How does task loading in a PICU environment impact on clinician situational awareness and awareness of the passage of time?

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STUDY INVESTIGATORS

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INTRODUCTION

There is little published literature on the subject of clinician perception of trends in patient observations on PICUs (Paediatric Intensive Care Units) and how this situational awareness is impacted on by clinical tasks. Human factors training cautions against the loss of situational awareness and time perception but there is no supporting observational data in the IC (Paediatric Intensive Care) setting.

Perceptual loading theory hypothesises that, under low load situations, awareness extends to environmental features not directly related to the task at hand. However in high load situations awareness is restricted to the object of focused attention. Individuals experience different load from a given task depending on their skills and experience.

Our pilot project intends to examine how clinician perception is affected by task loading. In our protocol two tasks are undertaken. The administrative task involves requesting a list of investigations from a clinical guideline. The technical task is the uncomplicated insertion of a central venous catheter (CVC) into a simulated vein. In each case we will record proxies for perception: awareness of the passage of time, the time point at which monitoring changes are noted and retrospective recall of observation trends. Our protocol was designed with psychology input from Prof. Nilli Lavie, group leader of the UCL Attention & Cognitive Control laboratory.

Passage of time is measured by the participant pressing a foot pedal linked to timing software at every perceived 10 second interval of elapsed time. A retrospective estimate of total elapsed time will also be recorded. After the second task, immediate verbal questions are asked followed by a written questionnaire which contains questions targeting the participant's awareness of monitoring changes.

Analysis will involve paired t testing of the timing interval and observation trend data to see if task loading significantly impacts accuracy.

BACKGROUND

Intensive care environments are busy, with hundreds of stimuli and information sources that have to be prioritised and filtered by staff working in these areas.

It is a commonly held belief that perceptual effects such as “tunnel vision” and “time racing by” can occur under conditions of high stress and concentration.

Impairment in situational awareness or time progression can have clinical implications, with current resuscitation and airway management training highlighting the need for team leaders, who are not involved in tasks, to retain situational awareness and actively monitor vital signs and timing information. Failure to monitor this information could lead to excess morbidity or mortality in the critically unwell patient population in PIC. This topic area is of importance as management decisions on the allocation of scarce staffing resources need to be made to ensure safe staffing and adequate procedural supervision. Our research question has emerged following errors during CVC insertion, suggesting the requirement of an additional practitioner assisting in each procedure.

What is already known in this area?

Perception is thought to be a limited process that requires selective attention to proceed [1]. This requires that attention is allocated early during perception via a selection process, before stimuli have been fully perceived [2]. Perceptual load theory describes how, with more stimuli competing for attention (higher load), selectivity in which stimuli to fully attend to increases. Awareness of other features in the environment therefore decreases.

Previous work has shown that the impact of distractors decreases response time only in low load scenarios. Whereas, in high load scenarios, new distractors have no effect on reaction time, suggesting saturation of attention selection [2]. Functional neuroimaging confirms that new distractors elicit less response under high load conditions [3,4]. This has implications in high load clinical environments such as in IC settings, where relevant information may not be attended to due to saturation of attention by other stimuli. Forcing strategies such as checklists and prompts are used clinically to try to overcome this. Hospitals and especially intensive care environments are high load environments, with 33% of tasks interrupted before completion[5]. High workload and increased distractors are also associated with increased errors in intensive care settings [6,7].

From our early pilot work it became clear that different individuals experience different loading for a given task. We therefore selected tasks in 2 different domains- administrative and technical, representing 2 common types of task in an intensive care environment. Whilst the administrative task might be expected to be less loading, we will confirm with participants which task they found to be more difficult in each experimental run.

Time perception in high pressure situations is known to differ from at baseline. For paramedics, perceived time was overestimated by 20% compared with elapsed time[8]. For surgeons, accuracy of time perception was found to be within 5% of elapsed time, with no improvement with increasing experience[9]. With increasing workload, estimated passage of time tends to decrease [10,11]. There is an impact on accuracy of time estimation depending whether elapsed time is recalled retrospectively or measured throughout a procedure

('prospectively'). Prospective tasks tend to overestimate time, more so with increasing workload [12–14]. This may be secondary to decreased capacity to respond to timing queries or to consult 'internal timers' when in a high load environment.

Time awareness is only a part of the overall situational awareness that is key in intensive care environments [15–17]. Situational awareness is highly dependent on visual awareness in an environment with so many visual cues[18]. Visual attention has been studied in anaesthetic practice, with increasingly complex cases showing increased clinician visual attention to the patient monitor [18]. In aviation and in anaesthesia, more experienced practitioners check their instruments/monitors more frequently but with decreased viewing time as workload increases[19–21]. Monitor alarms are used to draw attention to changes in parameters thought to be of significance. In published literature the removal of clinical alarms changes the response time to physiological changes from 6 seconds to between 61 seconds and >5mins[22]. However 92-94% of alarms in PIC (paediatric intensive care) settings may be clinically irrelevant [23,24]. This leads to decreased sensitivity of attending to alarms given frequent false alarms, with only 40% of critical alarms being attended to by medical staff [25,26].

However there is a key difference in the clinical populations found in the literature, surgeons have an operative team and are not responsible for patient monitoring while operating. Likewise anaesthetists are usually accompanied by an ODP and are not undertaking practical skills in isolation.

We were not able to find any published literature addressing attention and perception during ICU procedures.

What does this research add?

There is no published experimental data investigating how clinician time perception and attention are impacted by performing tasks in an IC environment. There is an expectation that time perception and attention are preserved, such that clinicians can insert central access as a sole practitioner. Should our investigation show that attention is impacted then this could inform changes to practice as to how monitors and/or additional staff members are utilised during procedures and clinical tasks and how practitioners are trained to undertake them.

AIM(S) OF STUDY

- To investigate the relationship between task type, perceptual loading and attention in an ICU environment
- To investigate the relationship between task type, perceptual loading and time perception in an ICU environment
- To examine if the extent of these effects (if any) are affected by clinician role and/or experience

OBJECTIVES

The objective of this study is to measure clinician awareness of time progression and monitoring trends in the clinical environment during 2 different types of task.

HYPOTHESIS

H_0 : Task type has no impact on clinician time perception or awareness of monitoring trends.

H_A : In the technical task clinician time awareness is more inaccurate than in the administrative task

H_B : In the technical task clinician awareness of monitoring trends is impaired compared to in the administrative task

STUDY DESIGN

STUDY SETTING/LOCATION

This will be a single-centre study undertaken in the Intensive Care Units at Great Ormond Street Hospital. The study tasks will be run in the simulation room on the general Paediatric ICU.

STUDY POPULATION

Participants will be recruited from the group of ICU junior/senior tier fellows and Consultants working on the ICUs at Great Ormond Street Hospital. This comprises a pool of around 40 staff members. All staff members are routinely involved in the care of patients in a PIC environment.

Participants will be recruited through convenience sampling of those working or training on the ICUs on days when it is possible to run the tasks. Individuals will not be recruited more than once.

Each participant will be given a numeric study ID and parameters recorded against this including:

- Job title- Consultant/fellow
- Gender- Male/female/prefer not to say
- Age- 21-30/31-40/41-50/51-60/61+
- Number of CVCs that they have previously inserted - <10, 10-50, >50).
- Time since last simulation training- 1 week/ 2-4 weeks/ 1-2 months / 3-6 months / 7-12 months / 1-2 years / >3 years

STUDY OUTCOMES

Primary Outcomes

Mean and standard deviation (accuracy) of time intervals measured.

Accuracy of retrospective recall of trends in monitored observations.

Secondary Outcomes

Impact of experience on time perception and monitoring changes.

STUDY PROCEDURES

Recruitment of participants

Participants will be provided with the information sheet appended and given the opportunity to ask any questions before consenting to the study. They will be asked to sign the appended consent form. Their consent forms will be in no way linked to the data collected such that participants could be identified from their data.

Randomisation

Block randomisation will be used to ensure even distribution of individuals at each grade of experience between the allocation groups. A block size of 4 will be used with 2 strata (grade= Consultant, Other). The randomisation list was determined by an online randomisation service [27]. The list generated is included as an appendix.

Two parts of the experimental process are randomised.

The first is the order in which the administrative and technical tasks are performed- this is randomised to remove the impact of primacy-recency impacts as well as task training through more practice with the timing apparatus.

The second is the scenario displayed on the monitor. As we are asking participants to identify a trend, randomisation to an increasing or decreasing trend reduces the likelihood of guessing the correct answer.

The study cannot be blinded at the time of data capture given the significant obvious differences between the tasks.

Study procedure

Structure

The overall structure is outlined below with further detail on each section provided in the following section.

Section order	Comment
Consent and discussion	To ensure valid consent and answer queries
Randomisation	Randomisation of task order and monitor trend scenario: increasing/decreasing
Timing control task	To assess baseline time perception for each participant
Break	To reset and brief the participant for the first task
First task	Administrative or technical task depending on randomisation

Monitor scenario in first task	The parameters do not change aside from a brief desaturation at 30 seconds into the task, to orient participants to the monitor within the task
Break	To reset and brief the participant for the second task
Second task	Administrative or technical task depending on randomisation
Monitor scenario in second task	There is a desaturation at 30 seconds as before to orient participants to the monitor within the task. The blood pressure then either falls or rises, depending on the randomisation, settling at the final value at 4 minutes. The change in blood pressure only occurs in the second task so as to allow immediate review of trend awareness, this is not possible to do after the first task without introducing bias in the second task.
Post task review	To check immediate recall of monitor trends in the second task. Asked immediately to reduce the impact of recall/memory bias on the answers.
Questionnaire	Provides quantification of any trend in parameters noticed.
Debrief	To answer queries and identify any areas of participant support required.

Experimental scenarios:

Each participant will undertake the timing control task first and then both the administrative and technical tasks, the order of these determined by the randomisation table.

1. Timing control

The participant sits and is asked to push a foot pedal every 10 seconds with no reference to external timekeeping. This task continues for 6 minutes.

Participants are instructed: “Please press the foot pedal every 10 seconds, trying to be as accurate as possible. The task will last for several minutes.”

After 6 minutes the participant will be asked for the time period they believe has elapsed between the first pedal press and the last.

2. Administrative task:

Request investigations for a new admission

Equipment required:

- PIMS-TS investigations pack
- Computer signed in to the EPIC learning environment for a dummy patient
- Simulated bedside monitor
    - Varies observations over time in line with preset programming determined by the study team
- Foot pedal and data recorder for time logging

Setup

All equipment laid out on a table. The tissue pad is attached to the mannequin leg and surgically draped appropriately. The ultrasound probe is already in a sterile sheath, lying on the sterile field.

Instructions to subject

You are the fellow/consultant looking after Sophie. Sophie is a 2 year old girl with PIMS-TS. She is intubated and is stable on minimal ventilation and peripheral noradrenaline of 0.1mcg/kg/min. She has just been admitted to the unit. This is Sophie's bedspace, all the equipment you see is part of the simulation.

Your task is to request the admission investigations according to the sheet provided.

The nurse looking after the patient has had to step out of the bedspace to prepare their infusions and have asked you to complete your task whilst keeping an eye on the patient in the bedspace.

I am the nurse in the next bedspace, if at any point you want to make a clinical intervention please continue with the task and verbalise anything you would like me to do.

As before, when I ask you to begin, please press the foot pedal every 10 seconds, trying to be as accurate as possible. The task will last for several minutes.

Events during the task:

If this task is the first task undertaken, then the bedside monitor will display the same values throughout, aside from 1 desaturation. Heart rate: 125 bpm, blood pressure: 90/50 (65), respiratory rate: 25 , oxygen saturations: 98%, end tidal CO_2: 4.5 mmHg. The oxygen saturation measure will fall to 88% for 5 seconds at 30 seconds into the task, triggering an alarm. This is to orient the participant to the monitor being part of the environment.

Normal values for age are: Heart rate: 80-140 bpm, respiration rate: 20-28 (APLS), 5th centile systolic: 65+(2 x 2)= 69, 5th centile MAP: 50+(2 x 2)=54.

At 30 seconds into the task there will be a 10 second desaturation to 88% with spontaneous normalisation to 98%.

If this is the second task undertaken then values on the monitor will change during the task.

There are 2 monitor scenarios, 'A' and 'B'. Allocation between these is determined in the randomisation table (see appendix). They are identical apart from 'A' being a falling trend and 'B' a rising trend

- Scenario A
    - The oxygen saturation measure will fall to 88% for 5 seconds at 30 seconds into the task, triggering an alarm. This is to orient the participant to the monitor being part of the environment.
    - The blood pressure will fall from an initial systolic/diastolic (mean) of 90/50 (63) at 30 seconds to 75/48 (55) at 4 minutes and then remain static at that level. There will be no alarm. This gradual drift tests participants' awareness and identification of monitoring trends during the task through what point they notice a change, if they do at all.

    - Other parameters (heart rate, respiratory rate, oxygen saturations, end-tidal CO_2 and temperature) will not vary.
- Scenario B
    - The oxygen saturation measure will fall to 88% for 5 seconds at 30 seconds into the task, triggering an alarm. This is to orient the participant to the monitor being part of the environment.
    - The blood pressure will rise from an initial systolic/diastolic (mean) of 75/48 (55) at 30 seconds to 90/50 (63) at 4 minutes and then remain static at that level. There will be no alarm. This gradual drift tests participants' awareness and identification of monitoring trends during the task through what point they notice a change, if they do at all.
    - Other parameters (heart rate, respiratory rate, oxygen saturations, end-tidal CO_2 and temperature) will not vary.

End point:

6 minutes or completion of the task.

The participant will be asked for the time period they believe has elapsed between the first pedal press and the last.

3. Technical task

Inserting a CVC.

Equipment required:

- Child mannequin, intubated
- CVC insertion mannequin
- US machine + gel + probe cover
- CVC set
- Syringes, flush
- Cleaning- chlorprep lollipops
- Suture, needle holders, scissors, sharps bin
- Dressings + biopatch
- Gloves (non-sterile)
- Drape
- 5 +10ml syringes
- Sterile field drape
- Pen and paper for documentation
- Simulated bedside monitor
    - Varies observations over time in line with preset programming determined by the study team
- Foot pedal and data recorder for time logging

Setup

All equipment laid out on a table. The tissue pad is attached to the mannequin leg and surgically draped appropriately. The ultrasound probe is already in a sterile sheath, lying on the sterile field.

Instructions to subject

You are the fellow/consultant looking after Sophie. Sophie is a 2 year old girl with PIMS-TS who requires central access for inotropes. She is intubated and is stable on minimal ventilation and peripheral noradrenaline of 0.1mcg/kg/min. This is the Sophie's bedspace, all the equipment you see is part of the simulation

You have been asked to insert a femoral CVC and have already prepared your equipment.. The line is not flushed. You are already wearing the appropriate sterile gown. Please only use steristrips and dressings, with no sutures, to secure the line to the mannequin. Please document the procedure on the paper provided when you have completed insertion of the line.

I am the nurse in the next bedspace, if at any point you want to make a clinical intervention please continue with the task and verbalise anything you would like me to do.

As before, from when I ask you to begin, please press the foot pedal every 10 seconds, trying to be as accurate as possible. The task will last for several minutes.

Given that this is a simulated mannequin please take all the time you need to familiarise yourself with the ultrasound appearance of the vessels before telling me you are ready to begin.

Events during the task:

Same as for the administrative task.

End point

6 minutes or completion of task documentation.

At the end of the task, progress through the checkpoints below will be noted by the experimenter:

1. Equipment preparation / line flushing
2. Cleaning of the procedure site
3. Initial ultrasound scan
4. Needle manipulation
5. Guide wire insertion
6. Tract dilation
7. Line insertion
8. Line suturing
9. Line dressing
10. Documentation completed

The participant will be asked for the time period they believe has elapsed between the first pedal press and the last.

Post- task review

Following completion of the second task the participant will immediately be asked the following questions:

"Did you see anything of note on the monitor aside from the desaturation" - their yes/no answer is recorded.

“If there were changes in the blood pressure did you notice a fall or a rise” - their rise/fall answer is recorded.

Was the extent of the fall/rise in systolic pressure: 5, 10,15, 20 or 25 mmHg- their selection is recorded.

Which of the tasks did you find more challenging? And why?

They are then asked to describe their subjective experience- “how were those tasks for you?”

They are then asked- “How would you describe your familiarity with EPIC order requesting?”- Very, somewhat, limited, none

They are then provided with the questionnaire from the appendix.

Measurement tools used

- For each experimental run there are 2 variables
    - The task order- administrative or technical completed first
    - The trend in monitored observations- increasing or decreasing blood pressure in the second task

The following parameters are measured during both tasks:

- Timestamps of foot pedal use by the participant
- Retrospective recall of total elapsed time
- Time to complete task/progress at experiment end
- Question responses

Following completion of the tasks the data collected can be analysed as below.

Time interval analysis:

- Intervals between pedal presses are extracted for each scenario (timing control/administrative/technical tasks)
    - Derive: min/max/mean/interquartile range/standard deviation for each case
- Comparison of the individual’s retrospective perceived elapsed time with actual elapsed time. Reported as percentage error of actual elapsed time.

This will allow the following results to be reported:

- Mean deviation for each individual from their baseline in each of the tasks.
- Change in retrospective perceived elapsed time compared to actual elapsed time.
- Distribution of timing in the control task for each individual.
- Paired t-test comparison to test if there are significant differences in time interval distribution for each individual between control, administrative and technical tasks.
- Overall proportion of participants showing significant deviation from their own baseline in each of the administrative and technical tasks
- Population limits/mean
- Comparison of the mean perceived time interval between subgroups
    - By task order

        - By time within task (split into thirds- 2 minutes each)
        - By grade
        - By number of CVCs previously inserted
        - By first 25% vs last 25% of participants

Monitor trend perception analysis:

Each participant will provide question answers from immediately after the second task.

This will allow the following results to be reported:

- Rationale
    - The first question “Did you see anything of note on the monitor” is chosen to highlight inattentional blindness and is asked immediately to avoid any impact from the role of memory or priming from other questions asked.
        - This will be reported as proportion who noted a change
    - The subsequent questions are asked to elicit responses from those who observed the trend but are not sufficiently confident in their recall to report it.
- From the responses the following can be derived:
    - Correct identification of the blood pressure trend- reported as proportion of participants correct
    - Correct identification of no trends in other parameters - reported as proportion of participants correct
    - Accuracy of magnitude recall
        - The blood pressure either falls or rises between a systolic/diastolic (mean) of 70/48 (55) and 90/50 (65).
        - From the position of the x on the linear blood pressure scales we can derive:
            - The accuracy of the initial and final estimates compared with the actual values- reported for each task as the population mean and standard deviation of the percentage errors compared with the actual value.
            - The accuracy of the magnitude of the change, determined through comparing the difference in the estimated initial and final values compared with the actual 20mmHg systolic/ 10mmHg diastolic change for each task. The population mean and standard deviation of the percentage errors compared with the actual change will be reported for each task.
    - We hypothesised that there would be a priming effect following administration of the questionnaire, with participants more likely to attend to blood pressure trends if the questions were asked prior to the second task. We will therefore only ask the questions after the second task. We can then compare between the subgroups, split by which of the tasks was performed second to examine the impact of task type.
        - i.e the questionnaire analysis will have half the n of the overall study
- For the above we can compare subgroups using Fishers exact test.
    - By task order
    - By grade
    - By number of CVCs previously inserted

- By first 25% vs last 25% of participants

STATISTICAL CONSIDERATIONS AND DATA ANALYSIS

Sample size and statistical power

This is a pilot study and as such we do not expect it to be adequately powered to confirm hypotheses but intend that it should be hypothesis generating.

Statistical methods

The population summary statistics detailed above will be calculated using 'SPSS statistics' software with built-in min/max/mean/IQR/SD calculation.

With assumed normally distributed timing data and each participant completing 2 tasks the distributions will be compared with a paired sample t-test for; control vs administrative, control vs technical and administrative vs technical. For subgroup analysis paired or unpaired sample t-tests will be used as appropriate in each case. For the trend perception outcomes, contingency tables will be created for each subgroup and compared using Fishers exact test.

Given the relatively small sample size we will test the assumption of normal distribution with the Shapiro-Wilk test, run through SPSS.

ETHICAL CONSIDERATIONS

The study will only collect anonymised data relevant to the tasks and the participants' grade/seniority at work. No sensitive data will be collected. No identifiable personal data will be collected. Data collected will be stored on a password protected NHS computer. No data will be passed to other data processors. No participants will be recruited from vulnerable groups. No personal data will be retained and experimental data will be retained for 7 years electronically, with the paper questionnaires scanned and the physical copies destroyed.

Participants will be provided with the information sheet appended and given the opportunity to ask any questions before consenting to the study. They will be asked to sign the appended consent form. Their consent forms will be in no way linked to the data collected such that participants could be identified from their data.

Safety considerations/Patient safety

The study will be undertaken in a simulation room frequently used for similar tasks and training. This is a safe environment in the hospital, following current occupational safety and fire legislation.

The most likely risk is of a sharps injury given the use of needles and sutures. Sharps safety equipment for disposal is available, as is first aid equipment. Should an injury occur appropriate first aid will be undertaken. The event will also be recorded in the study notes as a high incidence of sharps injuries would prompt local training focus.

The risks of the study are:

- Sharps injury, rare in usual work or other simulation teaching tasks.
- Taking time away from clinical duties. The study is not mandatory and will only be run on days approved by the lead PICU consultant as being safe to do so.
- Additional pressure/stress on participants. There is already a mandatory CVC insertion training package which has been well received. The anonymity of performance outcomes should help minimise these concerns.

Participants regularly participate in simulation in the workplace and we do not expect that this study poses any more burden on participants than the simulation teaching programme. As in the simulation teaching programme, if unsafe practice is noted during the tasks this will be fed back sensitively to the individual with signposting to the CVC training package.

Participants may be distressed or frustrated by being unable to insert the CVC or through not noting the monitoring trends. Every participant will be asked if they would desire a debrief after the experiment from the study team with signposting to the psychology services and educational supervisors already available to staff working in this setting, should issues arise. Participants are free to withdraw from participation at any time.

The study will be conducted in full accordance with principles of the “Declaration of Helsinki”, Good Clinical Practice (GCP) and within UK laws and regulations.

Conflict of interest

The study team has no conflicts of interest relevant to this work.

Funding

Most of the required resources are already available for teaching purposes. For consumables and items specific to the study, funding will be met by a PCCS (Paediatric Critical Care Society) grant.

OUTCOMES AND SIGNIFICANCE

The potential benefits of the study are in contributing to the body of evidence informing procedure guidelines and staffing levels for procedures. This is part of the larger focus on the impact of human factors and situational awareness on safety in healthcare, particularly in intensive care environments. Should an individual’s time perception and clinical awareness be significantly impaired in a technical procedure scenario this could pose a risk to patient safety. This would suggest the need for an assistant who keeps track of timing and monitoring changes as well as policy changes for monitoring use during procedures.

There has not previously been any work published on perceptual loading in the PICU environment, a setting anecdotally acknowledged to be busy with a high number of stimuli competing for attention. If a significant effect is found this could stimulate further work in improving safety through changing the setup of the environment.

Appendix

Information sheet (v1.0)

What is the purpose of the study?

We are undertaking research into clinician perception and attention in paediatric intensive care.

We believe that the ability of individuals to remain aware of their surroundings and of the passage of time will be affected when they are concentrating on technically demanding tasks. However there has not been any previous research studying this in PICU.

This is important as, if clinicians have significantly impaired awareness, then they may require additional support in monitoring the patient while undertaking procedures.

What will happen?

- You will be asked to take around half an hour for the study in the simulation room on the PICU.
- You will be asked to perform a timing task, pressing a foot pedal each time you feel 10 seconds has passed.
- You will then be asked to perform 2 tasks, one involving order requesting and one involving central access insertion. During these tasks you will be asked to continue marking elapsed time with the foot pedal and to respond to patient monitoring as you would in your usual work.

What information will be collected?

- Anonymised information that may impact on your task performance
    - Job title- Consultant/fellow
    - Gender- Male/female/prefer not to say
    - Age- 21-30/31-40/41-50/51-60/61+
    - Number of CVCs previously inserted - <10, 10-50, >50).
    - Time since last simulation training- 1 week/ 2-4 weeks/ 1-2 months / 3-6 months / 7-12 months / 1-2 years / >3 years
- Timing data from the foot pedal input
- Your response to features of the tasks

Do I have to take part?

No. This is a completely voluntary task. It has no bearing on your training, employment or role in the department.

Consent form

Section	Please tick below
I confirm that I have read and understood the Participant Information Sheet (version 1.0) for the above research study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
I understand that participation is voluntary, and that I am free to withdraw consent at any time, without giving any reason.	
I understand that the information collected in the study will be used to support other research in the future, and may be shared anonymously with other researchers.	

Your signature: Date:

Your full name (PRINT):

Researcher signature: Date:

Researcher full name (PRINT):

Administrative task- instructions and task material

Instructions

You are the admitting doctor for a newly arrived patient.

Please request the admission PIM-TS investigations as on the sheet provided.

Investigations required

Sophie Digby

432 458 6644

14/8/2019

NKDA

Weight: 12kg

Investigations all to be completed within 24 hours, you carry bleep 1234:

- FBC
- UE, Bone, LFT, GGT, Mg
- LFTs, CRP, ESR, ASOT, Vitamin D, PTH
- Coagulation profile-not on anticoagulation, Group & Save
- Blood film
- D-Dimers, Ferritin, Immunology save serum, Triglycerides, LDH, CK
- Trop-I, NT-proBNP
- Amylase, Lipase, faecal calprotectin, urine albumin:creatinine ratio
- ECHO- Discussed with Carly Achilles, Reason: Other
- Chest X-ray, AXR, Abdominal USS, EEG
- Diagcore SARS-CoV-2
- Respiratory Viral screen
- COVID serology
- Stool M,C&S, Stool enteric virus panel, and stool SARS-CoV-2 PCR
- Blood M,C&S, urine M,C&S, BAL M,C&S, throat culture
- Viral Blood PCR: EBV, CMV, Adeno, Enterovirus, HIV
- Blood PCR: Pneumococ., Meningococ., Group A strep, Staph A
- Lymphocyte subsets (TBNK)

Post task questionnaire

1. Overall the blood pressure:
Rose [ ] Stayed the same [ ] Fell [ ] I don't recall [ ]

2. Overall the heart rate:
Rose [ ] Stayed the same [ ] Fell [ ] I don't recall [ ]

3. Overall the respiratory rate:
Rose [ ] Stayed the same [ ] Fell [ ] I don't recall [ ]

4. Mark the initial systolic blood pressure on the line below (with an x):

I do not recall the value [ ]

5. Mark the initial mean blood pressure on the line below (with an x):

I do not recall the value [ ]

6. Mark the final systolic blood pressure on the line below (with an x):

I do not recall the value [ ]

7. Mark the final mean blood pressure on the line below(with an x):

I do not recall the value [ ]

Randomisation list[27]

Block sizes: 4
Stratification factors: Role (Consultant, Other)

		Role	
Participant number	Monitor scenario	Consultant	Other
1	A	Administrative first	Administrative first
2	B	Administrative first	Technical first
3	A	Technical first	Technical first
4	B	Technical first	Administrative first
5	A	Administrative first	Administrative first
6	B	Technical first	Administrative first
7	A	Administrative first	Technical first
8	B	Technical first	Technical first
9	A	Administrative first	Administrative first
10	B	Technical first	Technical first
11	A	Technical first	Technical first
12	B	Administrative first	Administrative first
13	A	Technical first	Technical first
14	B	Administrative first	Technical first
15	A	Technical first	Administrative first
16	B	Administrative first	Administrative first
17	A	Administrative first	Technical first
18	B	Technical first	Technical first
19	A	Administrative first	Administrative first
20	B	Technical first	Administrative first

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