

ACC BIST

Business Rules Overview

As at 11-May-2022

ACC BIST pilot project: business rules and acceptance criteria

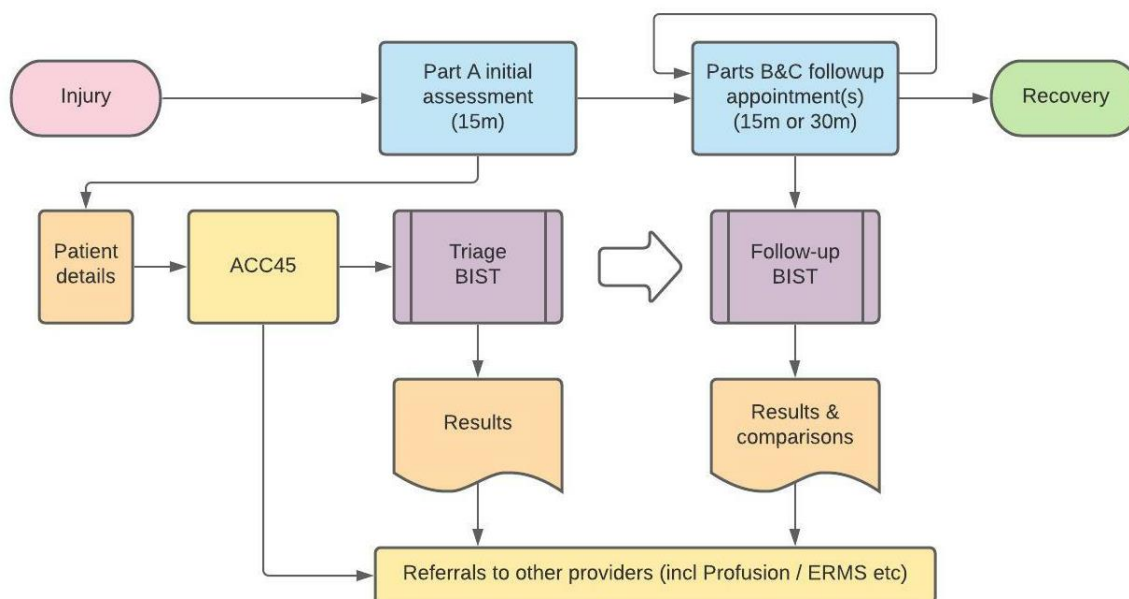
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1 Overview

Manage My Health (MMH) has updated the online Brain Injury Screening Tool (BIST) in conjunction with ACC and AUT. The revised BIST form has been designed specifically for the ACC mTBI pilot commencing May 2022 for practices in Auckland and Canterbury running a Medtech PMS (Evolution or MT32).

For the pilot, an initial patient BIST assessment is made by the clinician at the first triage appointment. Up to 3 follow-up BIST appointments will be fully funded by ACC. BIST scores from each appointment may be compared to assess the patient's recovery progress.



2 Quick Reference Guide

When utilising the MMH BIST form to screen a mTBI patient, follow these steps –

Step	Explanation
1. Select patient	as normal, in the Medtech PMS (Evolution or MT32)
2. Enter ACC claim	details in the PMS as normal, into ACC45 or Accident form
3. Open BIST form	from under MMH Patient Tools, select accident, answer questions, click “Submit”, (or “Save & Complete Later”)
4. Save BIST summary	as pdf, to your desktop or local drive, once submitted, to attach to referral
5. Make referral	if appropriate, using standard PMS referral forms (ED, concussion service, physio, or other) & attach BIST summary pdf
6. Write consultation note	as normal
7. Invite patient to return	in 7-10 days if appropriate, for up to 3 ACC-funded follow-up (BIST) appts

3 BIST Form Contributing Considerations

3.1 Medtech PMS options (environment)

1.1	Medtech 32 (latest version)
1.2	Evolution (latest version)

3.2 Accident preparation possible scenarios (before BIST entry)

2.1	User enters accident into ACC45 form in Medtech
2.2	User enters accident into Accident form in Medtech
2.3	User doesn't enter accident number before the BIST (entered retrospectively into the Triage BIST)

3.3 Practice types (attempting to run the BIST)

3.1	Practice is enrolled in the pilot (on list of enrolled practices w PHO email address)
3.2	Practice on special list of (7) unenrolled permitted practices (gets 5-tab cut-down version of BIST)
3.3	Practice is not enrolled in the pilot (gets message telling them they cannot run the BIST)

3.4 BIST patient types (consented or not)

4.1	Gave consent at Triage appointment (gets full 8-tab version of BIST)
4.2	Did not give consent at Triage appointment (gets 5-tab cut-down version of BIST)

3.5 BIST appointment types

5.1	Triage (first appointment for this accident number), determines consent
5.2	Follow-up with consent (3 funded by ACC), views results from prev BISTs for same accident
5.2	Follow-up without consent behaves like another Triage (gets 5-tab cut-down version of BIST)

3.6 BIST form exit options

6.1	Submit – data is validated, data is saved, PDF is produced, Medtech integrations occur
6.2	Save & complete later – incomplete form data is saved, no validation required
6.3	Cancel – data for this form is discarded
6.4	Close (browser window red X) – form preserved as at the last save (most recent entries discarded)

3.7 BIST form entry points

7.1	New form with no previously saved BISTs for same patient, opens empty with 5 tabs
7.2	Incomplete saved form (opens w 5 tabs if not consented, opens w 8 tabs if already consented)
7.3	New form (w prev consented BIST) for same patient automatically opens as F/U for prev accident, & accident number can be changed if necessary
7.4	New form w prev unconsented BIST(s) for same patient opens empty with 5 tabs

3.8 BIST compulsory fields for SUBMIT

8.1	Consent (Y/N)
8.2	Address, 24hr question, symptom scores (as per original BIST form)
8.3	Diagnosis (Q5a) and Referral intention (Q6a), if consent=Y

3.9 Medtech integrations on SUBMIT (as per original BIST)

9.1	BIST PDF saved into Medtech Patient Outbox (opens as PDF into browser)
9.2	BIST PDF saved into Medtech Patient Forms history
9.3	BIST completion shows in daily record
9.4	Classification of "Concussion" saved for patient, giving BIST scores in comment
9.5	New consultation note form opens

3.10 Email integrations on SUBMIT (new)

10.1	If a referral is recommended by the form, or a referral intention is entered, email is sent to PHO
10.2	PREM email to consented patient is queued, for sending in 3 weeks' time if no later BIST occurs

4 BIST Form User Story Examples

4.1 Standard Scenario (Happy Path)

As a GP, I would like to complete leading edge ACC-funded mTBI treatment involving the BIST form for my head injury accident patient, from within my medtech PMS, under the following patient treatment scenario(s) –

1	Patient arrives for Triage appointment. GP enters new ACC45 into PMS. GP opens BIST and selects accident. Patient gives consent. GP enters data and views red flag messages from BIST. GP makes a diagnosis and decides on a referral intention. GP completes BIST and submits. GP saves BIST PDF. GP makes referral from the PMS and attaches the BIST PDF to the referral.
2	Same patient arrives for Follow-up appointment 7 days later. GP opens BIST and selects same accident. GP can see results of Triage BIST but cannot change fields entered at previous appointments. GP can enter data into any fields where data was not entered previously. 24hr question (ideally) automatically assumed to be N for this appointment. GP enters new symptom scores and impact score. GP views comparisons with prev BIST and red flag messages. GP adds any extra notes and decides on a referral intention. GP completes BIST and submits. GP saves BIST PDF. GP makes referral from the PMS and attaches the BIST PDF to the referral.
3	Same patient arrives for Follow-up appointment 7 days later. GP opens BIST and selects same accident. GP can see results of both previous BISTs but cannot change fields entered at previous appointments. GP can enter data into any fields where data was not entered previously. 24hr question (ideally) automatically assumed to be N for this appointment. GP enters new symptom scores and impact score. GP views comparisons with previous BISTs and red flag messages. GP adds any extra notes and decides on a referral intention. GP completes BIST and submits. GP saves BIST PDF. GP makes referral from the PMS and attaches the BIST PDF to the referral.
4	Same patient arrives for Follow-up appointment 7 days later. GP opens BIST and selects same accident. GP can see results of both previous BISTs but cannot change fields entered at previous appointments. GP can enter data into any fields where data was not entered previously. 24hr question (ideally) automatically assumed to be N for this appointment. GP enters new symptom scores and impact score. GP views comparisons with previous BISTs and red flag messages. GP adds any extra notes and decides on a referral intention. GP (ideally) advises patient that this is their last ACC-funded appointment. GP completes BIST and submits. GP saves BIST PDF. GP makes referral from the PMS and attaches the BIST PDF to the referral.
5	Patient has a new head injury. Patient arrives for Triage appointment. GP enters new ACC45 into PMS. GP opens BIST and selects accident. Patient gives consent. GP enters data and views red flag messages from BIST. GP makes a diagnosis and decides on a referral intention. GP completes BIST and submits. GP saves BIST PDF. GP makes referral from the PMS and attaches the BIST PDF to the referral.
c	Etc for second accident

4.2 Types of Variation Scenarios






7	Patient doesn't give consent, so 5 tabs are displayed, no email to PHO, no PREM
8	Patient didn't give consent at triage for this accident, so follow-up is treated like triage (5 tabs)
9	Patient didn't know accident number, most data is entered but form is saved for completion later
9	Form can be saved incomplete at any time, then later retrieved, completed and submitted
10	Form can be saved incomplete at any time, then later retrieved and cancelled
11	No referral was recommended or made, so a real-time email is NOT sent to the PHO

5 BIST Acceptance Criteria by Page/Tab

5.1 Patient Page (Tab 1)

5.1.1 Acceptance criteria – patient page

1.	For a new empty form, only the original 5 tabs display until patient consent is given
2.	Address is retrieved from PMS and is mandatory (unchanged from original)
3.	Most patient core data is retrieved from PMS. Some can be amended but not saved back to PMS
4.	Other Gender should only display if Gender = O (new field), similar to Other Ethnicity
5.	On selection of ACC45 nbr, retrieve data from earlier forms, & if already consented display all 8 tabs
6.	New BIST summary panel at bottom is filled w prev BIST data on selection of ACC45 nbr
7.	Revised form handling buttons on bottom panel (CANCEL / SAVE & COMPLETE LATER / NEXT)

Patient
Triage
Symptom Scale
Impact Score
Provider

Fields marked with * are mandatory About BIST

This tool should be used in addition to clinical judgment and other assessments such as the Vestibular/Oculomotor Motor Screening (VOMS), King-Devick or the Romberg's test. Additional questioning to add to the clinical picture is encouraged.

Patient Details

Personal Information		Contact Details	
First Name *	TEST	Street Address *	Market Place
Surname *	RONALD	Suburb	Auckland CBD
Date of Birth *	10/10/1970	City *	Auckland
Gender *	<input checked="" type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Other	Post Code	
Other Gender *		Mobile	02300003
NHI	PRP1660	Email	
Ethnicity	Other		
Other Ethnicity *			

Emergency Contact

Name		Mobile	
Relationship	Select	Other Phone	
Email			

Accident Details

Select Accident * AA99999 - 07/05/2022 8:13:56 am - Rugby head injury

ACC45 Number AA99999 Accident Date 07/05/2022

Details Rugby head injury


Is work related ☐ Yes ☒ No

Current and previous BIST forms for this injury

For Accident number: AA99999 Injury date: 07/05/2022

Previous completed BIST forms for this injury (at this practice):

BIST Appointments	Date Completed	Physical Score (Out of 40)	Vestibular Score (Out of 40)	Cognitive Score (Out of 40)	Additional Physical Score (Out of 40)	Impact Score (Out of 10)
Initial Triage BIST	9/05/2022	36	32	28	0	6
1st follow-up appointment BIST	9/05/2022	24	20	16	12	6

Cancel
Save & Complete Later





Acknowledgements:

This electronic version of the Brain Injury Screening Tool is based on the Auckland University of Technology Brain Injury Screening Tool or BIST. The BIST tool has been developed by the ACC Concussion Clinical Expert Group: Alice Theadom, Natalia Hardaker, Penelope Day, Kris Fernando, Katherine Forch, Kevin Henshall, Doug King, Mark Fulcher, Renata Gottgroy, Sam Jewell, Stephen Kara, Patria Hume.


5.2 Triage Page (Tab 2)

5.2.1 Acceptance criteria – consent question

8.	New Patient Consent question YES / NO
9.	The pop-up information box is also shown if they click on No for consent
10.	Consent question is not available (assumed to be no) for the 7 practices with limited access
11.	Consent is only asked at the first (Triage) appointment for a new accident
12.	Consent answer applies to all subsequent BIST forms for the same accident
13.	Consent visible but read-only for follow-up appointments for same accident (regardless of yes or no)
14.	Consent is a mandatory field for SUBMIT
15.	If consent = NO, only 5 tabs display
16.	If consent = YES at triage, then 7 tabs display (all except progress)
17.	If consent = YES at follow-up, then all 8 tabs display

Brain Injury Screening Tool



Patient

Triage

Symptom Scale

Impact Score

Provider

Fields marked with * are mandatory About BIST

This tool should be used in addition to clinical judgment and other assessments such as the Vestibular/Oculomotor Motor Screening (VOMS), King-Devick or the Romberg's test. Additional questioning to add to the clinical picture is encouraged.

Patient Consent

Statement: This assessment tool is part of an ACC and AUT research study, and your assessment data will also be used by Manage My Health and a Primary Health Organisation for service improvement purposes. I need to ask for your consent to participate in the study. Your consent will apply to this consultation and any follow-up consultations for this injury. Please answer yes or no to the following question.

Question: Do you agree to participate in the pilot and understand that ACC and AUT will collect and use your information to evaluate the performance of the pilot to improve assessment and treatment for concussion patients? i

☐ Yes ☐ No

Information

If the patient declines consent, then a cut-down version of the BIST tool will be offered for the initial assessment, with fewer questions and no follow-up linking. **Patients will not have access to follow up appointments paid for by ACC as these are elements being tested as part of the pilot project.**

OK

Triage page (tab 2) continued ...


5.2.2 Acceptance criteria – accident details

18.	Date and time of injury are pre-filled from the accident form and cannot be changed
19.	Age is pre-filled from PMS and cannot be changed
20.	Consultation date defaults to today for a new appointment, and cannot be changed

Triage

Date of Injury: 23/03/2022 Time of Injury: 3:57:27 pm

Date of Consultation: 5/4/2022 Age: 51 Socially isolated or living alone? ☐ Yes ☐ No


1. Please tell me about what happened (Observe for high risk indicators such as suspicion of skull fracture, focal neurological deficit, high speed, focal blunt trauma or fall from height (e.g. >5 stairs) 

5.2.3 Acceptance criteria – triage red flag questions


21.	Each red flag message shown below will only appear if the answer fulfills the required conditions
22.	See table further below for red flag messages and information box messages
23.	For Q7, the four sub-questions (a b c d) will not be asked or shown if the answer to Q7 is No.
24.	Q7c "When was your last injury" is now free text (not a date field)
25.	Any question that is answered at the triage appointment will be read-only at the follow-up
26.	Any question that has NOT been previously answered may be entered at a follow-up appointment
27.	Q11 is asked at the triage appointment. Each subsequent follow-up appt will assume NO
28.	Revised buttons on bottom panel (<input type="button" value="PREV"/> / <input type="button" value="CANCEL"/> / <input type="button" value="SAVE & COMPLETE LATER"/> / <input type="button" value="NEXT"/>)

Date of Consultation: 09/05/2022 Age: 69 Socially isolated or living alone? ☒ Yes ☐ No


If over 65 years, and socially isolated or living alone, consider referral to Emergency Department.

1. Please tell me about what happened (Observe for high risk indicators such as suspicion of skull fracture, focal neurological deficit, high speed, focal blunt trauma or fall from height (e.g. >5 stairs) 

something

a. Are there high-risk indicators such as suspicion of skull fracture, focal neurological deficit, high speed, focal blunt trauma or fall from height (e.g. >5 stairs)  ☒ Yes ☐ No

If yes to high risk, consider referral to Emergency Department

b. Is there emotional or psychological trauma associated with the incident?  ☒ Yes ☐ No


(e.g. assault, fatalities in a car accident, domestic violence)

If yes to trauma, and not recovered by 7 days consider referral to concussion service.


2. Did anyone with you at the time of the injury say anything else about what happened?

observations

Triage tab (2) continued ...

3. Have you been sick or vomited? ☒ Yes ☐ No a. If yes, how many times


If > 1 vomiting episode, consider referral to Emergency Department.

4. Were you knocked out (or did you lose consciousness)? ☒ Yes ☐ No ☐ Unknown a. If yes, how long hrs mins



If loss of consciousness > brief, consider referral to Emergency Department.

5. Did you have a fit or seizure straight afterwards? e.g. go stiff or shake violently? ☒ Yes ☐ No ☐ Unknown


If yes to seizure, consider referral to Emergency Department.

6. Are you feeling better, worse or about the same since the injury? ☐ Better ☒ Worse ☐ About the same


If symptoms have worsened, consider referral to the Emergency Department.

7. Have you hit your head or had a concussion/brain injury before?  ☒ Yes ☐ Noa. If yes, how many times? b. Recent injury or previous prolonged recovery?  ☒ Yes ☐ Noc. When was the last injury? d. How long did it take you to recover last time, days, weeks, months?

If recent injury or previous prolonged recovery, consider referral to concussion service.

8. Are you currently taking any medications that thin the blood e.g. anti-coagulants? ☒ Yes ☐ No

If yes to anti-coagulants, consider referral to Emergency Department.

9. Have you ever experienced any difficulties with your mental health? ☒ Yes ☐ No

If yes to MH issues, and not recovered by 7 days, the person may be at moderate risk of poor recovery and early specialist input may be required. Consider referral to concussion service.

10. Do you have a history of migraine? ☒ Yes ☐ No

If yes to migraine, and not recovered by 7 days consider referral to concussion service.

11. Was the accident within the last 24 Hours? *

☐ Yes ☒ No - more than 24 hours ago

Cancel

Save & Complete Later



Triage page (tab 2) continued ...

Triage red flag text, and planned explanation boxes, by question:




Question	Red flag text	Explanatory text
Age >= 65 Isolated=Y	If over 65 years, and socially isolated or living alone, consider referral to Emergency Department	If over 65, consider a lower threshold for hospital evaluation, or referral to the Emergency Department for assessment and observation (according to the Canadian CT Head rules)
1 What happened		Dangerous mechanism of injury is an identified risk factor where hospital evaluation should be considered (according to the Canadian CT Head rules)
1a High risk	If yes to high risk, consider referral to Emergency Department	
1b Trauma	If yes to trauma and not recovered by 7 days, consider referral to concussion service	Post-injury psychological distress is an evidence-based predictor of prolonged recovery (Silverberg et al, 2019)
2. Onlookers view		
3 Vomit > 1	If > 1 vomiting episode, consider referral to Emergency Department	Vomiting ≥2 is a recommendation for a brain scan according to the Canadian CT Head rules
4 Lost Consciousness	If loss of consciousness > brief, consider referral to Emergency Department	Loss of consciousness is a consideration for hospital evaluation according to the American Association of Neurological Surgeons and a predictor of prolonged recovery (Roy 2021).
5 Seizure	If yes to seizure, consider referral to Emergency Department	A seizure witnessed by another person is a consideration for hospital evaluation according to the American Association of Neurological Surgeons and parachute guidelines.
6 Worse	If symptoms have worsened, consider referral to the Emergency Department	Worsening of symptoms within a few days of injury could be indicative of a slow brain bleed or increased swelling in the brain, consider referral to the ED for a brain scan.
7 Previous		A history of previous traumatic brain injury (concussion) is a risk factor prolonged recovery (Ontario Neurotrauma Guidelines, 2013)
7b Recent or prolonged	If recent injury or previous prolonged recovery and not recovered by 7 days, consider referral to concussion service	Previous prolonged recovery means that it is more likely that the person will have prolonged recovery for a subsequent injury
8 Anti-coagulants	If yes to anti-coagulants, consider referral to Emergency Department	Anticoagulated patients are at elevated risk for intracranial bleeding (Ontario Neurotrauma Guidelines, 2013)
9 Mental health	If yes to MH issues and not recovered by 7 days, the person may be at moderate risk of poor recovery and early specialist input may be required. Consider referral to concussion service	Evidence has revealed that people with a history of anxiety/depression or other psychological disorders have more difficulty coping with the challenges of a brain injury and may need further support to recover.
10 Migraine	If yes to migraine and not recovered by 7 days, consider referral to concussion service	If yes to migraine and not recovered by 7 days, consider referral to concussion service

NOTE: New change “not recovered by 7 days,” to “not recovering as expected 7 days following injury,”


5.3 Progress Page (Tab 3 – New)

5.3.1 Acceptance criteria – progress page

29.	The “Progress” tab will only be shown at follow-up appointments for consented patients
30.	Comments from any earlier follow-up appointments may be seen or hidden as required by clicking on the gray bar containing the heading.
31.	Revised buttons on bottom panel (PREV / CANCEL / SAVE & COMPLETE LATER / NEXT)

Brain Injury Screening Tool



Patient
Triage
Progress
Symptom Scale
Impact Score
Decision
Education
Provider

Fields marked with * are mandatory ⓘ About BIST

This tool should be used in addition to clinical judgment and other assessments such as the Vestibular/Oculomotor Motor Screening (VOMS), King-Devick or the Romberg's test. Additional questioning to add to the clinical picture is encouraged.

Follow-Up Consultation - Current Progress

1. Progress notes from previous "Follow-up" appointments:

a. How were you feeling?

01/01/2022
Test - Feeling tired

b. Physical: Symptoms with physical activity?

01/01/2022
Test - symptoms worse with physical activity

c. Thinking: Symptoms with thinking?


01/01/2022
Test - symptoms worse with activity involving thinking

2. Current Progress:


a. Tell me how are you feeling now?

b. Are your symptoms better or worse with physical activity?

c. Are your symptoms better or worse with activity involving thinking?



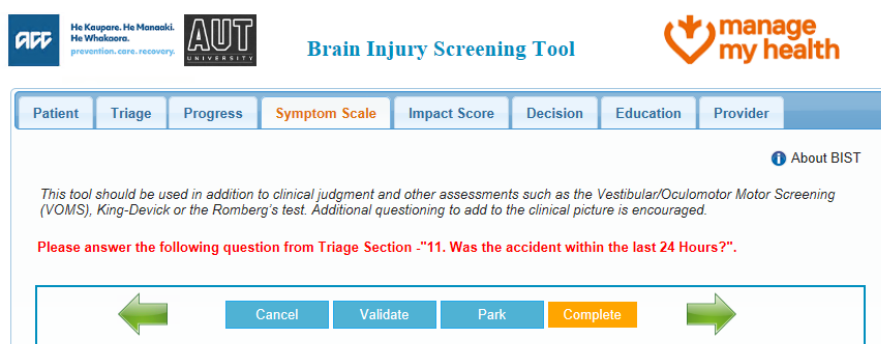
Cancel
Save & Complete Later



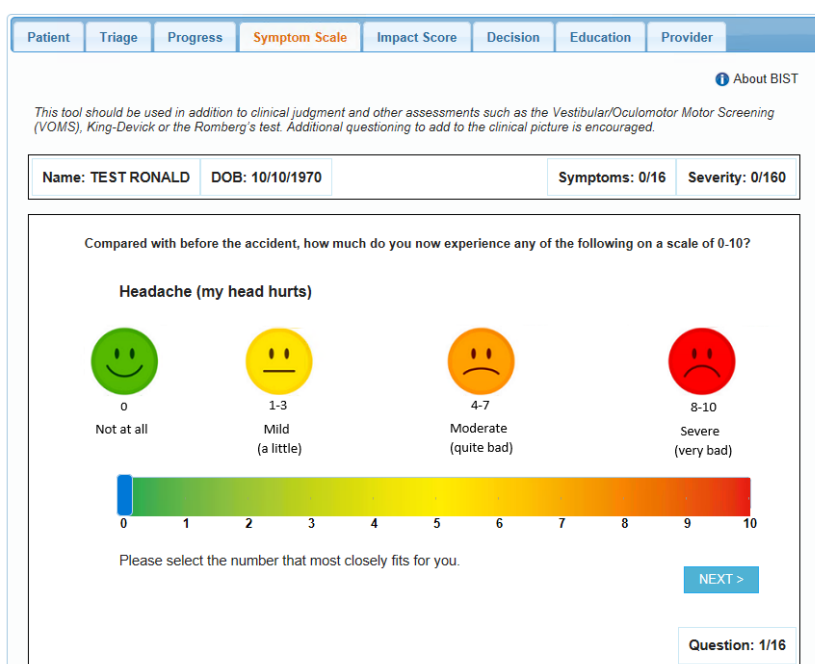
5.4 Symptom Scale Page (Tab 4)

5.4.1 Acceptance criteria – symptom scale page



32.	Follow-up appointments will be assumed to be >24h after the injury. Q11 need not be asked if F/U
33.	A new form shows no default answers (every BIST starts from scratch for symptom scores)
34.	If < 24h since accident (Q11 = YES) then 12 questions will be asked
35.	If > 24h since accident (Q11 = NO) then 16 questions will be asked
36.	Prompts for questions asked match question prompts in summary table at the end (see below)
37.	After completion of scoring, summary table shows correct answers by cluster
38.	Second summary table show correct answers, and correct dominant cluster
39.	Symptom scores must all be entered before Submit is permitted (mandatory fields)
40.	Once score entry is finished, save and re-entry is required to change a value (workaround)
41.	Revised buttons on bottom panel (PREV / CANCEL / SAVE & COMPLETE LATER / NEXT)




Example symptom score question



Symptom Score page (tab 4) continued ...

Brain Injury Screening Tool







Patient Triage **Symptom Scale** Impact Score Provider

About BIST

This tool should be used in addition to clinical judgment and other assessments such as the Vestibular/Oculomotor Motor Screening (VOMS), King-Devick or the Romberg's test. Additional questioning to add to the clinical picture is encouraged.

Name: TEST RONALD DOB: 10/10/1970 Symptoms: 16/16 Severity: 76/160

Symptoms Questionnaire Summary – more than 24 hours

		Not at all	Mild (a little)			Moderate (quite bad)				Severe (very bad)		
		0	1	2	3	4	5	6	7	8	9	10
Physical	Headache (my head hurts)											✓
	My neck hurts										✓	
	I don't like bright lights									✓		
	I don't like loud noises								✓			
Total physical score (out of 40): 34												
Vestibular-ocular	I feel dizzy or like I could be sick							✓				
	If I close my eyes, I feel like I am at sea						✓					
	I have trouble with my eyesight (vision)					✓						
	I feel clumsy				✓							
Total vestibular score (out of 40): 18												
Cognitive	It takes me longer to think			✓								
	I forget things		✓									
	I get confused easily		✓									
	I have trouble concentrating			✓								
Total cognitive score (out of 40): 6												
If more than 24 hours post-injury, please also rate these physical symptoms												
	I get angry or irritated easily				✓							
	I just don't feel right					✓						
	I feel tired during the day						✓					
	I need to sleep a lot more or find it hard to sleep at night							✓				
Total additional physical score (out of 40): 18												

Symptom Score Summary – more than 24 hours


Cancel
Save & Complete Later


5.5 Impact Score Page (Tab 5)

5.5.1 Acceptance criteria – impact score page

42.	A new form shows no default answer (every BIST starts from scratch for impact score)
43.	Triage page red flag messages are all listed after the impact score question.
44.	Symptom score red flag messages (from current form) are listed after triage red flag messages.
45.	New graph illustrates progress for all BIST forms completed for this accident, so far
46.	Calculated form recommended referral is displayed
47.	Disclaimer note beneath recommendations
48.	Revised buttons on bottom panel (PREV / CANCEL / SAVE & COMPLETE LATER / NEXT)

Patient
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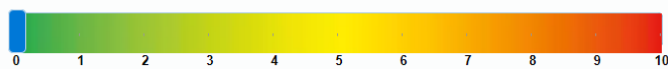
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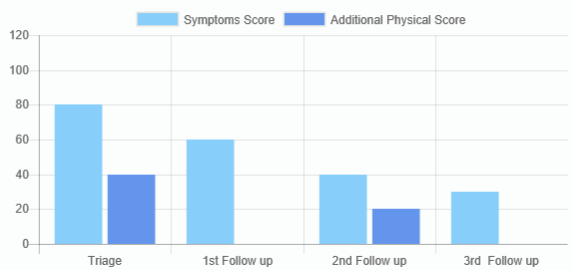
Impact Score

Injuries to the brain can affect how a person feels, behaves, thinks and how able they are to do everyday tasks.

On a scale of 0 to 100, where 0 means that you do not feel the injury has had any impact on you at all and 100 means you feel that injury stops you from doing anything, how much do you feel your injury is impacting on you at this point in time?



BIST Symptom total and Additional Physical score



Stage	Symptoms Score	Additional Physical Score
Triage	80	40
1st Follow up	60	0
2nd Follow up	40	20
3rd Follow up	30	0

Summary of red flag messages from Triage section.

- If over 65 years, and socially isolated or living alone, consider referral to Emergency Department.
- If yes to high risk, consider referral to Emergency Department.
- If yes to trauma and not recovered by 7 days, consider referral to concussion service.
- If > 1 vomiting episode, consider referral to Emergency Department.
- If loss of consciousness > brief, consider referral to Emergency Department
- If yes to seizure, consider referral to Emergency Department
- If symptoms have worsened, consider referral to the Emergency Department
- If recent injury or previous prolonged recovery and not recovered by 7 days, consider referral to concussion service.
- If yes to anti-coagulants, consider referral to Emergency Department.
- If yes to MH issues and not recovered by 7 days, the person may be at moderate risk of poor recovery and early specialist input may be required. Consider referral to concussion service.
- If yes to migraine and not recovered by 7 days, consider referral to concussion service.

Summary of score indicators from symptom scale and impact score

- If severe headache (>7) consider referral to Emergency Department
- If 50/66 or more consider referral to specialist concussion service, as this person is likely to be at moderate risk of poor recovery
- If < 50/66 this person is at low risk, monitor and follow-up in 7-10 days

NOTE: If there is a high symptom cluster in any category consider onward referral for specialist support, eg. physio for vestibular issues.

NOTE: If low symptom score but high impact (eg. unable to work), explore whether a particular symptom needs to be addressed to support recovery and return to function, e.g. refer to physio specifically for neck pain.

NOTE: If low symptom burden and low impact, consider whether patient has recovered and can be discharged

Calculated form referral recommendation: **Consider referral to ... [ED / CS if not recovered by 7d / None (follow-up in 7-10 days)]**




Note: These recommendations are just a guide if you are concerned about a patient, please consider referral to the emergency department or concussion service for further investigation. It's important to reassure the patient that most people recover well from these injuries. Advise on the importance of coming back for a follow up in 7-10 days to check people are recovering as expected and to reassure if that's not the case then additional supports can be provided.

←
Cancel
Save & Complete Later
→

5.6 Decision Page (Tab 6 – New)

5.6.1 Acceptance criteria – top of decision page

49.	Decision tab only displays for consented patients
50.	Clinical examination recommendations from current form symptom scores display at the top.
51.	Fields to Q5 are intended for the triage appointment & will be read-only at F/U, if previously filled
52.	Fields to Q5 may be filled at any appt if not yet filled at any earlier appt

Brain Injury Screening Tool

Patient | Triage | Progress | Symptom Scale | Impact Score | **Decision** | Education | Provider

Fields marked with * are mandatory ⓘ About BIST

This tool should be used in addition to clinical judgment and other assessments such as the Vestibular/Oculomotor Motor Screening (VOMS), King-Devick or the Romberg's test. Additional questioning to add to the clinical picture is encouraged.

Initial Triage Consultation: Basic Clinical Examination (2 mins)

Considerations for clinical examination (arising from symptom scores)

My head hurts score is 6 which is > 3, therefore consider brief headache assessment (to determine type of headache)

My neck hurts score is 8, which is > 3, therefore consider brief neck exam (chin to chest, look up to the sky, look over each shoulder and side flexion) + any tenderness on palpation?

The cognitive scores are Longer to think[7], Forget things[10], Confused easily[4], Trouble concentrating[9] which means a cognitive item is > 3, therefore consider brief memory test (e.g. immediate or delayed memory test)

The vestibular scores are Dizzy or sick[6], Feel at sea[9], Eyesight trouble[3], Feel Clumsy[9] which means a vestibular item is > 3, therefore consider a balance assessment such as the VOMS or modified Romberg.

1. Comments regarding physical examinations?

2. When did you first notice your symptoms?

3. Is there a need for a neurological exam (including the peripheral and cranial nerves)? ☐ Yes ☐ No ☐ Unsure
 ** [Click here](#) for information about focal neurology deficits. Isolated abnormalities may suggest a brain stem lesion and should prompt referral to ED.

4a. Are there additional injuries that may complicate the patients recovery? ☐ Yes ☐ No ☐ Unsure

4b. If yes, then details:?

Initial Triage Consultation: Provisional Diagnosis (1 min)

5a. Do you consider this person to have a diagnosis of concussion? ☒ Yes ☐ No ☐ Unsure

5b. Details (Optional):?

Decision page (tab 4) continued ...

5.6.2 Acceptance criteria – bottom of decision page

53.	Referral information from previous BIST consultations are available for viewing
54.	Referral fields have no default values
55.	Additional Comments from previous BIST consultations are available for viewing
56.	Additional comments field has no default
57.	Revised buttons on bottom panel (PREV / CANCEL / SAVE & COMPLETE LATER/ NEXT)

Referral Intention (2-3 mins)

Decision points at end of assessment: If initial symptom scoring above threshold at 7 days, consider onward referral to concussion service.

Referral information from previous appointments:

9/05/2022

Referral made: ED

Referral reason:

9/05/2022

Referral made: Other

Referral reason:

6a. Which referral will be made as a result of this assessment?

☐ ED
☒ Concussion SV
☐ Other
☐ None

6b. Reason? If referral has been made based on criteria other than BIST, please provide rationale:

**The referral information above will be emailed to your PHO in real time.

Follow-up Consultation: Additional comments

Additional comments from earlier follow-up appointments:

01/01/2022

Test - Feeling tired

01/01/2022

Test - Feeling tired

7. Additional comments from the current follow-up appointment?

←

Cancel




Save & Complete Later

→

5.7 Education Page (Tab 7 – New)

5.7.1 Acceptance criteria – education page

58.	Education tab will only display for consented patients
59.	Revised buttons on bottom panel (PREV / CANCEL / SAVE & COMPLETE LATER / NEXT)

Brain Injury Screening Tool

Patient
Triage
Progress
Symptom Scale
Impact Score
Decision
Education
Provider

[About BIST](#)

This tool should be used in addition to clinical judgment and other assessments such as the Vestibular/Oculomotor Motor Screening (VOMS), King-Devick or the Romberg's test. Additional questioning to add to the clinical picture is encouraged.

Advice and Education

- If symptoms improving consider RTW / RTS certification and follow up in 7-10 days.
- Consider type of work where may need advice **High risk job**, (eg works at heights, uses machinery, driving, flying); **Physically demanding job** (eg on feet all day, high level sportsperson); **Cognitively demanding job/study load** (medical/health practitioner, pilot, lawyer, engineer, teachers, labourers, students (higher secondary schooling and tertiary level) **Visually demanding job** (using a screen all day)
- Advice on return to learn/work, return to sport, return to driving
- If symptoms not improving and / or symptom scoring above threshold, or high demand job consider onward referral to concussion service
- Consider referral to physio / Psych / community service if these symptom clusters are present

Prompt consideration of symptom management based on symptom clusters (e.g. pain medicines, referrals to physiotherapist for neck/musculoskeletal treatment) as required.

Useful Links

ACC concussion patient education form: [Link Required](#)
 Concussion patient education videos: [Click here](#)
 ACC return to work certification: [Click here](#)
 ACC return to sport: [Click here](#)

←
Cancel
Save & Complete Later
→

Acknowledgements:



This electronic version of the Brain Injury Screening Tool is based on the Auckland University of Technology Brain Injury Screening Tool or BIST. The BIST tool has been developed by the ACC Concussion Clinical Expert Group: Alice Theadom, Natalia Hardaker, Penelope Day, Kris Fernando, Katherine Forch, Kevin Henshall, Doug King, Mark Fulcher, Renata Gottgroy, Sam Jewell, Stephen Kara, Patria Hume.

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5.8 Provider Page (Tab 8)


5.8.1 Acceptance criteria – provider page

60.	Revised buttons at bottom (<input type="button" value="PREV"/> / <input type="button" value="CANCEL"/> / <input type="button" value="SAVE & COMPLETE LATER"/> / <input type="button" value="SUBMIT"/>)
61.	The SUBMIT will not proceed if any required fields are missing. These are patient address, ACC45 number, consent Y/N, symptom scores, diagnosis, and referral intention.
62.	If the “SUBMIT” will not proceed due to missing information, the form will need to either be canceled, closed, or saved until such time as it can be completed
63.	The “Submit”, “Cancel”, and “Save & Complete Later” messages and functions all work correctly

He Kaupapa. He Manaaki.
He Whakaora.
prevention. care. recovery.

Brain Injury Screening Tool




Patient | Triage | Progress | Symptom Scale | Impact Score | Decision | Education | **Provider**

Fields marked with * are mandatory ⓘ About BIST

This tool should be used in addition to clinical judgment and other assessments such as the Vestibular/Oculomotor Motor Screening (VOMS), King-Devick or the Romberg's test. Additional questioning to add to the clinical picture is encouraged.

Provider Details

Clinician Name		Practice Details	
Name *	Sam Entwistle	Address Details	Street, Suburb, City.
HPI #		Telephone	253234234
NZMC	A88984-3	Fax	234234344
Practice Name *	VM03Location		



Acknowledgements:

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Confirm

You have chosen to SUBMIT this BIST form. All data entered will be the final version for the current appointment. Are you sure you want to SUBMIT this form?

Confirm

You have chosen to SAVE this form to complete later. You will need to return and complete this incomplete BIST form before you can start a new BIST for the same patient. Are you sure you want to SAVE this form to complete later?

5.9 Form Completion and PDF access

5.9.1 Acceptance criteria - after SUBMIT

64.	A PDF summary of the form is available to save or print after the form has been completed
65.	The BIST PDF is also available in the patient outbox and forms history
66.	A classification (diagnosis) or concussion is written, and BIST severity score is noted there



Brain Injury Screening Tool

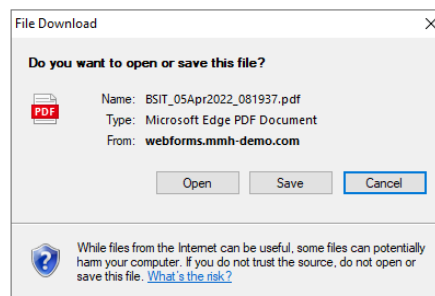


Brain Injury Screening Completed

- The Brain Injury Screening was saved successfully
- A PDF copy of the completed screening is saved against the patient record in the PMS Patient Outbox and Daily Record.
- Please click on the print button below to print a copy for the patient

Print Copy for the Patient **Close**

Note: You may re-print a copy of the Brain Injury Screening PDF from the Patient Outbox in the future.



Tck	Date	Document	Subject	Folder	Prov
1	5 Apr 2022	w/FORM	Brain Injury Screening Tool	N/A	SFE

TEST, MR Patient (80.1) **A 3 - R** **AAA7777**
 123 Beresford Street, New Brighton, Christchurch 26 Aug 1992 29 yrs Male European not defined 0.00

Patient Manager

New Consultation

Actions • Recent Visits • Show All • Incomplete Tasks: 0 • OverDue Tasks: 0

02 May 2022 (Monday) IAN

Concussion (\$60.00) - Concussion Assessed within 24hrs-12 Symptoms -Severity-70
 Classification: 02 May 2022-Concussion (\$60.00)

Brain Injury Screening Tool PDF
 Radiology Order

ADH

Brain Injury Screening Tool PDF

23 Apr 2020 (Thursday) PHC

Sprain of elbow and forearm (\$51.00) - Left
 Accident: ZA78656-23 Apr 2020-Sprain elbow/forearm (\$51.00)
 Classification: 23 Apr 2020-Sprain elbow/forearm (\$51.00)

ACC45 - ZA78656 - testttt

End of Daily Record.

Patient Record

Subjective
 PC
 OE:


Objective
 Treatment:
 Plan:

Details Print

5.10 Existing PDF for reference

5.10.1 Acceptance criteria – for PDF

67. Branding and new fields will be added to the existing PDF ... currently underway


Brain Injury Screening Tool

Date: 05-Apr-2022 Ref: #22040508190770

Patient Details

Personal Information

Name: TEST RONALD Date Of Birth: 10/10/1970
 NHI: PRP1660 Gender: Male
 Ethnicity:
 Email:
 Address: Market Place, Auckland CBD, Auckland

Emergency Contact

Name: Relationship:
 Email: Mobile:
 Other Phone:

Accident Details

ACC45 Number: AC45577 Accident Date: 23/03/2022
 Accident Location: Is Work Related: Yes
 Details: details fell over

Triage

Date of Injury: 23/03/2022 Time of Injury: 12:00 am Date of Consultation: 5/4/2022

- Please tell me about what happened?
- Did anyone with you at the time of the injury say anything else about what happened?
- Have you been sick/vomited? Yes
- Were you knocked out (or did you lose consciousness)? Yes
 a. If yes, how long? 00 Hrs 00 Mins
- Did you have a fit or seizure straight afterwards? E.g. go stiff or shake violently? Yes
- Are you feeling better, worse or about the same since the injury? Worse
- Have you hit your head or had a concussion/brain injury before? Yes
 a. If yes, how many times?
 b. when was the last injury? last year
- Are you currently taking any medications that thin the blood e.g. anti-coagulants? Yes
- Have you ever experienced any difficulties with your mental health? Yes
- Was the accident within the last 24 Hours? No

Confidential Test Ronald NHI: PRP1660 Ref: #22040508190770 Printed Date: 05 Apr 2022 08:19 a.m. Page 1 of 2

Symptoms Details

Summary

Total Questions	16	Total Symptoms	0/16
Total Severity	0/160	Average	0

Questionnaire Details

ID	Type	Question	Condition	Score
1	Physical	Headache (my head hurts)	None	0
2	Physical	My neck hurts	None	0
3	Physical	I don't like bright lights	None	0
4	Physical	I don't like loud noises	None	0
5	Vestibular-ocular	I feel dizzy or like I could be sick	None	0
6	Vestibular-ocular	If I close my eyes, I feel like I am at sea	None	0
7	Vestibular-ocular	I have trouble with my eyesight (vision)	None	0

Questionnaire Details

ID	Type	Question	Condition	Score
1	Physical	Headache (my head hurts)	None	0
2	Physical	My neck hurts	None	0
3	Physical	I don't like bright lights	None	0
4	Physical	I don't like loud noises	None	0
5	Vestibular-ocular	I feel dizzy or like I could be sick	None	0
6	Vestibular-ocular	If I close my eyes, I feel like I am at sea	None	0
7	Vestibular-ocular	I have trouble with my eyesight (vision)	None	0
8	Vestibular-ocular	I feel clumsy – banging into things, tripping over, dropping things more than usual	None	0
9	Cognitive	It takes me longer to think	None	0
10	Cognitive	I forget things	None	0
11	Cognitive	I get confused easily	None	0
12	Cognitive	I have trouble concentrating	None	0
13	Additional Physical	I get angry or irritated easily	None	0
14	Additional Physical	I just don't feel right	None	0
15	Additional Physical	I feel tired during the day	None	0
16	Additional Physical	I need to sleep a lot more or find it hard to sleep at night	None	0

Impact Score

How much do injury is impacting on a scale of 0 to 100? 0

Provider Details

Name: Sam Entwistle HPI:
 NZMC: A89894-3 Telephone: 253234234
 Fax: 234234344 Practice: VM03Location
 Address: Street, Suburb, City, 1010