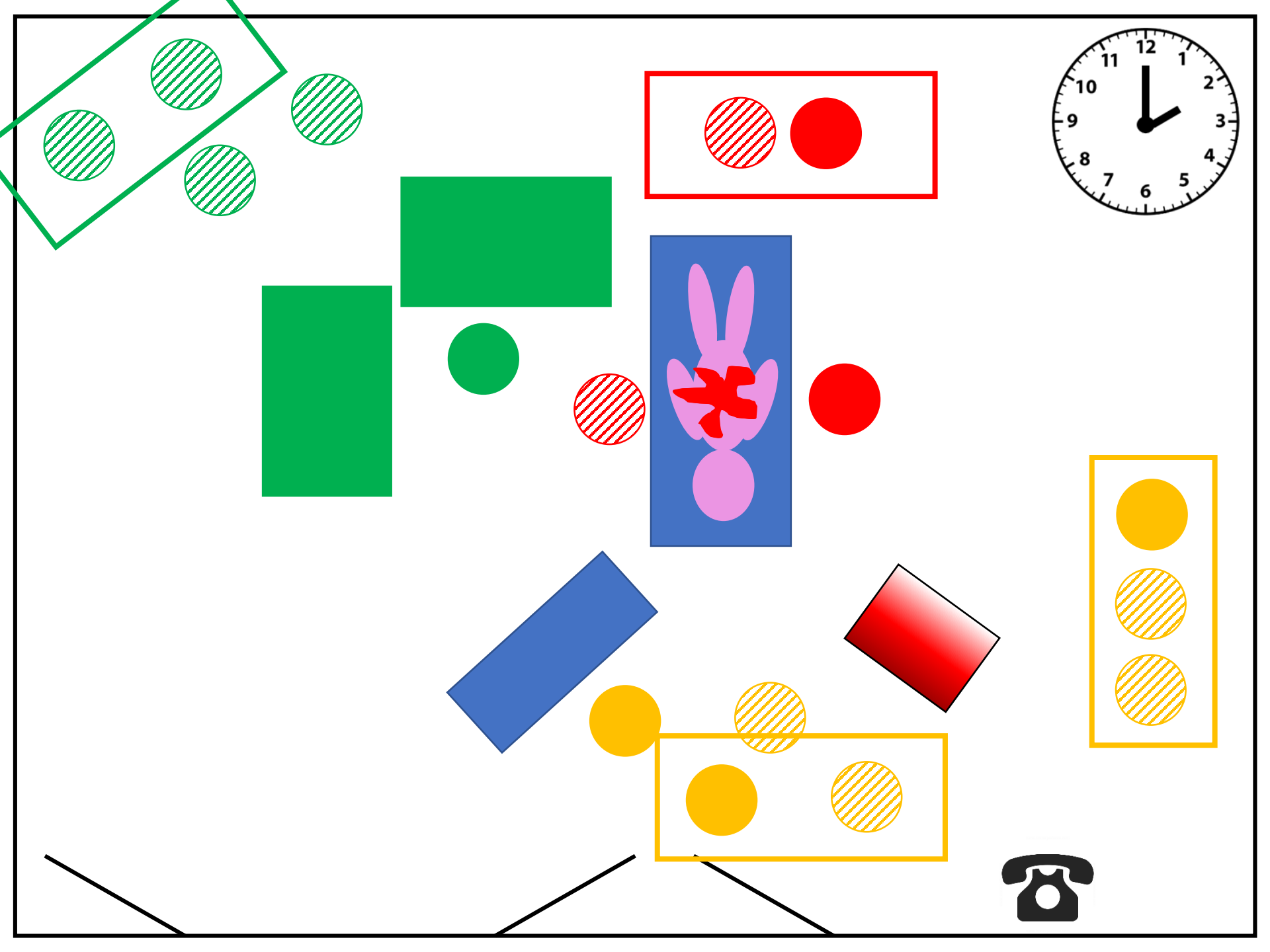


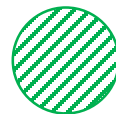
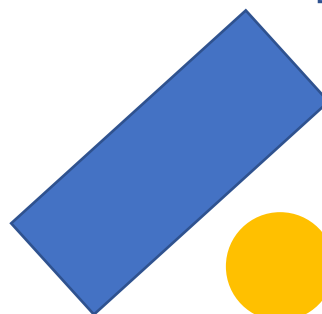
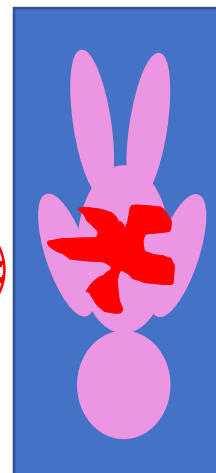
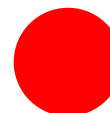
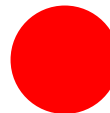
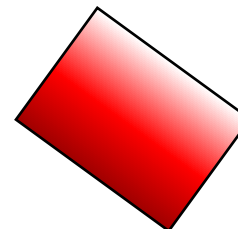
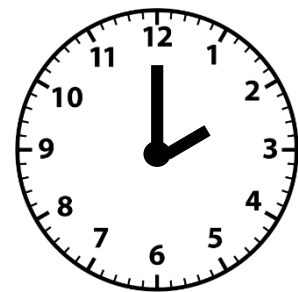
Major haemorrhage protocol

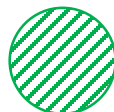
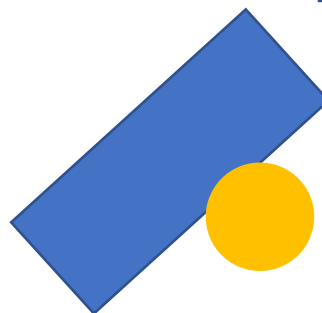
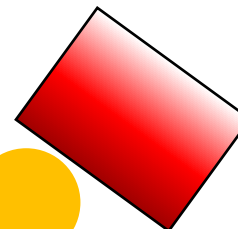
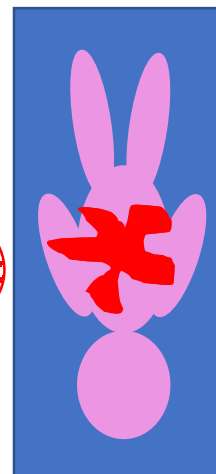
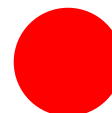
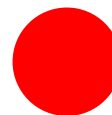
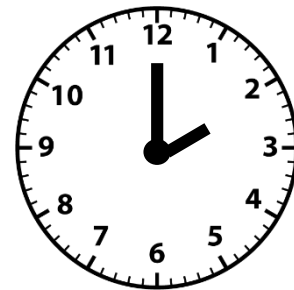


***Comms
model 2***

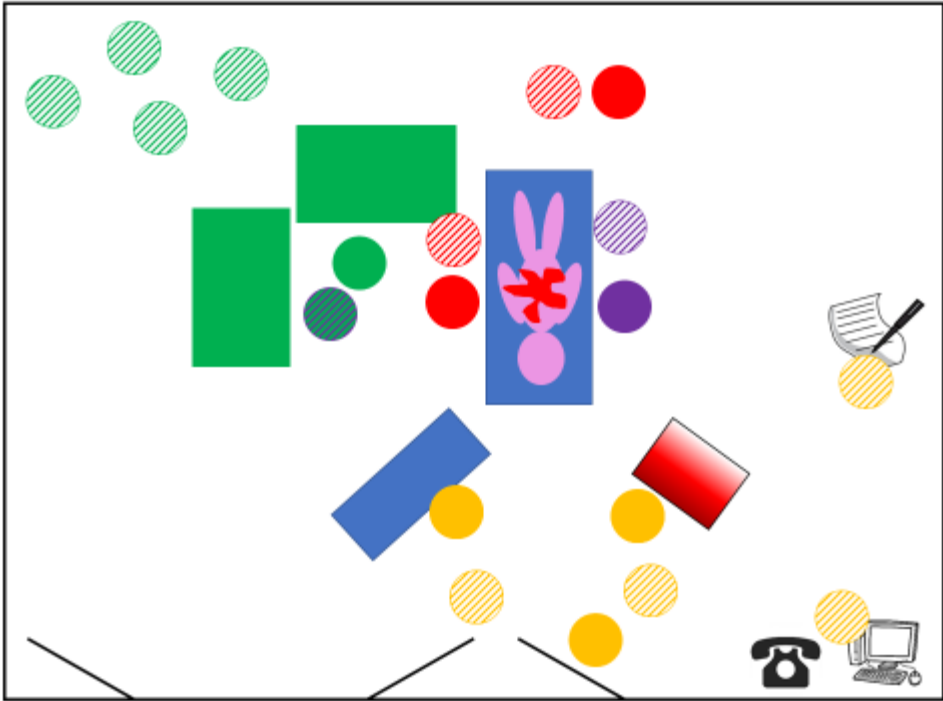




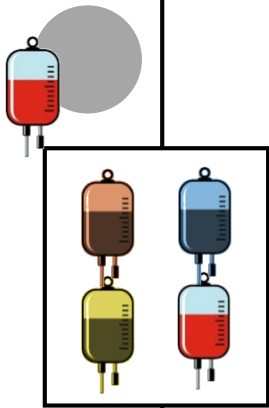
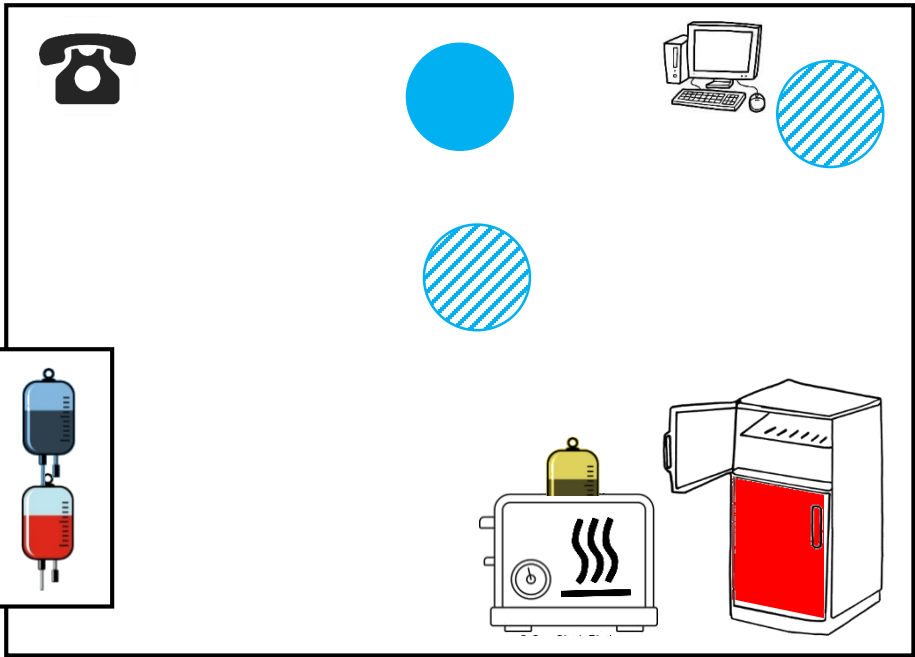




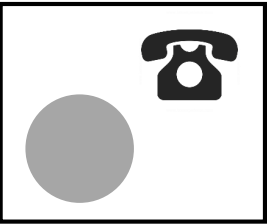
Meanwhile at the lab ...

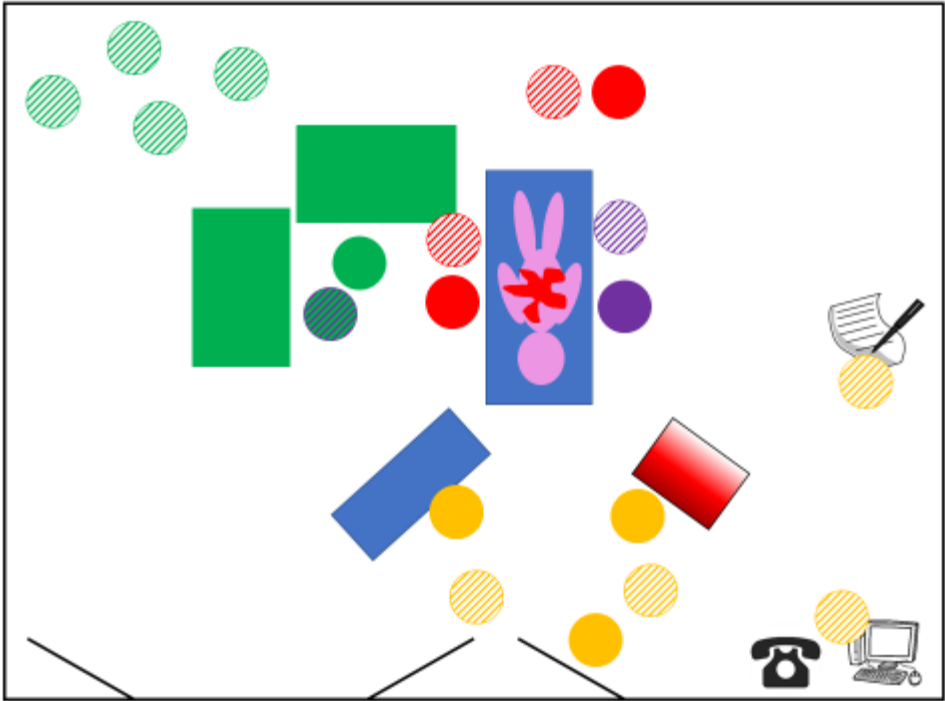


Laboratory

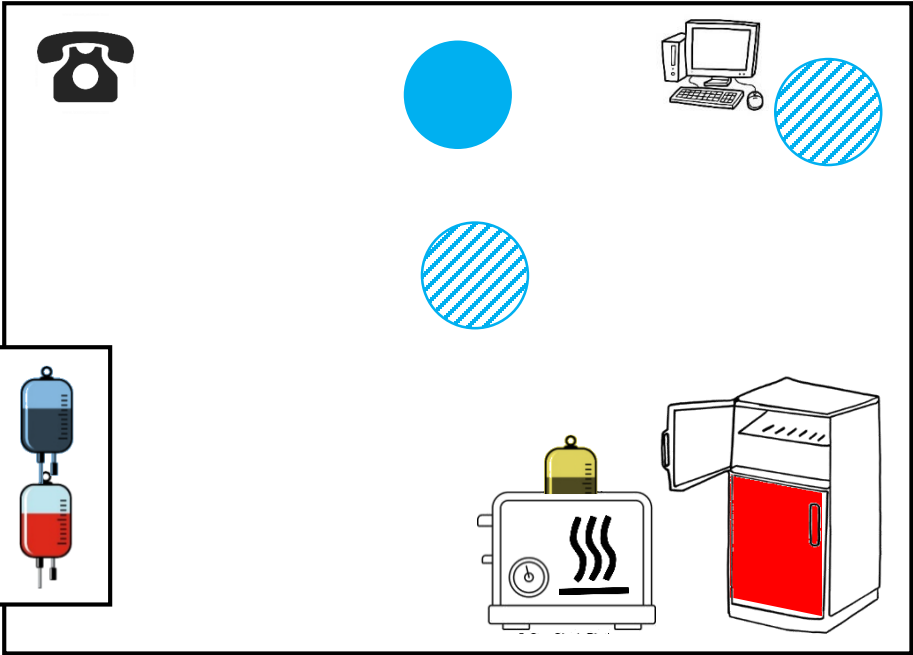


Porters office

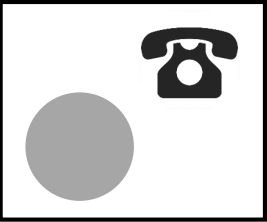


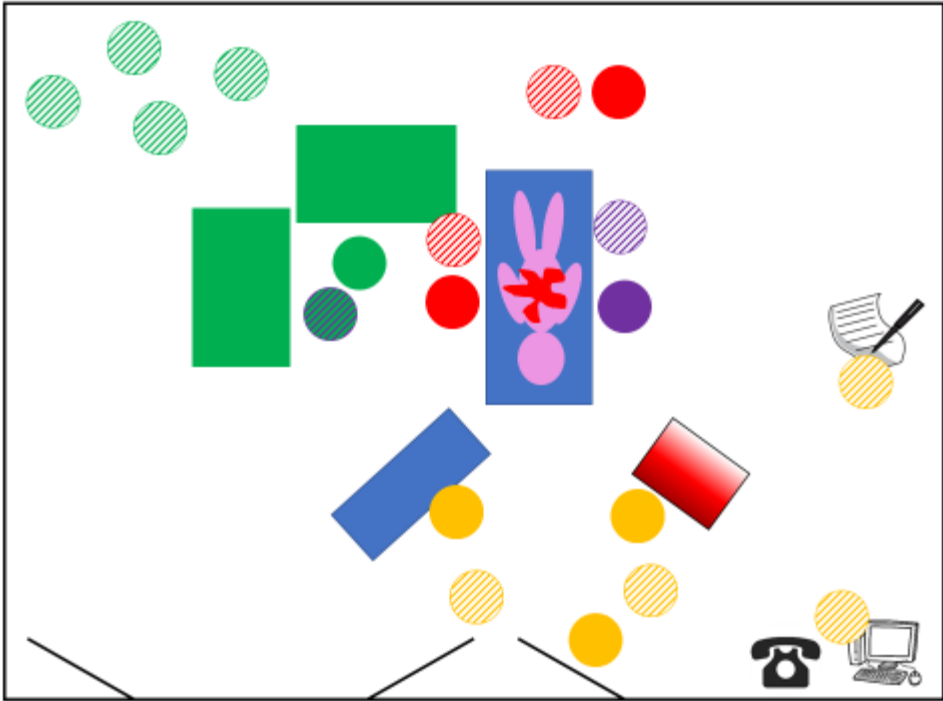


Laboratory

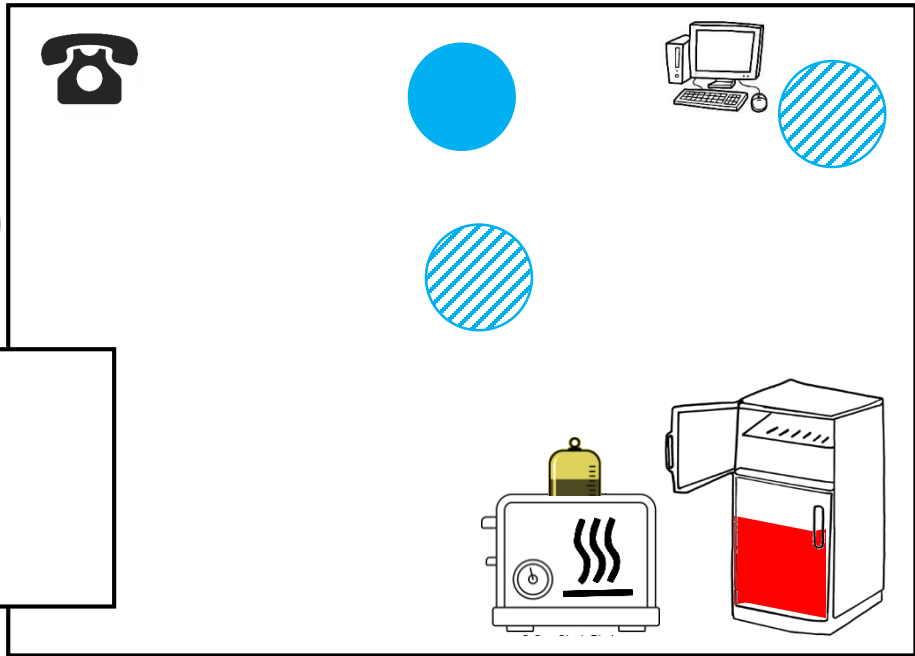


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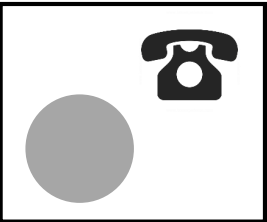


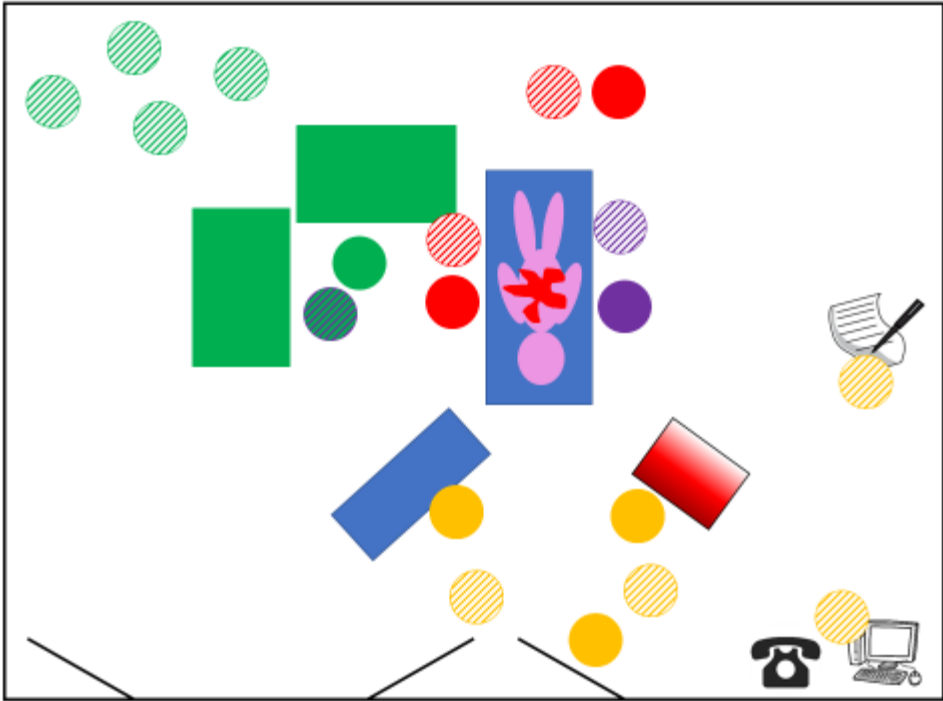


Laboratory

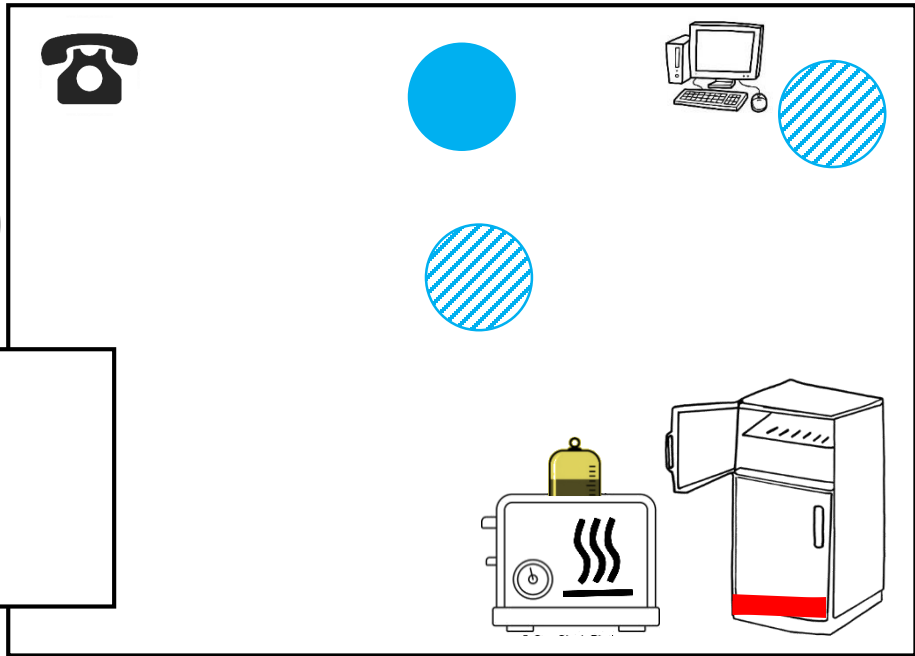


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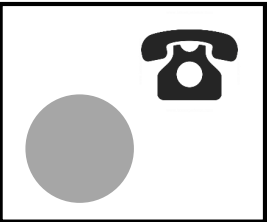




Laboratory



Porters office



Something a bit different ...

Charles Dickens

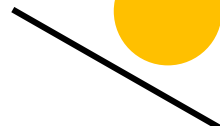
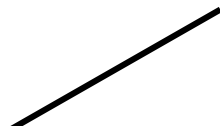
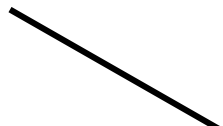
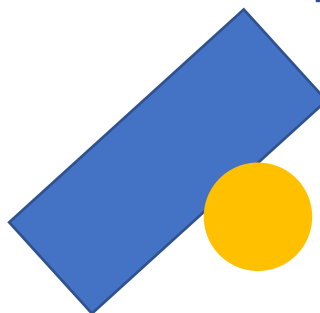
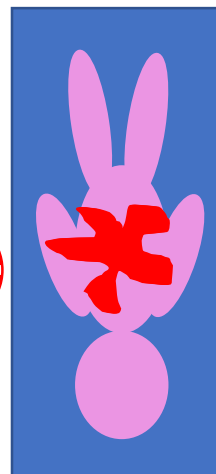
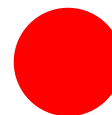
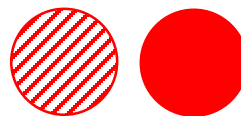
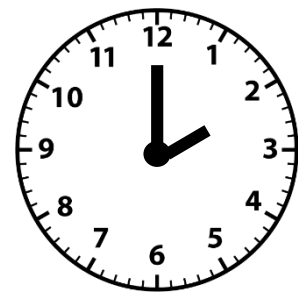
- “Annual income twenty pounds, annual expenditure nineteen nineteen and six, **result happiness.**”
- “Annual income twenty pounds, annual expenditure twenty pounds ought and six, **result misery.**”
 - (Mr Micawber – from *David Copperfield*)
- Money in > money out = **Happiness**
- Money out > Money in = **Misery**

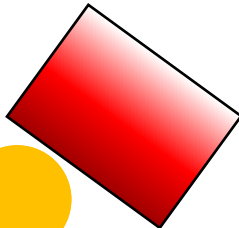
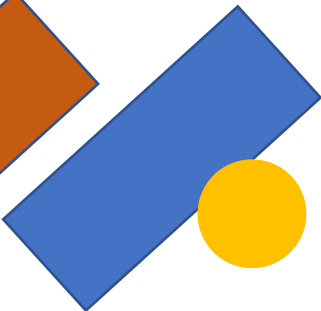
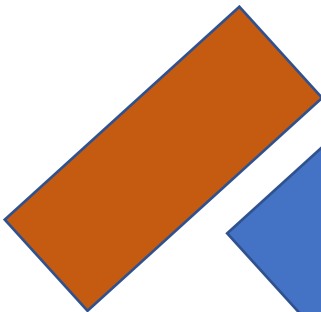
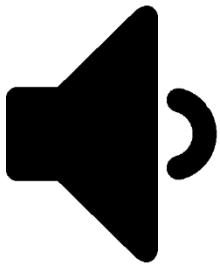
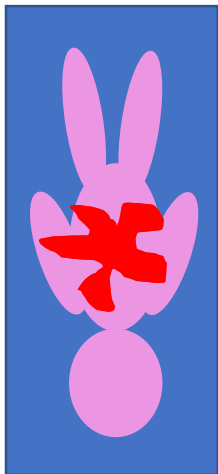
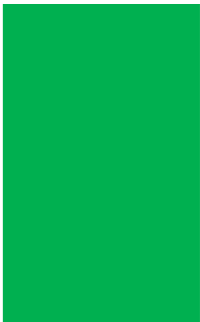
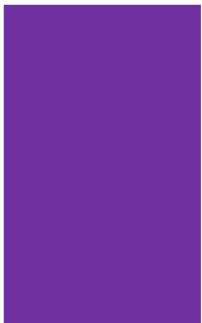
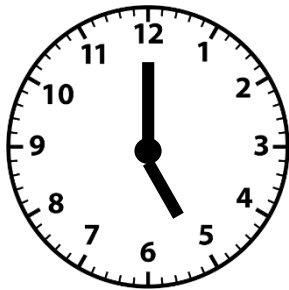
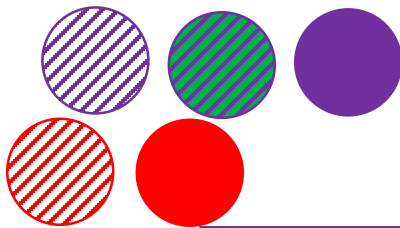
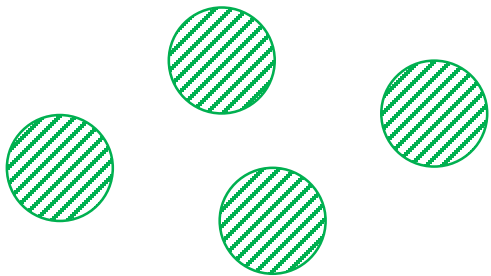
In the context of Major Haemorrhage

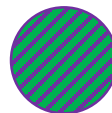
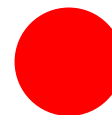
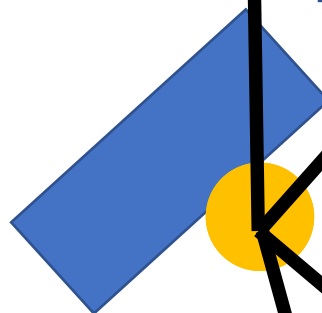
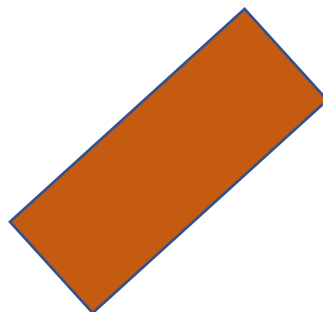
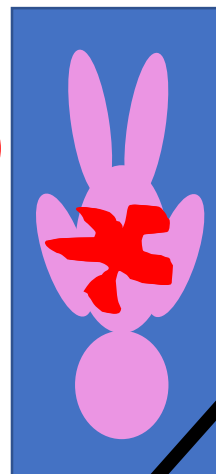
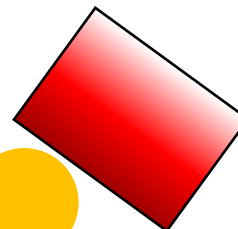
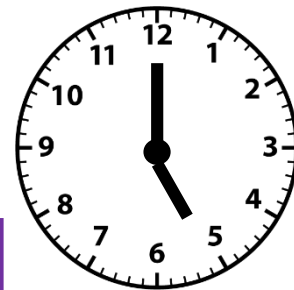
- Rate of blood transfusion > Rate of haemorrhage = **Anaesthetic happiness (relative)**
- Rate of haemorrhage > Rate of blood transfusion = **Anaesthetic misery**

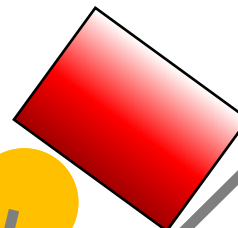
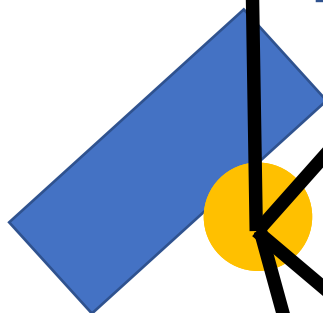
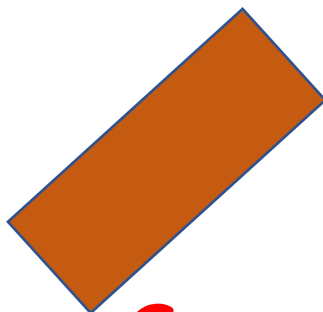
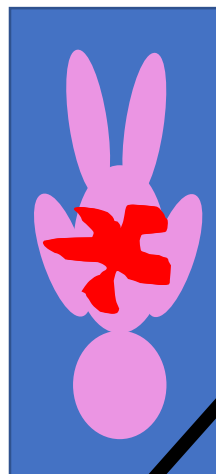
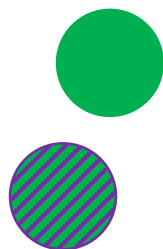
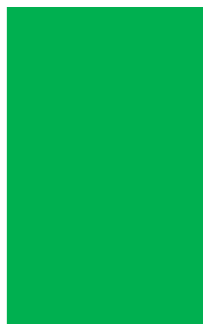
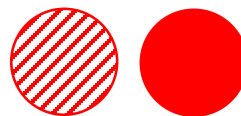
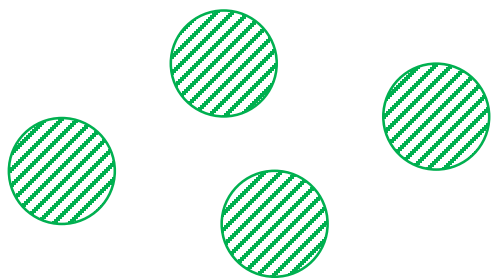
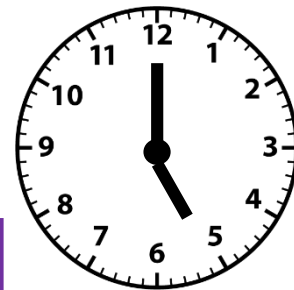
Human Factors – The Dirty Dozen

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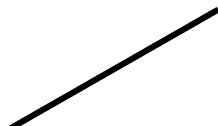
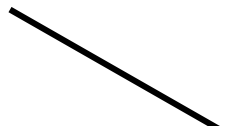


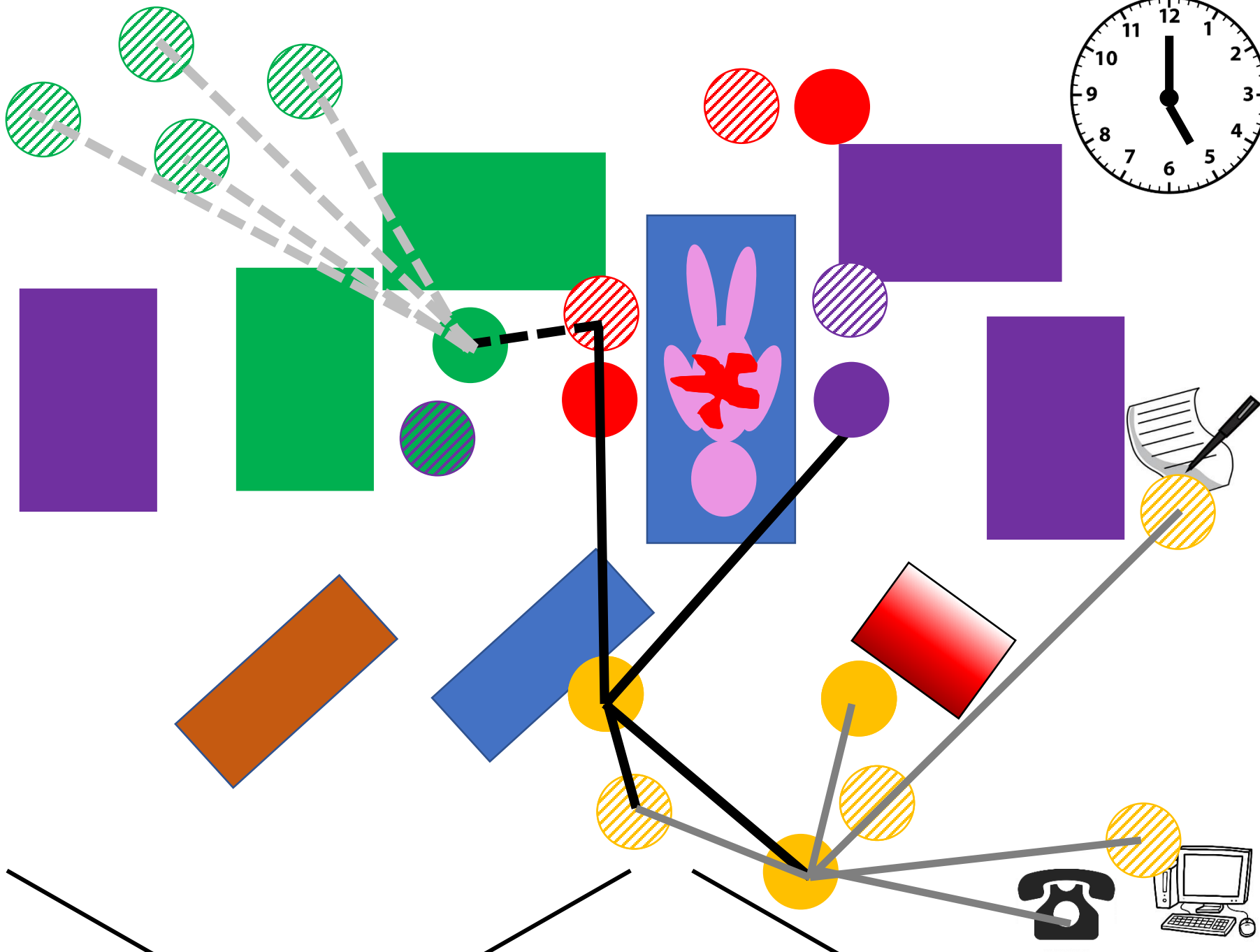
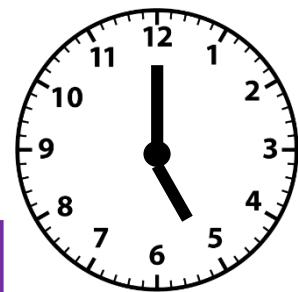




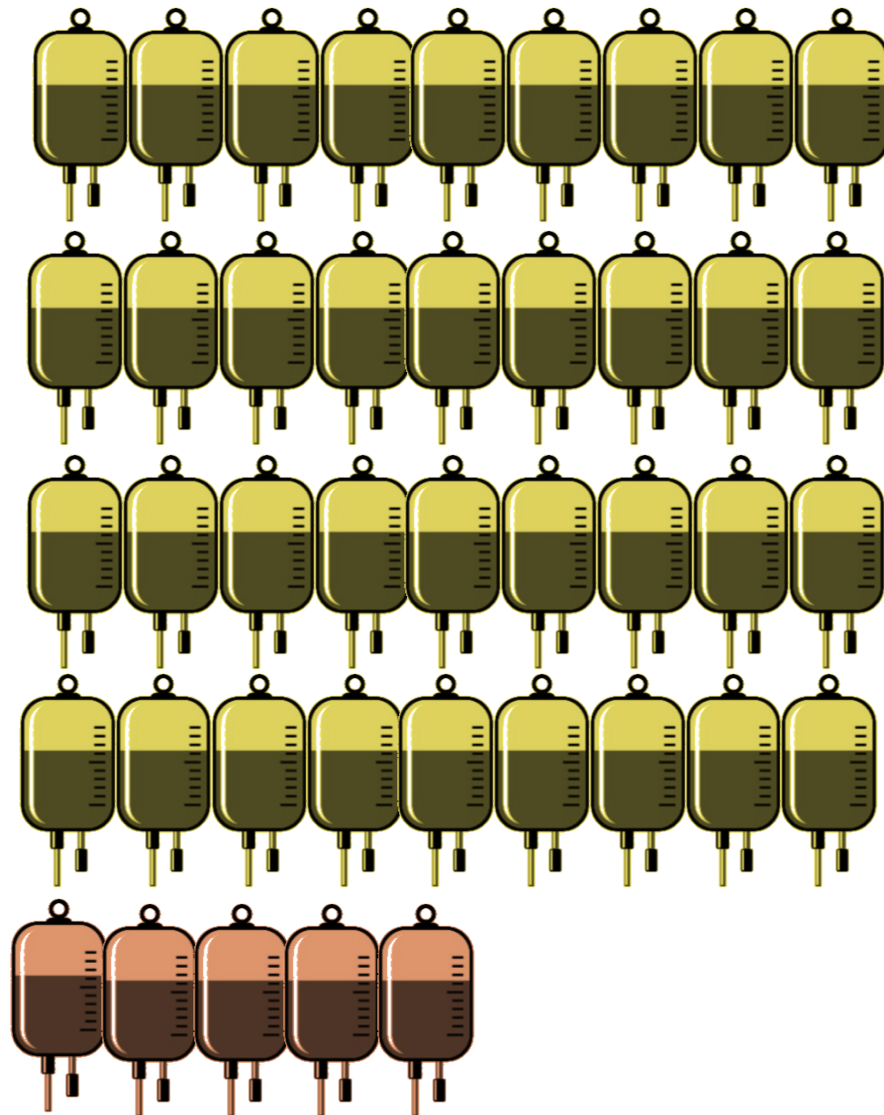
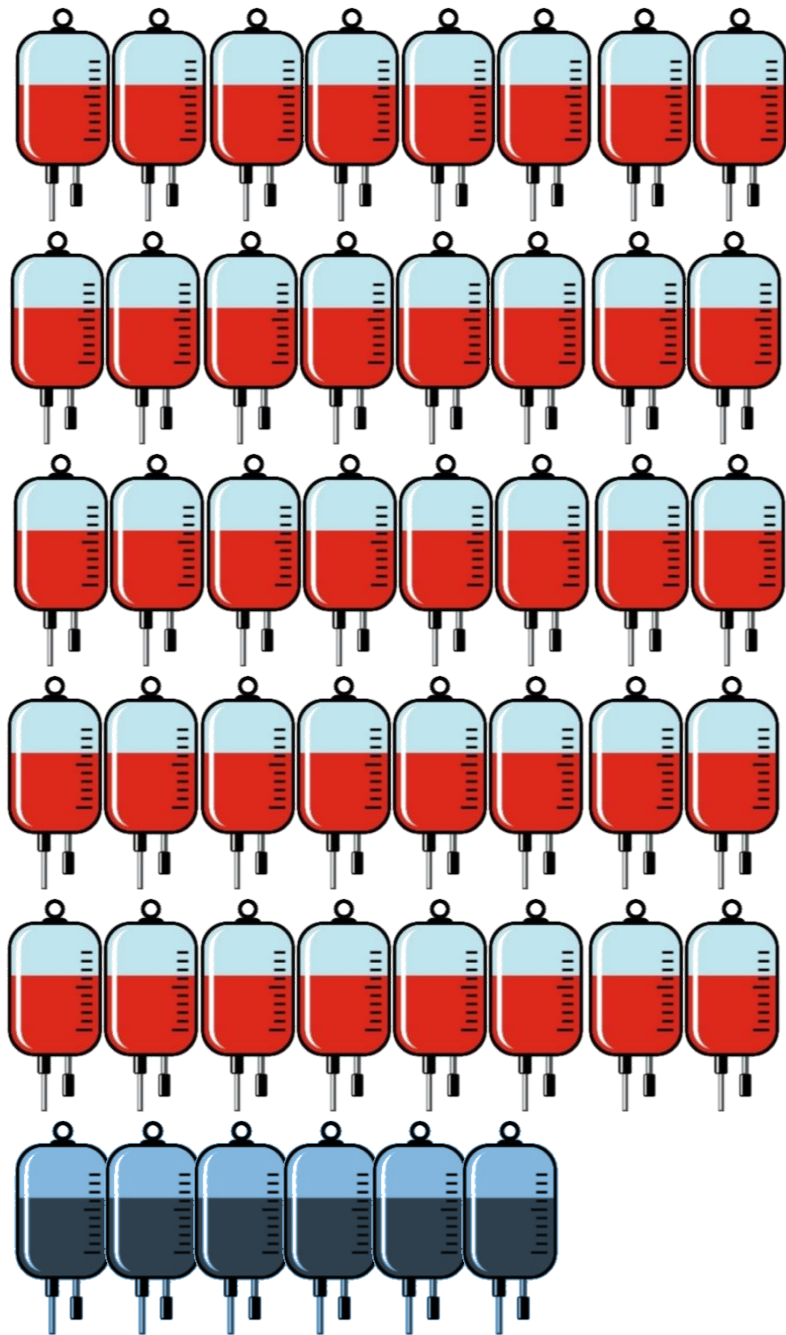


***Comms
model 3***





Summary of blood products given...



Patient outcome

- Discharged home from hospital day 25
- Gave the **surgical** team a really nice gift

Anaesthetic challenges



Giving blood at such a rapid rate



Large team – roles assigned



Communication

Within theatre
Outside theatre



Running the
anaesthetic

TIVA
Drug doses



?Cell salvage

Surgical challenges



Control of haemorrhage



Liaison with other specialities



Doing
“nothing”

*Don't just do
something, stand
there!*

Blood bank challenges



MHP vs 'a bleeder'



Blood bank stocks

Replaced A pos stock
TWICE



NHS BT supplies

EIGHT orders to NHS BT



What's new....?

New Rapid Infusion Device



New 'HIT' trolley


- **H**igh **I**ntensity **T**reatment Trolley
- Contains all necessary consumables for massive haemorrhage



Vocera



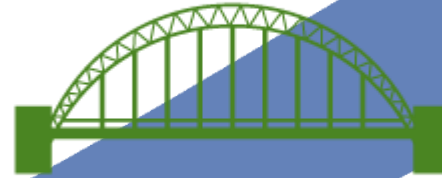
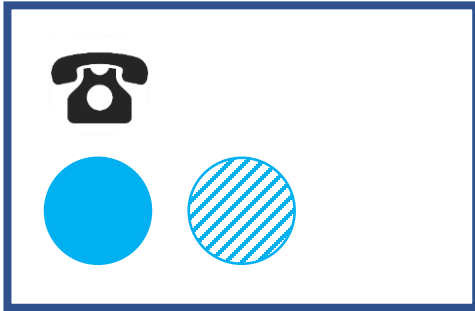
Blood transfusion services

 Clinical Pathology Services		Document number: HA-BTX-FOR-060.UN	Version: 1.2
		Major Haemorrhage Activation	
		Site Location: UN	

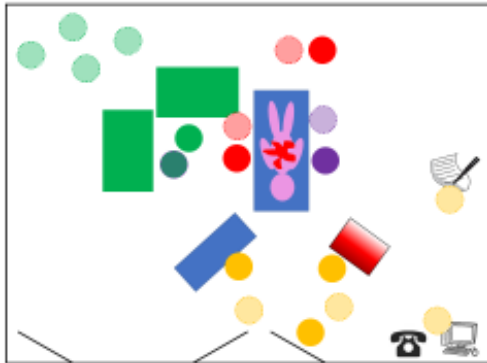
Patient Hospital number	
Patient Name	
Patient Location	
Cause (e.g. AAA)	
Who activated the protocol?	
Contact number for activator during MHP	
Was the trigger phrase used?	
Was the correct phone number dialled?	
Number of red cells issued	
Number of FFP units issued	
Number of platelet units issued	
Number of cryo units issued	
Number of red cell units returned	
Number of FFP units returned	
Number of platelet units returned	
Number of cryo units returned	
Was the lab contacted to "stand down"	
Were there any problems during the MHP?	
Patient alive >24 hours of activation?	
Comments	
Site	
Date	
Time	
BMS/AP	

- Major transfusion sheet
 - Coordination of care
 - 1 point of contact
 - Audit
- Vocera
 - Hands free

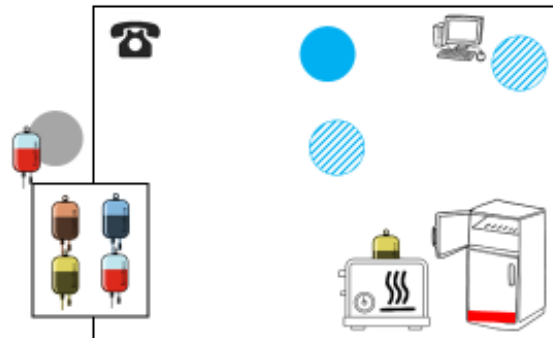
NHS BT Newcastle



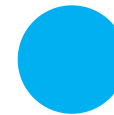
QEH Gateshead



Laboratory



Porters office



South Tyneside



Sunderland

Summary

- This unusual case highlights
 - Importance of management of human factors in an acute and prolonged emergency
 - Changing models of communication
- Highlights practical obstacles to managing a major haemorrhage when blood resources are finite
- Opportunity to share our learning and changes made as a result

Acknowledgements

- GynaeOnc Cons 1
- GynaeOnc Cons 2
- GynaeOnc Cons 3
- Upper GI Cons
- Vascular Cons
- HPB Cons
- HPB Registrar
- GynaeOnc Fellow 1
- GynaeOnc Fellow 2
- GynaeOnc Fellow 3
- HCA 1
- HCA 2
- Anaes Cons 1
- Anaes Cons 2
- Anaesthetic Reg 1
- Anaesthetic Reg 2
- ODP 1
- ODP 2
- ODP 3
- Transfusion BMS 1
- Transfusion BMS 2
- Associate practitioner 1
- Associate practitioner 2
- Porter 1
- Porter 2
- NHS BT staff
- Courier 1
- Courier 2
- Courier 3
- Courier 4
- Courier 5
- Courier 6
- Courier 7
- Courier 8
- Scrub nurse 1
- Scrub nurse 2
- Scrub nurse 3
- HPB scrub nurse
- Floor nurse 1
- Floor nurse 2
- Floor nurse 3
- ITU Cons 1
- ITU Cons 2