

# Human Factors and Healthcare

Clinical Risk Department  
Clinical Governance Support Unit

# What is Human Factors?

- ▶ “the scientific study of the relationship between man and his working environment” (Murrell, 1965)
- ▶ “the study of how humans accomplish work-related tasks in the context of human-machine systems” (Meister, 1989)
- ▶ “applied information about human behaviour, abilities, limitations and other characteristics to the design of tools, machines, tasks, jobs and environments” (Sanders & McCormick, 1993)

# What is Human Factors?

**Anything that affects a person's performance.**



**What would affect the performance of a nurse?**

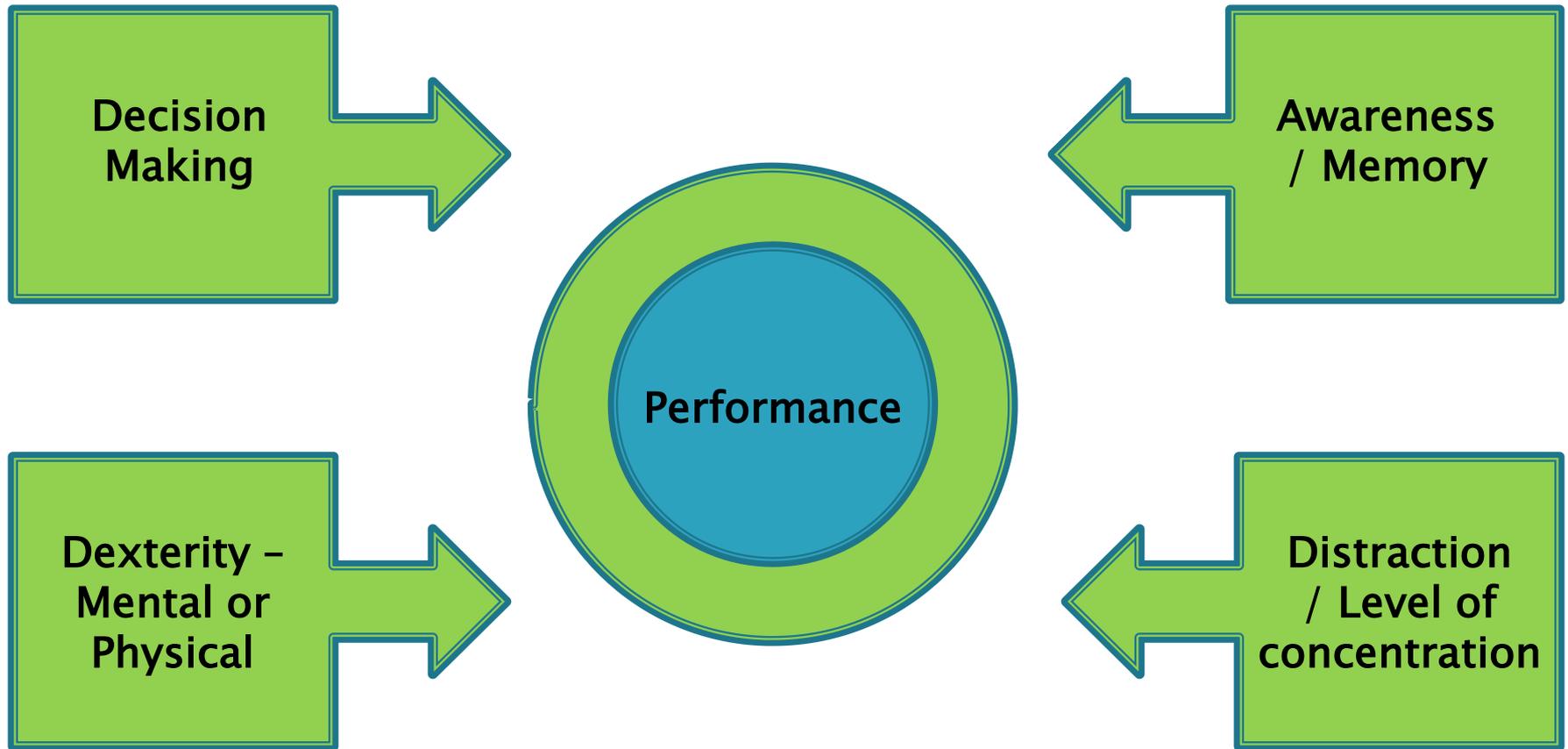
# What is Human Factors?

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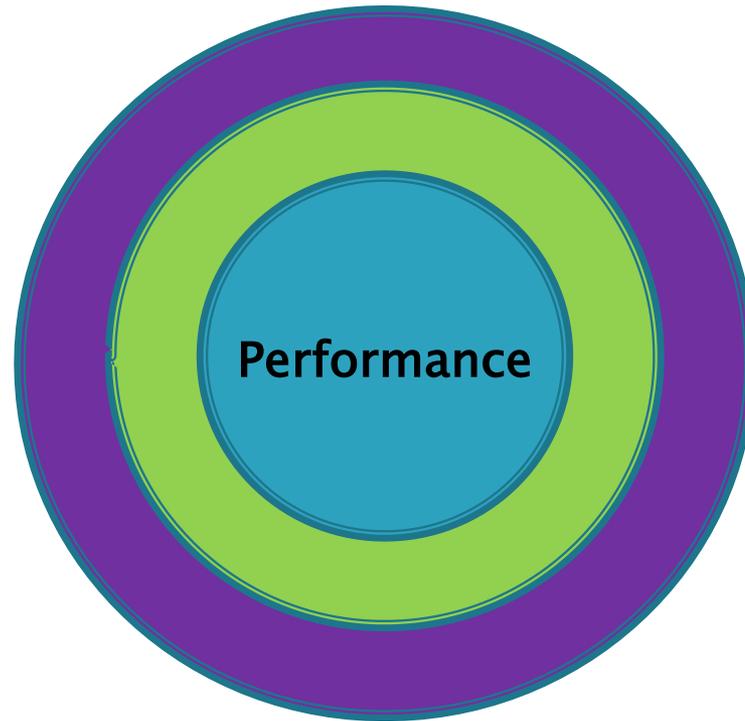
# Performance: direct factors



# Performance: Potential factors

## External

Design  
Environmental  
System failures  
Alert systems  
Documentation  
Time  
Ergonomic  
Automation  
Complications  
Emergencies



## Internal

Fatigue  
Illness  
Physiological  
Stress  
Psychological  
Negative attitudes  
Language  
Relationships  
Cultural

# Performance: Potential factors

Design

Environmental

System failures

Alert systems

Documentation

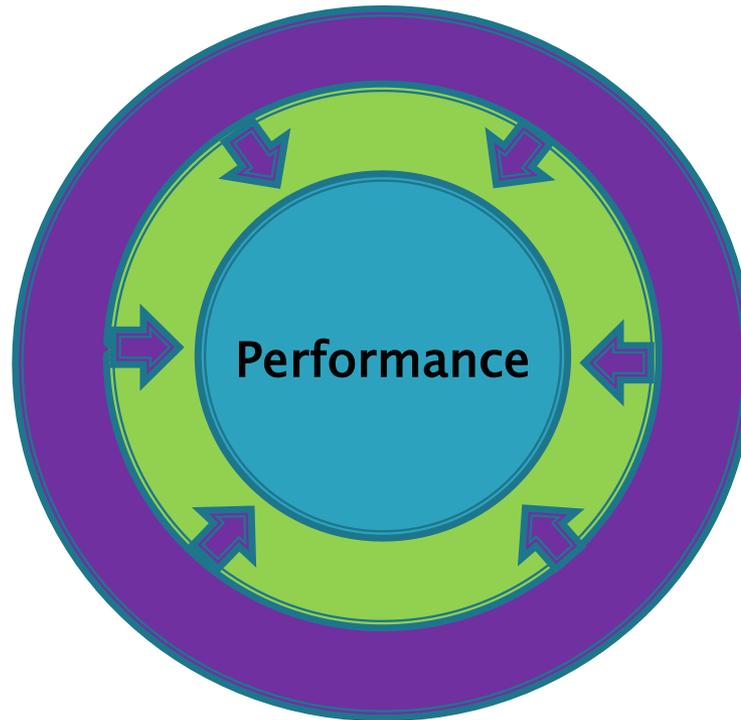
Time

Ergonomic

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Interactivity between factors  
will increase influence

# HALT

- ▶ Hungry
- ▶ Angry
- ▶ Late
- ▶ Tired



Decision Making ↴

Behaviour ↴

Team work ↴

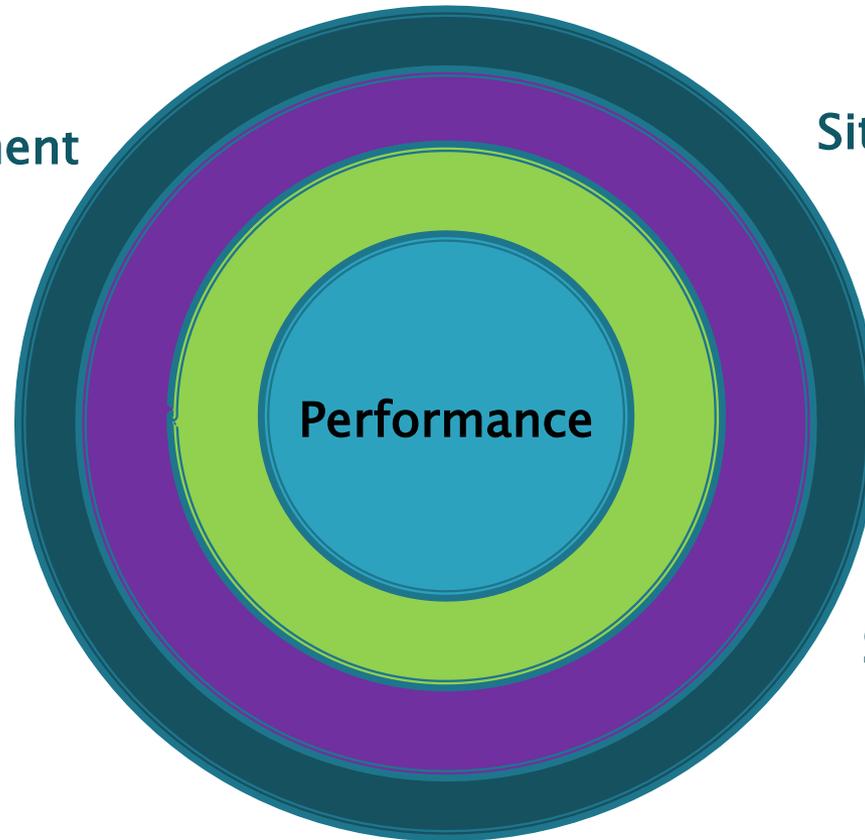
Communication ↴

Documentation ↴

Concentration ↴

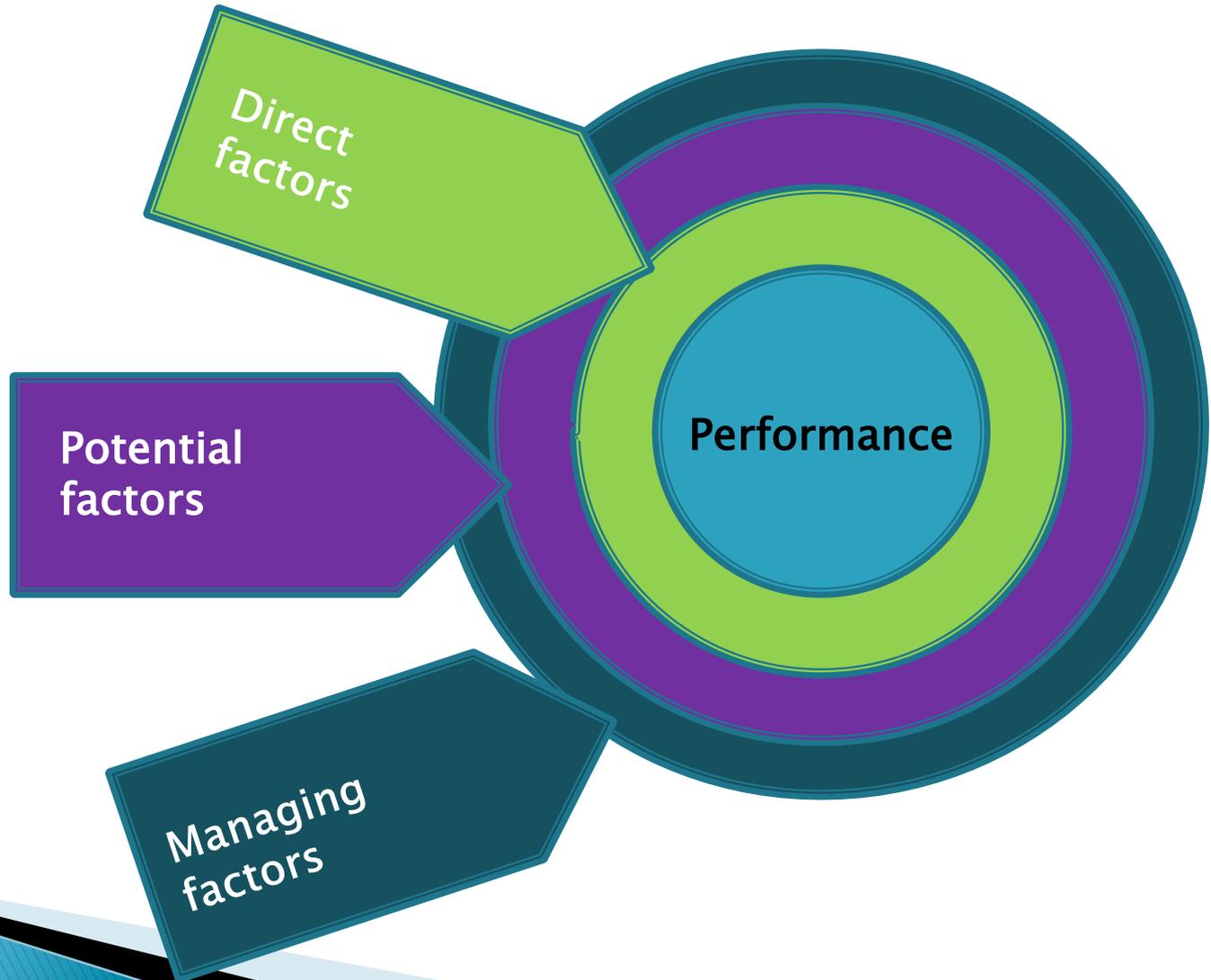
# Performance: Managing factors

Communication  
Workload management  
Teamwork  
Fitness  
Decision making  
RCA  
Positive attitude  
Behaviour  
Motivation  
Discipline  
Problem prevention



Monitoring  
Situational awareness  
Planning  
Review  
Leadership  
Concentration  
Knowledge  
Clinical skills  
Protocols  
Checklists  
Stress management

# Performance: Managing factors

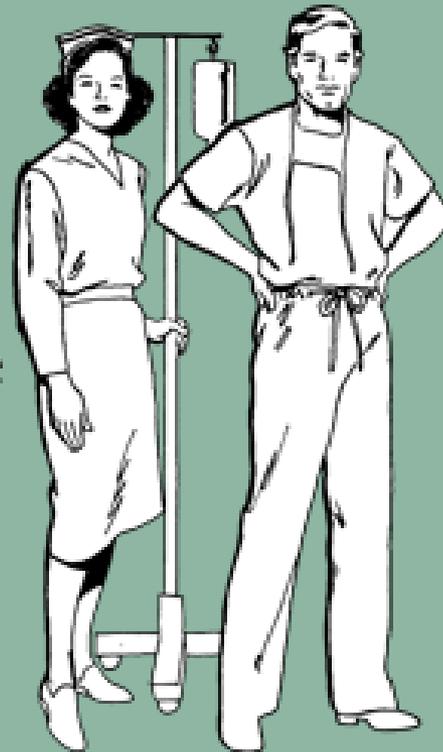


# Why does this matter?

- ▶ If something doesn't work, we need to work out why it doesn't work to be able to put it right.
  - ▶ If something goes wrong, we need to work out why it went wrong to be able to put it right.
  - ▶ Key to finding the 'why' answers is the human factors involved.
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# Something doesn't work

I've got 99 problems  
and they all have to be  
solved by 0700 unless I  
want to  
listen to day shift whine  
about them.



som<sup>ee</sup>cards  
user card

# 2 nurse checks

## Problems

- 2 people splitting one task
- Independent Calculations not performed
- All elements of the double check not done
- Elements of the policy not followed (drug not known)



## Human Factors

- Time constraints
- Embarrassing to question a colleague (especially senior)
- Trust
- Responsibility more with 1<sup>st</sup> nurse
- Stress
- Confirmation bias

# No interruptions policy

## Problems

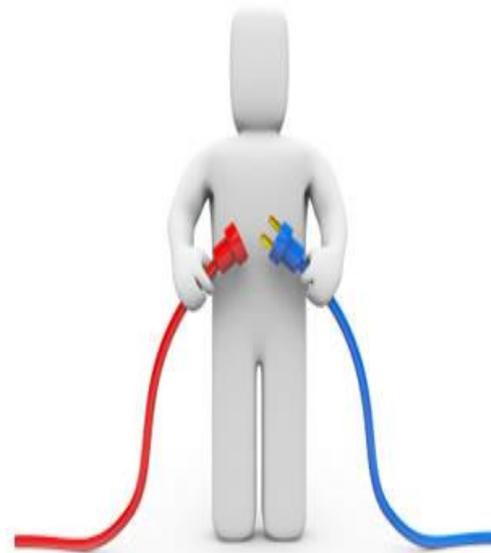
People still interrupt

Staff let them interrupt

Little distinction between legitimate interruptions and inappropriate interruptions

Accepted that it doesn't work

Patients not informed of process



## Human Factors

Everyone is busy and don't want to wait to pass on or gain information

Staff are trained to be helpful

Staff don't want to say 'no'

Systems are not set up to support the policy

Hierarchy trumps the policy

# What can help make it work?

- ▶ Proper planning with advanced problem solving
  - ▶ The system has to be easy to do the right thing
  - ▶ We cannot change the condition of those who do the work, but we can change the conditions within which they work
  - ▶ You need to believe in the process
  - ▶ You need to want to make it work
  - ▶ You need to work as a team
- 



# Something goes wrong

- ▶ The first lesson in reducing avoidable harm is the realisation that we will and do make errors.
  - ▶ We are good at describing what went wrong but less so about why it went wrong.
  - ▶ To work this out and find the correct learning actions following an adverse event, you need to understand the type of error.
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**Active errors** – occur at the level of the frontline operator with the effects being felt almost immediately. Acts & omissions.

**Latent errors** – tend to be removed from the direct control of the operator and include things such as poor design and bad management decisions.



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# The language of error

- ▶ The plan may be OK, but the actions don't go as planned. (unintended action)  
These are called *slips* and *lapses*.
- ▶ The actions may go as planned, but the plan is inadequate to achieve the desired goal.  
(intended action)  
These are called *mistakes*.

# The language of error

- ▶ The plan is a known deviation from policy / procedure / accepted practice. Short cuts, workarounds, stages / checks missed. The act is deliberate but not the occasional bad consequences. Violations are shaped mainly by attitudes, beliefs, group norms and safety culture. (intended action)  
These are called *violations*.

# Medication Administration

I don't always check the name band

There is not enough time to do the medication round

Medication errors are common

I don't always think about the patient in relation to the drug



I don't always know the drug I am giving

Medication administration feels very task driven

I worry that I will do something wrong

No interruptions doesn't work

# Violations- name band

You don't have time to check all the name bands

It is embarrassing to ask as the patient thinks I have forgotten who he is

It is not required when I know the patient's name



It is not as necessary as it is for a blood transfusion

If the patient is sleeping I might not want to disturb them if I can give it in an infusion bag or IV

# Chance to Check – content

- ▶ Identifying 4 key statements that must be self asked on each administration

# Chance to Check 1.

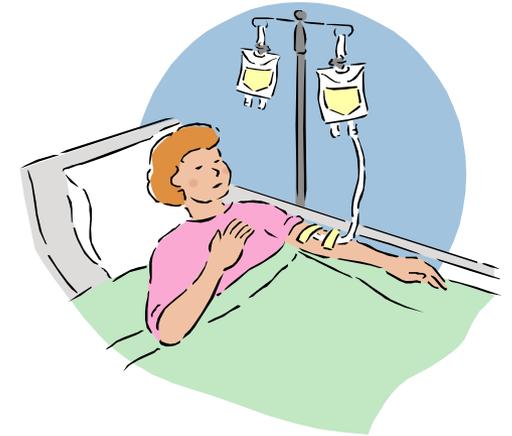
✓ I know  
what this  
drug is

I think this when  
I am dispensing  
the drug into the  
medicine cup.



# Chance to Check 2.

- ✓ **This drug and dose is suitable for this patient** I think this when I have dispensed the medication and I am thinking of the patient I plan to give it to (including allergies).

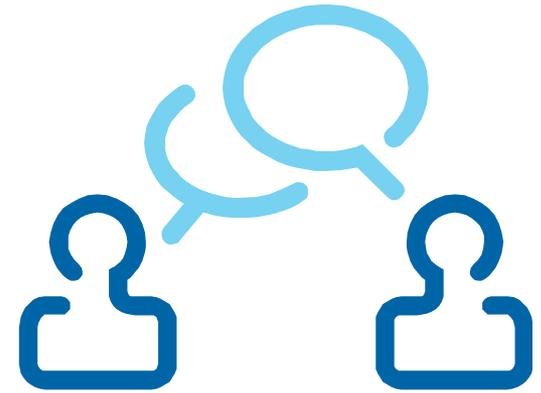


# Chance to Check 3.

✓ **The patient verbally confirms their name if possible**

**On approach to the patient I ask for confirmation of name.**

**“Hi Mr Brown, I have your medicines, tell me your full name please”**



# Chance to Check 4.

✓ The patient's name band matches the kardex

I check the patient's name band with the name and DOB or CHI number on the kardex.



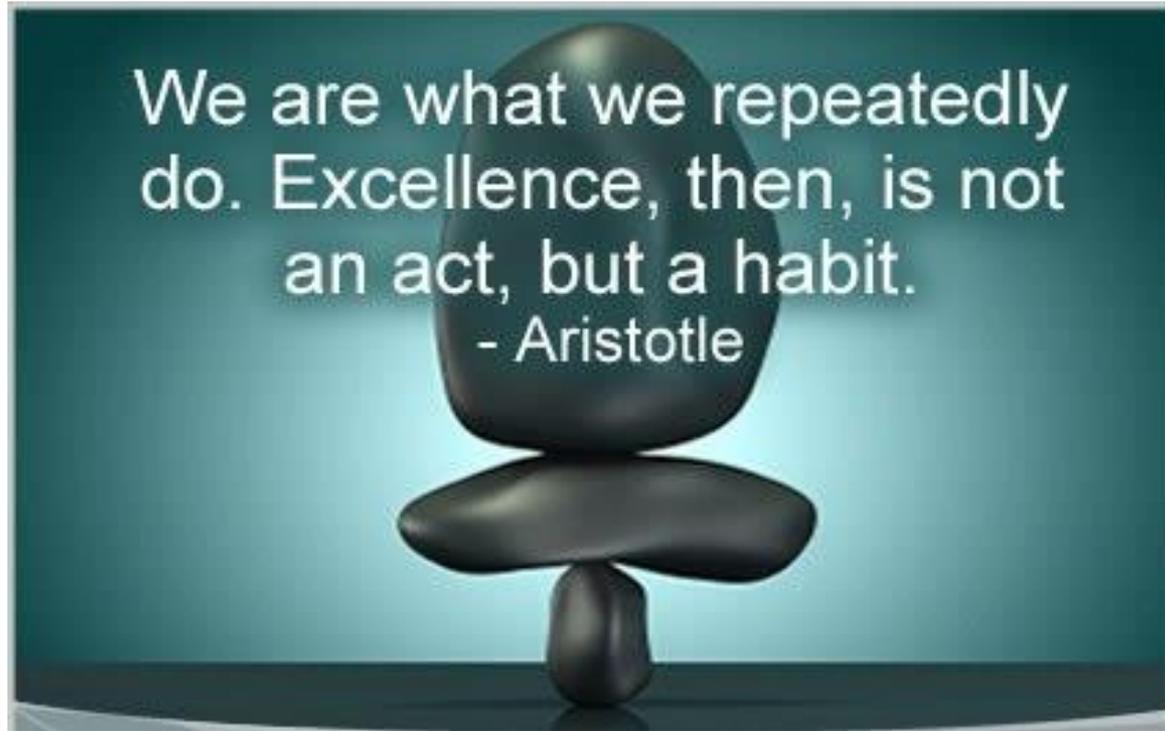
# Chance to Check – content

- ▶ Identifying 4 key statements that must be self asked on each administration
  - ▶ Prompt cards can be used initially but should become automatic.
  - ▶ Every patient, every time = deliberate design.
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# Chance to Check – time / focus

- ▶ Take the time to get the task right
  - ▶ Do the right checks
  - ▶ Acts like a pause in the process
  - ▶ Raise awareness of medication issues
  - ▶ Standardising approach
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# Chance to check



Help yourself to ensure excellence!

# Any Questions?

