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Multidisciplinary Management of Acute Disturbance

Physical Health Monitoring Post Rapid Tranquillisation

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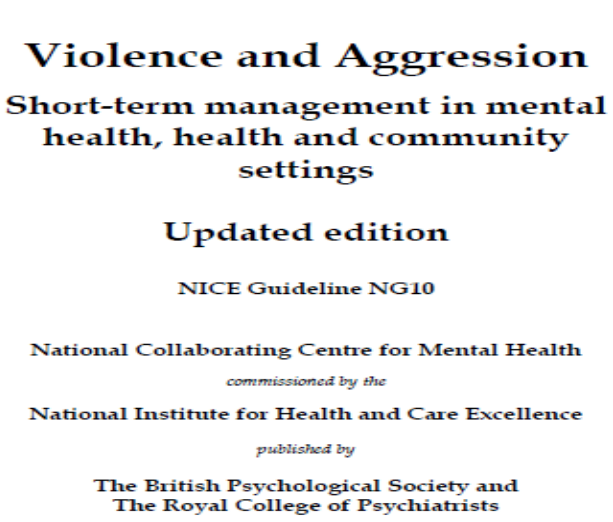
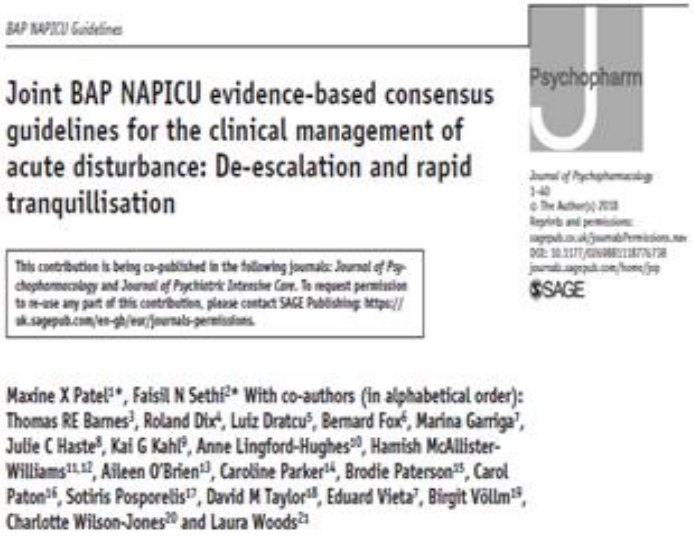
(No Declarations of Interest)

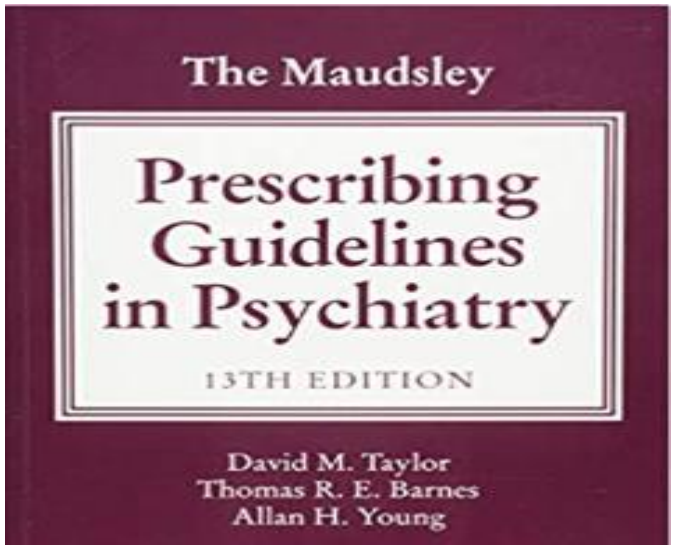
Why we monitor

- Adverse effects of drugs commonly used in RT
- Existing underlying physical health
- Non-medication related risks i.e. restraint
- Effect of medication

Four main pieces of guidance







Guideline recommendations

Guideline	Post-RT parameters	Post-RT monitoring
Maudsley prescribing guidelines	Temperature; pulse; blood pressure; respiratory rate	Every 10 minutes for 1 hour, then half-hourly till patient ambulatory
NICE , NG10	Temperature; pulse; blood pressure; respiratory rate; hydration level; consciousness level; side effects	At least hourly until no further concerns or every 15 minutes (in certain circumstances)
NICE quality std	Vital signs; hydration level; consciousness level; side effects;	At least hourly until no further concerns
WJBP	Vital signs	Every 15 minutes for 1 hour then every 30 minutes for 4 hours or until awake

Additional recommendations

Guideline	Additional recommendations
Maudsley prescribing guidelines	Poor engagement: observe for pyrexia, hypotension, over-sedation, and general physical well-being. Asleep/unconscious: continuous pulse oximetry desirable with nurse presence.
NICE , NG10	Higher frequency if BNF maximum dose exceeded in prescribing; patient asleep or sedated; associated drugs and alcohol; pre-existing physical health concerns; experienced harm due to restrictive intervention.
NICE quality std	If RT is used while the person is in seclusion, additional measures may be needed to ensure safety.
WJBP	Vigilant documented monitoring should be mandatory when physical restraint is used.

Brief guide: Rapid Tranquilisation (by the parenteral route) in Mental Health

Context and policy position

Monitoring

- Following RT do staff **monitor**: side effects, pulse, blood pressure, respiratory rate, temperature, level of hydration and level of consciousness at least **every hour** until the patient is ambulatory and there are no further concerns? (Staff should monitor **every 15 minutes** if BNF maximum dose has been exceeded or patient appears to be asleep or sedated, has taken illicit drugs or alcohol, has a physical health problem or has experienced harm as a result of restraint)

- If full monitoring is impractical, do staff document clearly the reasons why and ensure a minimum observation of respiration and level of consciousness?

Pharmacokinetic principles

Table 3. Benzodiazepine formulations

Medication	Route	Formulation	Bioavailability	Time to maximum plasma concentration (Tmax)
Clonazepam	Oral	Tablets	90%	1–4 hours
		Liquid	90%	1–4 hours
	IM	Injection	93%	3 hours
Diazepam	Oral	Tablets	76%	30–90 minutes
		Liquid	76%	30–90 minutes
	IM	Injection	Erratic	Erratic
	IV	Injection (emulsion)	100%	≤ 15 minutes
Lorazepam	Oral	Tablets	100%	2 hours
	IM	Injection	100%	1–1.5 hours
	IV	Injection	100%	seconds/minutes
Midazolam	Buccal	Oromucosal solution	75%	30 minutes
	IM	Injection	>90%	30 minutes
	IV	Injection	100%	seconds/minutes

Table 5. Antipsychotic formulations

Medication	Route	Formulation	Bioavailability	Time to maximum plasma concentration (Tmax)
Aripiprazole	Oral	Tablet	87%	3–5 hours
	Oral	Oro-dispersible	87%	3–5 hours
	Oral	Liquid	87%	3–5 hours
	IM	Injection	100%	1 hour
Droperidol	Oral	Tablet	75%	1–2 hours
	IM	Injection	100%	≤ 30 minutes
	IV	Injection	100%	seconds/minutes
Haloperidol	Oral	Tablet	60–70%	2–6 hours
	Oral	Liquid	60–70%	2–6 hours
	IM	Injection	100%	20–40 minutes
	IV	Injection	100%	seconds/minutes
Olanzapine	Oral	Tablet	Undetermined	5–8 hours
	Oral	Oro-dispersible	Undetermined	5–8 hours
	IM	Injection	Undetermined	15–45 minutes
	IV	Injection	100%	seconds/minutes
Quetiapine	Oral	Tablet	Unknown	1.5 hours
Risperidone	Oral	Tablet	67%	1–2 hours
	Oral	Oro-dispersible	67%	1–2 hours
	Oral	Liquid	70%	1–2 hours

Evidence

- There is an absence of evidence to stipulate the frequency and duration of monitoring post-RT.
- Most, if not all, of the evidence is based on expert committee and consensus recommendations.
- Summary of product characteristics (SmPC).
  - 8 hours post lorazepam
  - 4 hours post IM olanzapine
- Many different Trust policies differ in their recommendations.

BAP guidance recommendations

- All patients who have received pre-RT medication should be monitored at a minimum of Low Level.
- All patients who have received IM RT should be monitored at a minimum of Medium Level.

Level	Criteria	Physical monitoring schedule	Suggested minimum psychiatric observations
Low	All patients following pre-RT medications	NEWS or equivalent every hour for minimum 1 hour	Standard psychiatric observations every hour
Medium	All patients post IM RT, who do not require high/critical level monitoring	NEWS or equivalent every 15 minutes for minimum 1 hour	Intermittent psychiatric observations every 15 minutes

- All patients who have received IM RT and are over-sedated, asleep or significantly physically unwell, should be monitored at a minimum of High Level.
- All patients who have received IV RT and/or are unconscious or severely physically unwell, should be monitored at Critical Level.

Level	Criteria	Physical monitoring schedule	Suggested minimum psychiatric observations
High	All patients post IM RT, who are over-sedated, asleep, or significantly physically unwell	NEWS or equivalent every 15 minutes for minimum 1 hour and include pulse oximetry until patient is ambulatory	Continuous (within line of sight)
Critical	All patients post IV RT as well as patients who are unconscious (not rousable) or severely physically unwell	Continuous monitoring and resuscitation facilities are essential	Continuous (within arm's length)

What should we monitor?

- NEWs
  - BP (systolic), pulse, temp, respiratory rate, level of consciousness, Oxygen saturation.
- Electrocardiograms (ECGs)
- Hydration status
- Blood tests - post RT

National Early Warning Score (NEWS)

- Standardise the process of recording, scoring and responding to changes in routinely measured physiological parameters in acutely ill patients.
- The NEWS was founded on the premise that
  - (i) early detection
  - (ii) timeliness
  - (iii) competency of the clinical response comprise a triad of determinants of clinical outcome
- Use of trigger scores to determine urgency of clinical response

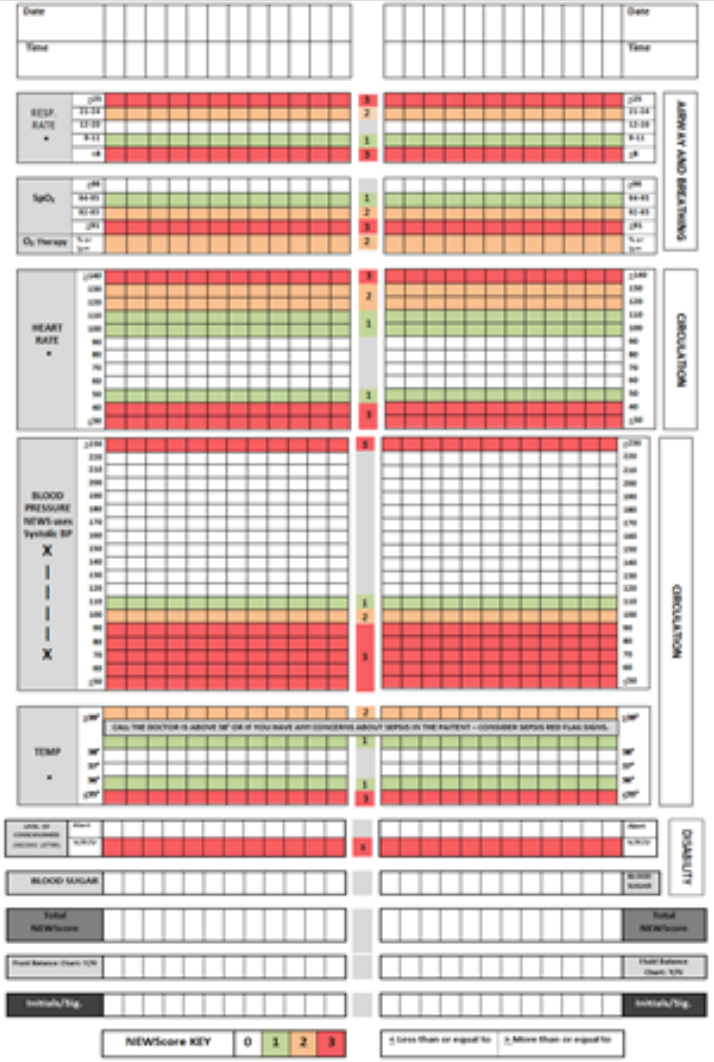
Sussex Partnership NHS
NHS Foundation Trust

NEWS RT PROTOCOL- PHYSICAL HEALTH OBSERVATIONS

First Name:		Surname		Ward	
CIS Number:		Date of birth		Consultant	

Frequency: EVERY 15 MINUTES, FOR AT LEAST ONE HOUR. Further monitoring beyond 1 hour should be considered if deemed clinically appropriate (scoring is above 3 for single parameter or total above 4).

If you are unable to carry out Physical Health observations, or the patient refuses you must complete Non-Contact Observations of respiratory rate and level of consciousness using AVPU and record these on this chart.



Please record patient specific variants in column below and note: This protocol should NOT prevent a practitioner making an appropriate response based upon their clinical judgement.

NEWS	Frequency of Monitoring	Clinical Response	Variants - Patient Specific
0	Routine monitoring of physical observations	• Continue routine NEWS monitoring with every set of physical health observations	Please specify frequency of monitoring physical observations:
Total score 1 - 4 (if 3 in one parameter, see below)	Twice daily physical observations & discuss with Medical Team	• Inform Registered Nurse who must assess the patient; • Registered Nurse to decide if increased frequency of monitoring and / or escalation of clinical care is required; • Discuss with Medical Team / Out Of Hours (guidance required)	
SICK! Total NEWS 5-6 or 3 in one parameter *Consider sepsis red flag signs*	Increase frequency of physical observations to a minimum of 1 hourly & discuss urgently with the Medical Team SEPSIS RED FLAG SIGNS Slurred speech Extreme shivering/muscle pain Passing no urine (in a day) Severe breathlessness I feel like I might die Skin mottled/discoloured	• Registered Nurse to urgently inform the Medical Team caring for the patient. • Urgent assessment by Medical Team (give handover using the *SBARD tool) • Assess if transfer of the patient is required • Consider 999 call for ambulance assistance if doctor is unable to assess within 20 minutes / o if concerns remain over the patient's Physical Wellbeing. • CONSIDER SEPSIS SCREENING TOOL	
ACT NOW! Total NEWS 7 or more	Continuous monitoring of patient's Physical Observations & initiate an emergency call	• Registered Nurse to immediately inform the Medical Team caring for the patient – again out of hours; • 999 call for emergency ambulance assistance t transfer patient to the nearest District General Hospital • Contact patient's Consultant / nominated Deput • CONSIDER SEPSIS SCREENING TOOL	

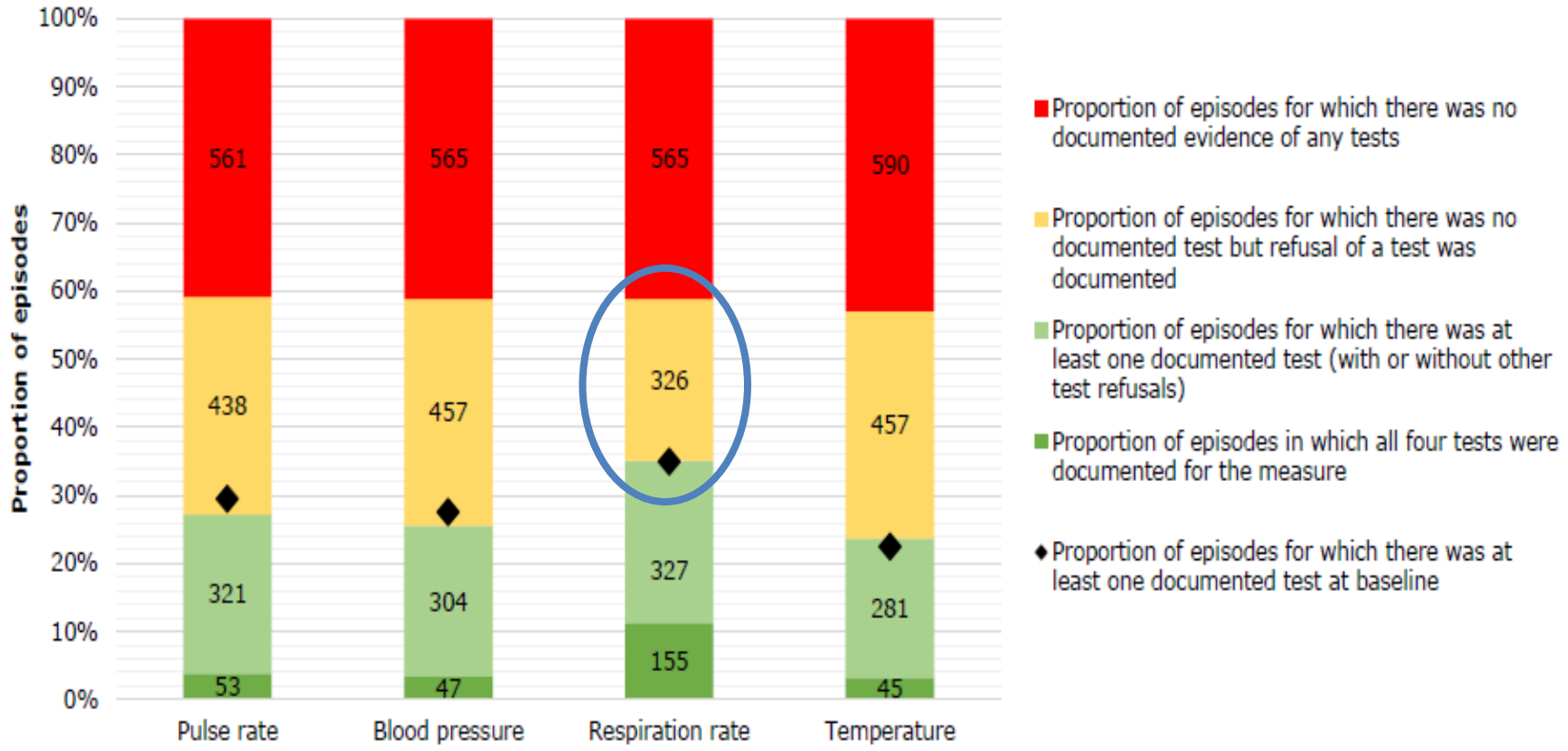
Escalation Protocol SBARD

S Situation	Your name / designation / ward The patient's name is... I am concerned because ... The NEWS score trigger is.	
B Background	Brief history Admission Date MHA Status Medication / therapy	Treatment Date
A Assessment	A Airway	Is the patient talking? Any airway noises; e.g. gurgling/stridor
	B Breathing	Respiratory Rate (RR)? Any respiratory noises e.g. wheeze? Is breathing laboured? Oxygen saturation levels (SpO2)?
	C Circulation	Heart Rate (HR)? Capillary Refill Time (CRT)? Blood Pressure (BP)? Temperature?
	D Disability	Level of consciousness (AVPU)? Blood sugar levels? Pupil reactions?
	E Exposure	Exposure & environment Bleeding / rashes, etc.? Any other abnormal signs?
R Recommend	I would like you to do /What would you like me to do?	
D Decision	Record what has been agreed on the patient's notes.	

*Use SBARD Tool (above) to notify Medical Team

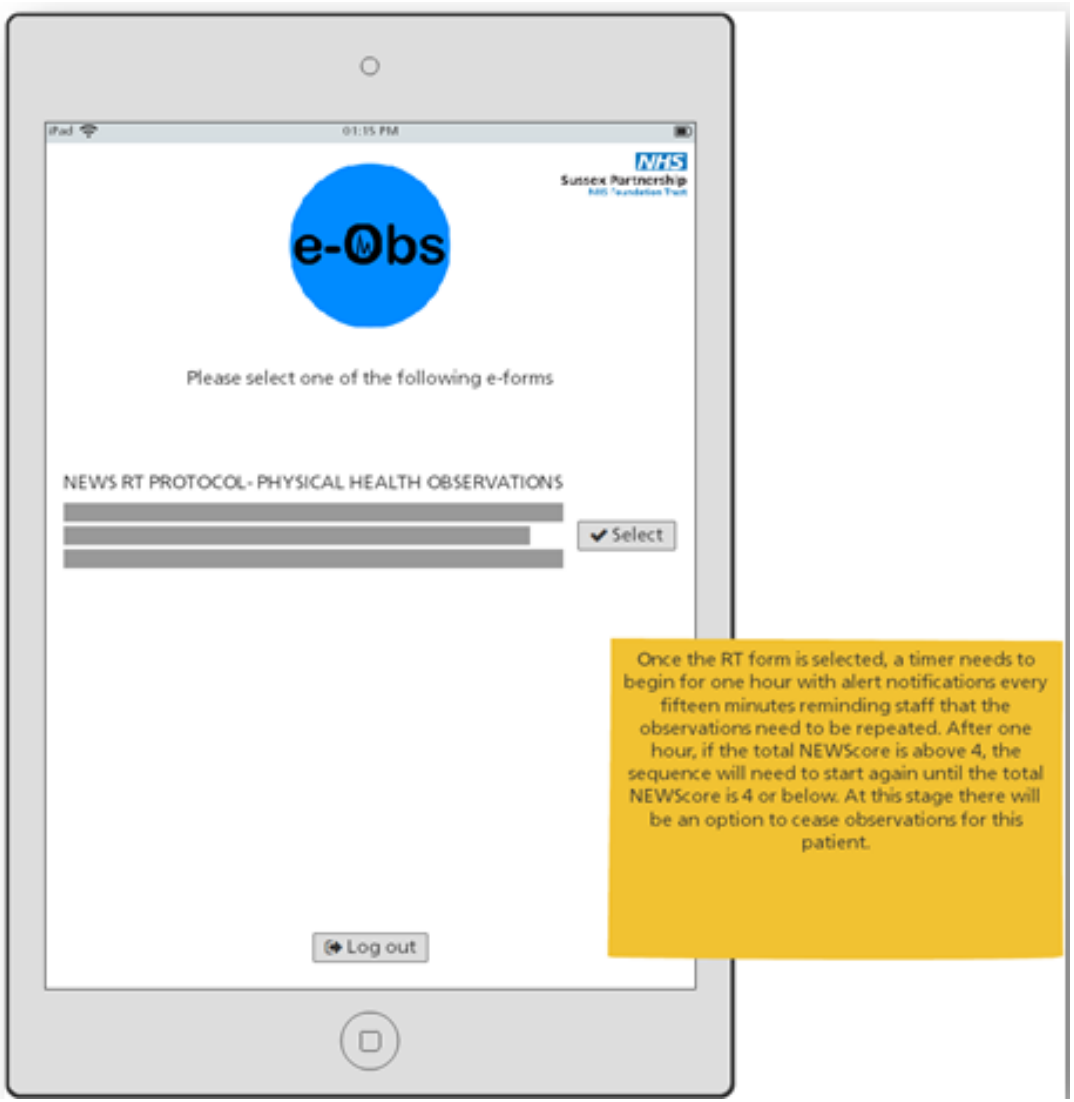
Are we monitoring?

Figure 21. Proportion of episodes in which IM medication was administered for which each of the four physical health measures (pulse rate, blood pressure, respiration rate and temperature) were recorded (n=1373), at re-audit



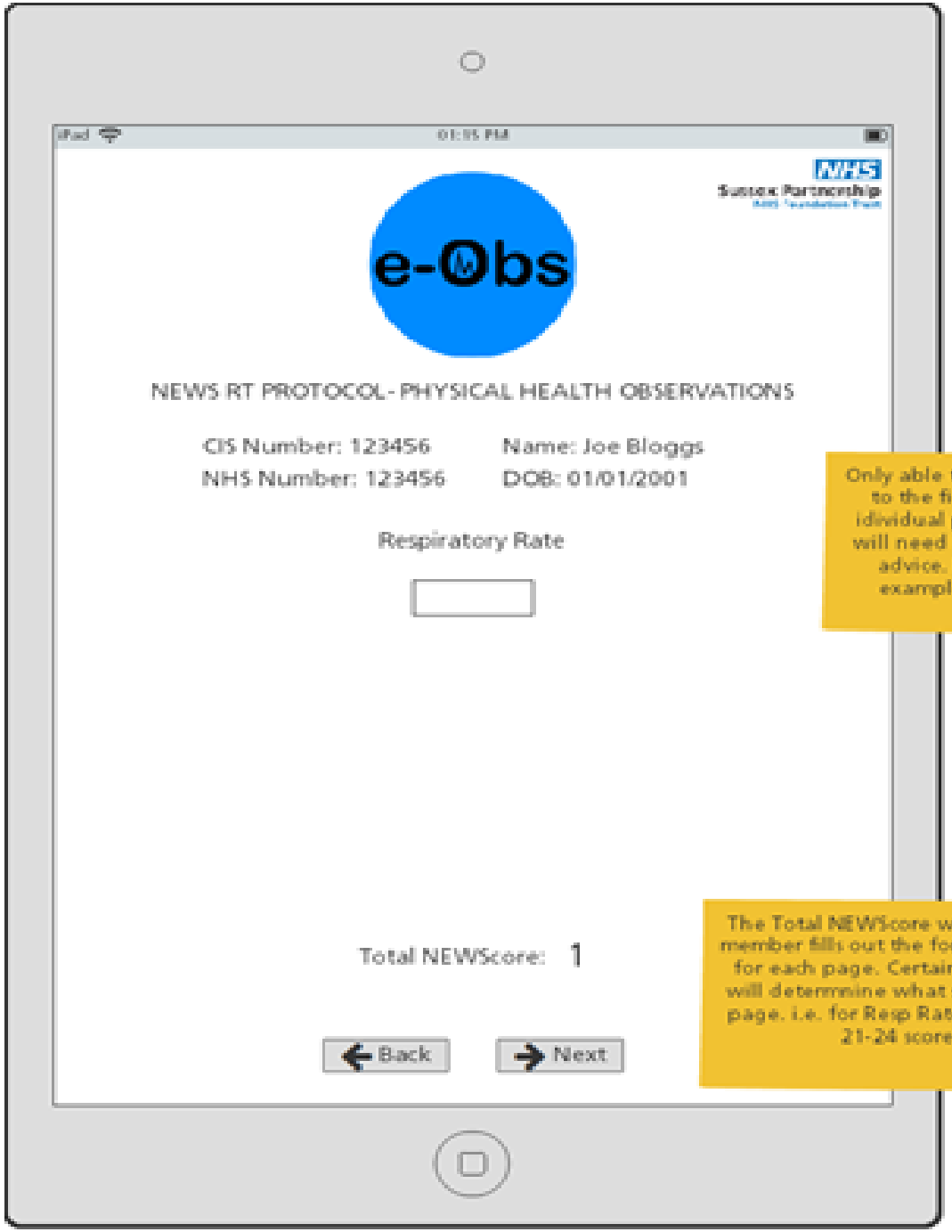
October 2018

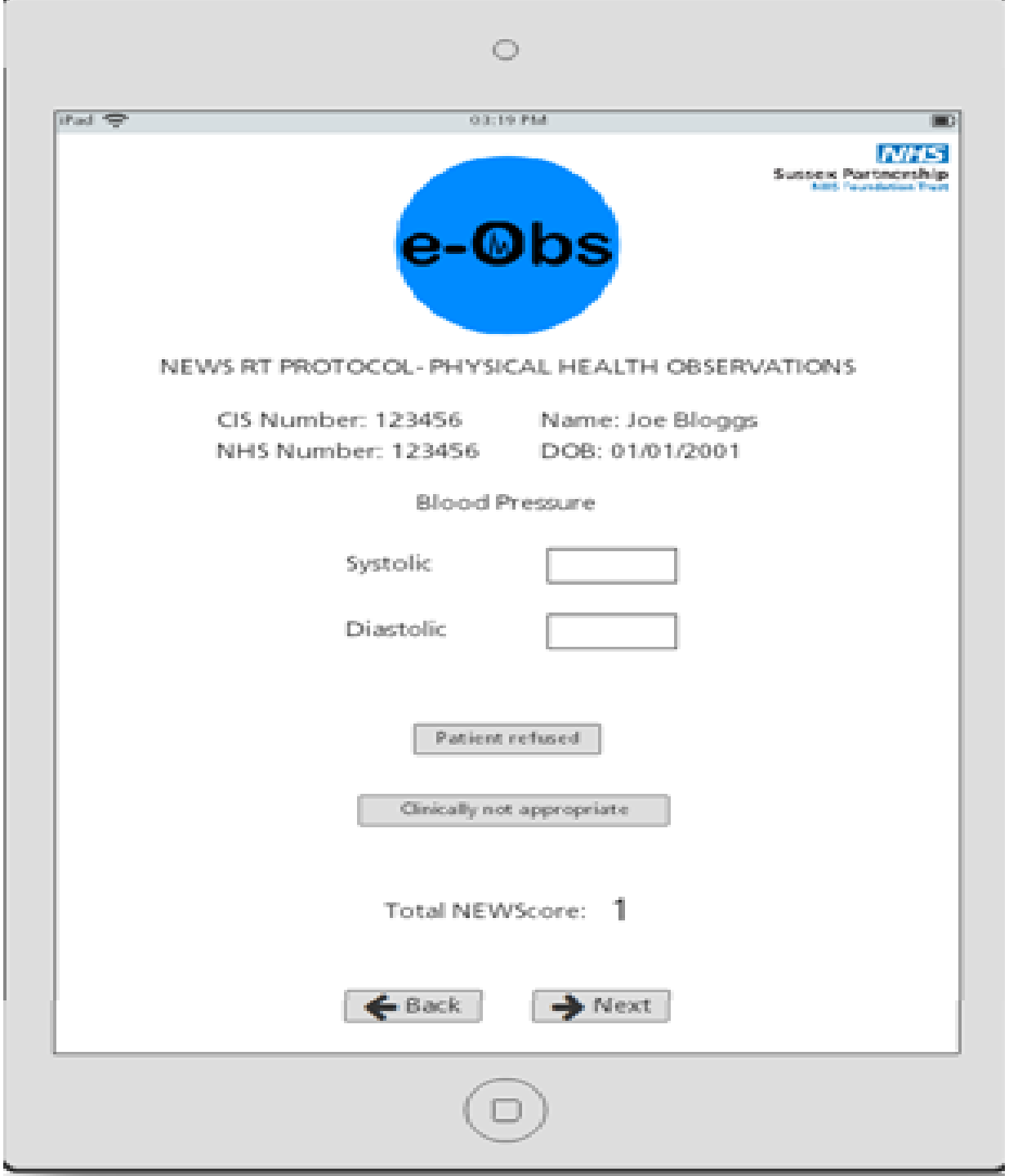
Emerging technology



RT e-Obs

- Sussex Partnership web design to complete RT NEWs
- Single entry – reduces confusion
- Alerts every 15 mins
- Alerts amber/red if goes above trigger scores
- Production of graphs
- Feeds information directly into Care Notes
- No loss of forms (governance issues and loss of information)


iPad
01:55 PM
NHS
Sussex Partnership
e-Obs
NEWS RT PROTOCOL - PHYSICAL HEALTH OBSERVATIONS
CIS Number: 123456
Name: Joe Bloggs
NHS Number: 123456
DOB: 01/01/2001
Respiratory Rate
Total NEWScore: 1
Back
Next
Only able to add numeric characters to the field. If the score on any idividual page equals 3, a pop up will need to appear giving further advice. Please see the pop up example mockup at the end.
The Total NEWScore will update as the staff member fills out the form. Scoring is from 0-3 for each page. Certain number parameters will determine what score is given on each page. i.e. for Resp Rate, a score of between 21-24 scores 2 points.


iPad
03:19 PM
NHS
Sussex Partnership
e-Obs
NEWS RT PROTOCOL- PHYSICAL HEALTH OBSERVATIONS
CIS Number: 123456
Name: Joe Bloggs
NHS Number: 123456
DOB: 01/01/2001
Blood Pressure
Systolic
Diastolic
Patient refused
Clinically not appropriate
Total NEWScore: 1
Back
Next

Thank You

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