

4.0.03 DOC Cmte minutes

Head Injury update Committee meeting 1

Date: 23/03/21

Location: Virtual meeting

Minutes: Confirmed

NICE National Institute for
Health and Care Excellence

Committee members present:	
Caroline Balson [CB]	(Present for notes 1 – 9)
Ian Bernstein [IB] – Chair	(Present for notes 1 – 9)
Emily Feilding [EF]	(Present for notes 1 – 9)
Adel Helmy [AH]	(Present for notes 1 – 9)
Fiona Lecky [FL] – Topic adviser	(Present for notes 1 – 9)
Mark Lyttle [ML]	(Present for notes 1 – 9)
Virginia Newcombe [VN]	(Present for notes 1 – 9)
Curtis Offiah [CO]	(Present for notes 1 – 9)
Patrick O’Halloran [PO]	(Present for notes 1 – 9)
James Piercy [JP]	(Present for notes 1 – 9)
Gillian Richards [GR]	(Present for notes 1 – 9)
Matthew Wiles [MW]	(Present for notes 1 – 9)
Colin Williamson [CW]	(Present for notes 1 – 9)

Co-opted members present:	
Ganesh Bavikatte [GB]	(Present for notes 1 – 9)
Nicholas Brown [NB]	(Present for notes 1 – 9)
Hari Krishnan [HK]	(Present for notes 1 – 9)
Clara O’Brien [COB]	(Present for notes 1 – 9)
Barry Seemungal [BS]	(Present for notes 1 – 9)
Peta Sharples [PS]	(Present for notes 1 – 9)
Suzanna Watson [SW]	(Present for notes 1 – 9)

In attendance:		
Rupert Franklin [RF]	NICE Guideline Commissioning Manager	(Present for notes 1 – 3)
Emma Chambers [EC]	NICE Public	(Present for notes 1 – 3)

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	Involvement Programme	
Sharon Swain [SS]	Guideline Lead	(Present for notes 1 – 9)
Ben Mayer [BM]	Senior Research Fellow	(Present for notes 1 – 9)
David Wonderling [DW]	Head of Health Economics	(Present for notes 1 – 9)
Amy Crisp [AC]	Project Manager	(Present for notes 1 – 9)

Apologies:

Emma Clegg [EC]	Information specialist
Giulia Zuodar [GZ]	Project manager
Indi Banerjee [IB]	Co-opted topic expert

1. Welcome and objectives for the meeting

The Chair welcomed the Committee members and attendees to the first meeting on Head Injury (update). The Committee members and attendees introduced themselves.

The Chair outlined the objectives of the meeting, which included the GC1 induction presentations and the following protocol:

- Tranexamic acid

2. Confirmation of matter under discussion, and declarations of interest

The Chair confirmed that, for the purpose of managing conflicts of interest, the matter under discussion was tranexamic acid. The following declarations were received:

Name	Job title, organisation	Declarations of Interest, date declared	Type of interest	Decision taken
Dr Caroline Balson	Lay member	Parent/Carer Member of UK Acquired Brain Injury Forum (UKABIF)	Non-financial - direct	Non-specific No action other than the process of open declaration. No opinion expressed on the topics included in

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				the scope
Dr Caroline Balson	Lay member	Husband is Contracting Manager at Bradford District and Craven NHS CCG	Financial – indirect	Non-specific No action other than the process of open declaration.
Dr Caroline Balson	Lay member	Parent/Carer Member of Child Brain Injury Trust	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Ian Bernstein	Chair	GP partner at Gordon House Surgery (NHS) Employee of Connect Health Ltd 2 days per week, working as a GP with special interest in musculoskeletal medicine at NHS Herts Valley CCG. Connect Health hold a standard NHS contract to deliver community musculoskeletal services to NHS Herts Valley CCG. My work is fully NHS-pensioned.	Financial	Non-specific No action other than the process of open declaration. No scope to gain from the committee's work
Dr Ian Bernstein	Chair	Employee of Connect Health Ltd 2 days per week, working as a GP with special interest in musculoskeletal medicine at NHS Herts Valley CCG. Connect Health hold a standard NHS contract to deliver community musculoskeletal services to NHS Herts Valley CCG. My work is fully NHS-pensioned.	Non-financial professional and personal	Non-specific No action other than the process of open declaration
Dr Ian Bernstein	Chair	Director of Medical Education and Deputy Responsible Officer, Central London Community Healthcare NHS Trust	Non-financial professional and personal	Non-specific No action other than the process of open declaration
Dr Ian Bernstein	Chair	London North West Healthcare NHS Trust (Musculoskeletal Physician,	Non-financial professional and	Non-specific No action other than

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		self-employed	personal	the process of open declaration.
Dr Ian Bernstein	Chair	NHS Ealing CCG (Clinical Commissioning Lead, salaried)	Non-financial professional and personal	Non-specific No action other than the process of open declaration.
Dr Ian Bernstein	Chair	Appointed to the NICE Chronic Pain Guideline Committee. My practice will receive locum reimbursements, and I will receive travel and subsistence allowance in accordance with the NICE published policy.	Non-financial - professional and personal	Non-specific No action other than the process of open declaration. Agreed by Guideline lead.
Dr Ian Bernstein	Chair	Appointed as the clinical lead to the NW London STP Musculoskeletal Transformation Programme. This work is already remunerated as part of my NHS Ealing CCG commissioning role	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Ian Bernstein	Chair	Appointed as a clinical commissioning advisor to an NHS England steering group on workforce development for MSk conditions, within the Long Term Conditions Directorate. This work is unpaid although locum costs may be reimbursed	Non-financial - professional and personal	Non-specific No action other than the process of open declaration
Dr Ian Bernstein	Chair	Appointed chair of NICE Rehabilitation for chronic neurological conditions (including Traumatic Brain Injury) guideline committee. NICE reimbursement of travel costs, locum costs and nominal remuneration as per NICE reimbursement policy	Non-financial - professional and personal	Non-specific No action other than the process of open declaration

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Dr Emily Feilding	Committee member	Nil		
Mr Adel Helmy	Committee member	Pressura Neuro- clinical trial design/implementation and consultancy The study is a phase 2 study of a neurokinin-1 receptor antagonist (EU-C-001) in moderate and severe TBI. The primary outcome is on intracranial pressure, however, we have been involved in a sub-study in Cambridge looking at inflammatory biomarkers in micro dialysis and imaging correlates of oedema on MRI.	Non-financial – direct	Non-specific No action other than the process of open declaration.
Mr Adel Helmy	Committee member	Pressura Neuro- clinical trial consultancy	Financial direct	Non-specific No action other than the process of open declaration.
Mr Adel Helmy	Committee member	Expert Witness for legal proceedings: Neurosurgery	Non-financial - professional and personal	Non-specific No action other than the process of open declaration. Neurosurgery not included in the scope.
Mr Adel Helmy	Committee member	Consultant Neurosurgeon, Cambridge University Hospitals NHS Trust and University Lecturer Neurosurgery, University of Cambridge	Non-financial – professional and personal	Non-specific No action other than the process of open declaration.
Prof Fiona Lecky	Topic Adviser	Research Director of the Trauma Audit and Research Network (www.tarn.ac.uk) – national clinical audit for major injury including traumatic brain	Non-financial - direct	Specific No action but interest will be reviewed with partial exclusion if publications

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		injury. In this role I have authored publications cited in CG 176 and more recent on the impact of NICE Guidance		are included in the evidence review.
Prof Fiona Lecky	Topic Adviser	Investigator in Collaborative European Neurotrauma Effectiveness Research in Traumatic Brain Injury (CENTER TBI) funded by EU. Large 18 Country epidemiological study of patients with Traumatic Brain Injury, many recent publications including a systematic review of guideline adherence in TBI care	Non-financial - direct	Specific No action but interest will be reviewed with partial exclusion if publications are included in the evidence review.
Prof Fiona Lecky	Topic Adviser	Clinical Randomisation of Antifibrinolytic in Significant Head Injury (CRASH 3) Salford Principle Investigator, a high profile randomized trial of tranexamic acid in patients with TBI, funded by NIHR	Non-financial - direct	Specific Partial exclusion. Tranexamic acid included in the scope of the guideline. The committee member will remain in the room for presentation of the evidence and may be asked to respond to specific questions from the committee regarding this topic but will not take part in the

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				recommendations.
Prof Fiona Lecky	Topic Adviser	<p>Health Economic Evaluation of s100B and NSE in the CENTER-TBI cohort (HECON)</p> <p>Collaborator (time not remunerated- advisory role) study of cost effectiveness of blood borne brain injury biomarkers in early head injury management.</p> <p>Funded by Roche at University of Cambridge</p>	Non-financial - direct	<p>Specific Partial exclusion. . Biomarkers included in the scope of the guideline.</p> <p>The committee member will remain in the room for presentation of the evidence and may be asked to respond to specific questions from the committee regarding this topic but will not take part in drafting the recommendations.</p>
Prof Fiona Lecky	Topic Adviser	<p>Prosser, C. J., Edwards, D., Boumara, O., Fuller, G., Holliman, D., & Lecky, F. (2020). Bypassing the nearest emergency department for a more distant neurosurgical centre in traumatic brain injury patients. <i>British Journal of Neurosurgery</i>. doi:10.1080/02688697.2020.1858026</p> <p>Prosser, C., Edwards, D., Lecky, F., & Bouamra, O. (2019). 017 Bypassing the nearest emergency</p>	Non-financial - direct	<p>Specific Partial exclusion. Bypassing the nearest emergency unit included in the scope of the guideline.</p> <p>The committee member will remain in the room for presentation</p>

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		<p>department for a more distant neurosurgical centre in traumatic brain injury patients. In <i>Emergency Medicine Journal</i> Vol. 36 (pp. 783). doi:10.1136/emmermed-2019-rcem.17</p> <p>Lecky, F. E., Russell, W., McClelland, G., Pennington, E., Fuller, G., Goodacre, S., . . . Shewan, J. (2017). Bypassing nearest hospital for more distant neuroscience care in head-injured adults with suspected traumatic brain injury: findings of the head injury transportation straight to neurosurgery (HITS-NS) pilot cluster randomised trial.. <i>BMJ Open</i>, 7(10). doi:10.1136/bmjopen-2017-016355</p> <p>Fuller, G., McClelland, G., Lawrence, T., Russell, W., & Lecky, F. (2016). The diagnostic accuracy of the HITSNS prehospital triage rule for identifying patients with significant traumatic brain injury. <i>European Journal of Emergency Medicine</i>, 23(1), 61-64. doi:10.1097/mej.00000000000000327</p> <p>McClelland, G., Pennington, E., Byers, S., Russell, W., & Lecky, F. (2015). The challenges of conducting</p>		<p>of the evidence and may be asked to respond to specific questions from the committee regarding this topic but will not take part in drafting the recommendations.</p>
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		<p>prehospital research: successes and lessons learnt from the Head Injury Transportation Straight to Neurosurgery (HITS-NS) trial. <i>Emergency Medicine Journal</i>, 32(8), 663-664. doi:10.1136/emered-2014-203870</p> <p>Holliman, D., Russell, W., Fuller, G., Mendelow, A. D., Han, K., Mackway-Jones, K., . . . Lecky, F. (2013). The Head Injury Transportation Straight To Neurosurgery (HITS-NS) Trial: Introduction To The Study, Challenges Of The Set-Up Phase And Progress. In <i>JOURNAL OF NEUROSURGERY</i> Vol. 119 (pp. A552).</p> <p>Russell, W., Fuller, G., Mendelow, D., Bhattathiri, P., Han, K., Mackway-Jones, K., . . . Lecky, F. (2012). The Head Injury Transportation Straight to Neurosurgery (HITS-NS) Trial: An Introduction to the Study and the Challenges of the Set-Up Phase. In <i>BRAIN INJURY</i> Vol. 26 (pp. 534-535).</p> <p>Lecky, F., Russell, W., Fuller, G., McClelland, G., Pennington, E., Goodacre, S., . . . Strong, M. (n.d.). The Head Injury Transportation Straight to Neurosurgery (HITS-NS) randomised trial: a feasibility study. <i>Health Technology Assessment</i>, 20(1), 1-198. doi:10.3310/hta20010</p>		
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<p>Prof Fiona Lecky</p>	<p>Topic Adviser</p>	<p>Brenner, A., Belli, A., Chaudhri, R., Coats, T., Frimley, L., Jamaluddin, S. F., . . . Roberts, I. (2020). Understanding the neuroprotective effect of tranexamic acid : an exploratory analysis of the CRASH-3 randomised trial. <i>Critical Care</i>, 24(1). doi:10.1186/s13054-020-03243-4</p> <p>Mahmood, A., Needham, K., Shakur-Still, H., Harris, T., Jamaluddin, S. F., Davies, D., . . . Roberts, I. (n.d.). Effect of tranexamic acid on intracranial haemorrhage and infarction in patients with traumatic brain injury: a pre-planned substudy in a sample of CRASH-3 trial patients. <i>Emergency Medicine Journal</i>. doi:10.1136/emered-2020-210424</p> <p>Williams, J., Roberts, I., Shakur-Still, H., Lecky, F. E., Chaudhri, R., & Miners, A. (2020). Cost-effectiveness analysis of tranexamic acid for the treatment of traumatic brain injury, based on the results of the CRASH-3 randomised trial: a decision modelling approach. <i>BMJ Global Health</i>, 5(9), -. doi:10.1136/bmjgh-2020-002716</p> <p>Coats, T. J., & Lecky, F. E. (2020). The CRASH3 study: prehospital TXA for every injured patient?. <i>Emergency Medicine Journal</i>, 37(6), 392-394. doi:10.1136/emered-2019-209264</p> <p>Effects of tranexamic acid on</p>	<p>Non-financial - direct</p>	<p>Specific Partial exclusion. TXA included in the scope of the guideline. The committee member will remain in the room for presentation of the evidence and may be asked to respond to specific questions from the committee regarding this topic but will not take part in drafting the recommendations.</p>
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		<p>death, disability, vascular occlusive events and other morbidities in patients with acute traumatic brain injury (CRASH-3): a randomised, placebo-controlled trial (2019). <i>The Lancet</i>, 394(10210), 1713-1723. doi:10.1016/s0140-6736(19)32233-0</p> <p>Roberts, I., Perel, P., Prieto-Merino, D., Shakur, H., Coats, T., Hunt, B. J., . . . Collaborators, C. (2012). Effect of tranexamic acid on mortality in patients with traumatic bleeding: prespecified analysis of data from randomised controlled trial. <i>BRITISH MEDICAL JOURNAL</i>, 345. doi:10.1136/bmj.e5839</p> <p>Olldashi, F., Kerçi, M., Zhurda, T., Ruçi, K., Banushi, A., Traverso, M. S., . . . Cárdenas, B. (2011). The importance of early treatment with tranexamic acid in bleeding trauma patients: An exploratory analysis of the CRASH-2 randomised controlled trial. <i>The Lancet</i>, 377(9771). doi:10.1016/S0140-6736(11)60278-X</p> <p>Shakur, H., Roberts, I., Bautista, R., Caballero, J., Coats, T., Dewan, Y., . . . Crash 2 Trial Collaborators. (2010). Effects of tranexamic acid on death, vascular occlusive events, and blood</p>		
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		transfusion in trauma patients with significant haemorrhage (CRASH-2): a randomised, placebo-controlled trial. LANCET, 376(9734), 23-32. doi:10.1016/S0140-6736(10)60835-5		
Prof Fiona Lecky	Topic Adviser	<p>Marincowitz, C., Steyerberg, E., Gravestijn, B., Sheldon, T., & Lecky, F. (2020). 59 Performance of the mTBI decision rule for early discharge of patients with findings on CT: a center-TBI validation study. Emergency Medicine Journal, 37(12), 824-825. doi:10.1136/emj-2020-rcemabstracts.5</p> <p>Marincowitz, C., Steyerberg, E., Gravestijn, B., Sheldon, T., & Lecky, F. (2020). 59 Performance of the mTBI decision rule for early discharge of patients with findings on CT: a center-TBI validation study. Emergency Medicine Journal, 37(12), 824-825. doi:10.1136/emj-2020-rcemabstracts.5</p> <p>Marincowitz, C., Lecky, F., Allgar, V., Hutchinson, P., Elbeltagi, H., Johnson, F., . . . Koliass, A. (2019). 049 Development of a clinical decision rule for the early safe discharge of patients with mild traumatic brain injury and findings on CT brain scan: a retrospective cohort study. In Emergency Medicine Journal Vol. 36 (pp. 808).</p>	Non-financial - direct	<p>Specific</p> <p>Partial exclusion. Indications for selecting adults, young people, children and babies with head injury for CT or MRI head scan included in the scope of the guideline.</p> <p>The committee member will remain in the room for presentation of the evidence and may be asked to respond to specific questions from the committee regarding this topic but will not take part in drafting the recommendations.</p>

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		<p>doi:10.1136/emered-2019-rcem.49</p> <p>Marincowitz, C., Lecky, F., Allgar, V., Hutchinson, P. J., Elbeltagi, H., Johnson, F., . . . Sheldon, T. (2019). Development of a clinical decision rule for the early safe discharge of patients with mild traumatic brain injury and findings on CT brain scan : a retrospective cohort study. <i>Journal of Neurotrauma</i>. doi:10.1089/neu.2019.6652</p> <p>Marincowitz, C., Lecky, F. E., Townend, W., Allgar, V., Fabbri, A., & Sheldon, T. A. (2018). A protocol for the development of a prediction model in mild traumatic brain injury with CT scan abnormality: which patients are safe for discharge?. <i>Diagnostic and Prognostic Research</i>, 2. doi:10.1186/s41512-018-0027-4</p> <p>Fuller, G., McClelland, G., Lawrence, T., Russell, W., & Lecky, F. (2016). The diagnostic accuracy of the HITSNS prehospital triage rule for identifying patients with significant traumatic brain injury. <i>European Journal of Emergency Medicine</i>, 23(1), 61-64. doi:10.1097/mej.00000000000000327</p> <p>Harrison, D. A., Griggs, K. A.,</p>		
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		<p>Prabhu, G., Gomes, M., Lecky, F. E., Hutchinson, P. J. A., . . . Rowan, K. M. (2015). External Validation and Recalibration of Risk Prediction Models for Acute Traumatic Brain Injury among Critically Ill Adult Patients in the United Kingdom. <i>Journal of Neurotrauma</i>, 32(19), 1522-1537. doi:10.1089/neu.2014.3628</p> <p>Fuller, G. W., Woodford, M., Lawrence, T., Coats, T., & Lecky, F. (2013). THE ACCURACY OF ALTERNATIVE TRIAGE RULES FOR IDENTIFICATION OF SIGNIFICANT TRAUMATIC BRAIN INJURY: A DIAGNOSTIC COHORT STUDY. <i>Emergency Medicine Journal</i>, 30(10), 876.1-876. doi:10.1136/emered-2013-203113.24</p> <p>Dunning, J., Daly, J. P., Lomas, J. P., Lecky, F., Batchelor, J., & Mackway-Jones, K. (2006). Derivation of the children's head injury algorithm for the prediction of important clinical events decision rule for head injury in children. <i>Archives of Disease in Childhood</i>, 91(11), 885-891. doi:10.1136/adc.2005.083980</p>		
Prof Fiona	Topic Advisor	Czeiter, E., Amrein, K., Gravesteijn, B. Y., Lecky, F.,	Non-financial -	Specific

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Lecky		<p>Menon, D. K., Mondello, S., . . . Buki, A. (2020). Blood biomarkers on admission in acute traumatic brain injury: Relations to severity, CT findings and care path in the CENTER-TBI study. <i>EBioMedicine</i>, 56. doi:10.1016/j.ebiom.2020.102785</p> <p>Lesko, M. M., O'Brien, S. J., Childs, C., Bouamra, O., Rainey, T., & Lecky, F. (2014). Comparison of several prognostic tools in traumatic brain injury including S100B. <i>Brain Injury</i>, 28(7), 987-994. doi:10.3109/02699052.2014.890743</p> <p>Lesko, M. M., Rainey, T., Childs, C., Bouamra, O., O'Brien, S., & Lecky, F. (2010). Comparing the prognostic performance of S100B with prognostic models in traumatic brain injury. <i>Injury Extra</i>, 41(12), 156-157. doi:10.1016/j.injury.2010.07.472</p> <p>Rainey, T., Lesko, M., Sacho, R., Lecky, F., & Childs, C. (2009). Predicting outcome after severe traumatic brain injury using the serum S100B biomarker: Results using a single (24 h) time-point. <i>Resuscitation</i>, 80(3), 341-345. doi:10.1016/j.resuscitation.2008.11.021</p> <p>Fuller, G., Bouamra, O.,</p>	direct	<p>Partial exclusion. The diagnostic accuracy of brain injury biomarkers and/or MRI for predicting post-concussion syndrome and other post-brain injury complications is included in the scope of the guideline.</p> <p>The committee member will remain in the room for presentation of the evidence and may be asked to respond to specific questions from the committee regarding this topic but will not take part in drafting the recommendations.</p>
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		Woodford, M., Jenks, T., Patel, H., Coats, T. J., . . . Lecky, F. (2011). The effect of specialist neurosciences care on outcome in adult severe head injury: A cohort study. <i>Journal of Neurosurgical Anesthesiology</i> , 23(3), 198-205. doi:10.1097/ANA.0b013e3182161816		
Dr Mark Lyttle	Committee member	Chair, Paediatric Emergency Medicine Intercollegiate Specialty Advisory Committee, RCPCH	Non-financial – professional and personal	Non-specific No action other than the process of open declaration.
Dr Mark Lyttle	Committee member	Chief Investigator; Evaluating ICON This research study aims to evaluate the effectiveness of the ICON programme in reducing abusive head trauma in infants. This is funded (currently subject to contracts) by the NIHR.	Non-financial – professional and personal	Non-specific No action other than the process of open declaration. Reduction of abusive head trauma not included in the scope of the guideline
Dr Virginia Newcombe	Committee member	Associate Investigator Future Fund (MRFF) – Australia. Diagnosis using Imaging and Clinical biomarkers Trial in Traumatic Brain Injury (PREDICT-TBI).	Non-financial – direct	Specific. Partial exclusion. Biomarkers included in the scope of the guideline. The committee member will remain in the room for presentation of the

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				evidence and may be asked to respond to specific questions from the committee regarding this topic but will not take part in drafting the recommendations.
Dr Virginia Newcombe	Committee member	Grant funding from Roche to investigate the health economic impact of using blood biomarkers (NSE and s100b) for mild TBI based on the CENTER-TBI dataset. The contract states the scientific results are independent and Roche will have no influence over publication.	Financial -direct	Specific Exclusion.
Dr Virginia Newcombe	Committee member	Involved with traumatic brain injury research including Collaborative European NeuroTrauma Effectiveness Research in Traumatic Brain Injury (CENTER-TBI, www.center-tbi.org).	Non-financial – professional and personal	Non-specific No action but interest will be reviewed with partial exclusion if publications are included in the evidence review.
Dr Virginia Newcombe	Committee member	Publications on imaging and biomarkers Koivikko P, Posti P, Mohammadian M, Lagerstedt L, Azurmendi, L, Hossain I, Katila, A, Menon, DK, Newcombe V, Hutchinson PJ,	Non-financial – professional and personal	Partial exclusion. Biomarkers include in the scope of the guideline. The committee

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		<p>Maanpää H, Tallus J, Zetterberg H, Blennow K, Tenovuo O, Sanchez J, Takala R, The Potential of Heart Fatty-Acid Binding Protein, NFL, Interleukin-10 and Calcium-Binding Protein B in the Acute Diagnostics and Severity Assessment of TBI. Emergency Medicine Journal. In Press.</p> <p>Posti JP, Takala RSK, Raj R, Luoto TM, Azurmendi L, Lagerstedt L, Mohammadian M, Hossain I, Gill J, Frantzén J, van Gils M, Hutchinson PJ, Katila AJ, Koivikko P, Maanpää HR, Menon DK, Newcombe VF, Tallus J, Blennow K, Tenovuo O, Zetterberg H, Sanchez JC. Admission Levels of Interleukin 10 and Amyloid β 1-40 Improve the Outcome Prediction Performance of the Helsinki Computed Tomography Score in Traumatic Brain Injury. Front Neurol. 2020;11:549527</p> <p>Lagerstedt L, Azurmendi L, Tenovuo O, Katila AJ, Takala RSK, Blennow K, Newcombe VFJ, Maanpää HR, Tallus J, Hossain I, van Gils M, Menon DK, Hutchinson PJ, Zetterberg H, Posti JP, Sanchez JC. Interleukin 10 and Heart Fatty Acid- Binding Protein as Early Outcome Predictors in Patients With Traumatic Brain Injury. Front Neurol. 2020;11:376.</p>		<p>member will remain in the room for presentation of the evidence and may be asked to respond to specific questions from the committee regarding this topic but will not take part in drafting the recommendations.</p>
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		<p>Hossain I, Mohammadian M, Takala RSK, Tenovuo O, Azurmendi Gil L, Frantzén J, van Gils M, Hutchinson PJ, Katila AJ, Maanpää HR, Menon DK, Newcombe VF, Tallus J, Hrusovsky K, Wilson DH, Gill J, Blennow K, Sanchez JC, Zetterberg H, Posti JP. Admission Levels of Total Tau and β-Amyloid CV – Virginia Newcombe Isoforms 1-40 and</p> <p>Czeiter E, Amrein K, Gravesteijn BY, Lecky F, Menon DK, Mondello S, Newcombe VFJ, Richter S, Steyerberg EW, Vyvere TV, Verheyden J, Xu H, Yang Z, Maas AIR, Wang KKW, Büki A; CENTER-TBI Participants and Investigators. Blood biomarkers on admission in acute traumatic brain injury: Relations to severity, CT findings and care path in the CENTER-TBI study. EBioMedicine. 2020;56:102785. doi: 10.1016/j.ebiom.2020.102785 . Epub 2020</p> <p>JP Posti, RS Takala, L Lagerstedt, AM Dickens, I Hossain, M Mohammadian, HM Ala-Seppälä, J Frantzén, M Van Gils, PJ Hutchinson, AJ Katila, HR Maanpää, D Menon, V Newcombe, J Tallus, K Hrusovsky, D</p>		
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		<p>Wilson, J Gill, JC Sanchez, O Tenovuo, H Zetterberg, K Blennow. Correlation of blood biomarkers and biomarker panels with traumatic findings on computed tomography after traumatic brain injury. Journal of Neurotrauma. 2019;36(14):2178-2189.</p> <p>I Hossain, M Mohammadian, RSK Takala, O Tenovuo, L Lagerstedt, H Ala-Seppälä, J Frantzén, M van Gils, P Hutchinson, AJ Katila, HR Maanpää, DK Menon, VF Newcombe, J Tallus, K Hrusovsky, DH Wilson, K Blennow, JC Sanchez, H Zetterberg, JP Posti. Early Levels of Glial Fibrillary Acidic Protein and Neurofilament Light Protein in Predicting the Outcome of Mild Traumatic Brain Injury. Journal of Neurotrauma. 2019;36(10):1551-1560.</p> <p>AM Dickens, JP Posti, RSK Takala, H Ala-Seppälä, I Mattila, JP Coles, J Frantzén, PJ Hutchinson, AJ Katila, A Kyllönen, H Maanpää, V Newcombe, J Outtrim, J Tallus, KLH Carpenter, DK Menon, T Hyötyläinen, O Tenovuo, M Orešič. Serum metabolites associate with CT findings following TBI. Journal of Neurotrauma. 2018 Nov 15;35(22):2673-2683.</p>		
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		<p>JP Posti, I Hossain, RS Takala, H Liedes, V Newcombe, J Outtrim, AJ Katila, J Frantzén, H Ala-Seppälä, JP Coles, A Kyllönen, HR Maanpää, J Tallus, PJ Hutchinson, M van Gils, DK Menon, O Tenovuo. Glial Fibrillary Acidic Protein and Ubiquitin C-Terminal Hydrolase-L1 Are Not Specific Biomarkers for Mild CT-Negative Traumatic Brain Injury. Journal of Neurotrauma. 2017;34(7):1427-1438.</p> <p>JP Posti, SK Riikka, MD Takala, H Runtti, V Newcombe, J Outtrim, AJ Katila, J Frantzén, H Ala-Seppälä, JP Coles, MD, M Iftakher Hossain, A Kyllönen, HR Maanpää, J Tallus, PJ Hutchinson, M van Gils, DK Menon, O Tenovuo, The levels of GFAP and UCH-L1 during the first week after a traumatic brain Injury. Neurosurgery. 2016. 79(3):456-64.</p> <p>RS Takala, JP Posti, H Runtti, VF Newcombe, J Outtrim, AJ Katila, J Frantzén, H Ala-Seppälä, A Kyllönen, HR Maanpää, MI Hossain, JP Coles, P Hutchinson, M van Gils, DK Menon, O Tenovuo. GFAP and UCH-L1 as outcome predictors in traumatic brain injury. World Neurosurgery. 2016 87:8-20.</p>		
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Dr Curtis Offiah	Committee member	Private practice, one session a week, predominantly non-head trauma patients	Financial	Non-specific No action other than the process of open declaration. Not seeing acute head injury patients
Dr Curtis Offiah	Committee member	Private practice, one session a week, predominantly non-head trauma patients	Financial	Non-specific No action other than the process of open declaration. Does not review imaging for acute head injury patients
Dr Curtis Offiah	Committee member	Medicolegal and forensic consultation relating to neuroradiology including neurotrauma and occasionally non-accidental injury in infants	Financial	Non-specific No action other than the process of open declaration. Agreed by. Interpretation of imaging not included in the scope of the guideline
Dr Curtis Offiah	Committee member	Independent forensic radiology advisory role to national crime agency, Police and HM Coroners	Non-financial, professional and personal	Non-specific No action other than the process of open declaration. Interpretation of imaging not included in the scope

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				of the guideline
Dr Curtis Offiah	Committee member	Senior lecturer and Msc student research dissertation supervisor to forensic medical sciences Masters programme – Queen Mary University London	Non-financial, professional and personal	Non-specific Interpretation of imaging not included in the scope of the guideline.
Dr Curtis Offiah	Committee member	Advisory Editor – Clinical Radiology Journal of Royal College of Radiologists	Non-financial, professional and personal	Non-specific No action other than the process of open declaration.
Dr Curtis Offiah	Committee member	Research projects relating to Neuroradiology including neurotrauma management through NHS practice	Non-financial, professional and personal	Specific No action but interest will be reviewed with partial exclusion if publications are included in the evidence review.
Dr Curtis Offiah	Committee member	Lectures local and national on forensic radiology and post-mortem CT imaging	Non-financial, professional and personal	Non-specific No action other than the process of open declaration.
Dr Patrick O'Halloran	Committee member	In receipt of grant funding from The Drake Foundation, the Rugby Football Union and the England and Wales Cricket Board to fund research into the use of salivary small non-coding RNAs in the diagnosis of sport concussion in soccer, rugby union and cricket	Financial-direct	Non-specific No action other than the process of open declaration. Topic not include in the scope of the guideline

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Dr Patrick O'Halloran	Committee member	<p>Marker Health https://markerhealth.com/</p> <p>I am employed on a consultancy basis as a research scientist by Marker Health, a company which is investigating the use of salivary small non-coding RNAs in the diagnosis and management of head injury in various settings. The company was initially formed by my PhD supervisor (Professor Tony Belli) as a University of Birmingham spinout to commercialize the research of his department which my PhD studies were a part. I receive a monthly salary for this work and an enrolled in the company's Virtual Stock Option Plan.</p>	Financial-direct	<p>Non-specific</p> <p>No action other than the process of open declaration. Topic not included in the scope of the guideline</p>
Dr Patrick O'Halloran	Committee member	<p>Sports Medicine Work</p> <p>I work on a private sessional basis for Worcester Warriors rugby club and have worked for Wasps RFC and the RFU England Women's Rugby age grade programmes in the last few years.</p>	Financial	<p>Non-specific</p> <p>No action other than the process of open declaration.</p>
Dr Patrick O'Halloran	Committee member	<p>Unique diagnostic signatures of concussion in the saliva of male athletes: The Study of Concussion in Rugby Union through MicroRNAs (SCRUM)" accepted for publication in the British Journal of Sports Medicine, Valentina Di Pietro, Patrick O'Halloran et al ePub</p>	Non-financial – professional and personal-direct	<p>Specific</p> <p>No action but interest will be reviewed with partial exclusion if publications are included in the evidence review.</p>
Dr Patrick O'Halloran	Committee member	<p>Study of Concussion in Rugby Union through microRNAs (SCRUM Study). As part of my PhD and Clinical</p>	Non-financial – professional and personal	<p>Non-specific</p> <p>No action other than the process</p>

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		<p>Research Fellow role at the University of Birmingham, I had a project management role in this study which aimed to evaluate the use of salivary small non-coding RNAs in the diagnosis of sport concussion in professional rugby union, in conjunction with the English Rugby Football Union and Premiership Rugby. This project also encompassed branches of similar investigation in soccer, cricket, boxing and Skeleton. I am currently working on revisions of the manuscript for the rugby union portion of this study, under consideration at the British Journal of Sports Medicine. Similarly, I have been involved in previous publications related to the protocol and preliminary findings of this study</p>		<p>of open declaration.</p>
Mr James Piercy	Committee member	<p>Occasionally paid to deliver presentations on personal experience of head injury to public audiences</p>	Financial	<p>Non-specific No action other than the process of open declaration. Content will not cover any of the on a topics in the scope of the guideline.</p>
Mr James Piercy	Committee member	<p>Trustee United Kingdom Acquired Brain Injury Forum</p>	Non-financial – professional and personal	<p>Non-specific No action other than the process of open declaration.</p>
Mr James Piercy	Committee member	<p>Treasurer Norfolk and Waveney Acquired Brain Injury Network</p>	Non-financial – professional and	<p>Non-specific No action other than</p>

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			personal	the process of open declaration.
Mr James Piercy	Committee member	Contributing author : Traumatic brain injury: integrated approaches to improve prevention, clinical care, and research The Lancet Neurology 16(12)	Non-financial – professional and personal	Non-specific No action other than the process of open declaration. No clear opinion stated on the topics in scope.
Mr James Piercy	Committee member	Lay member RESCUE ASDH clinical trial	Non-financial – professional and personal	Non-specific No action other than the process of open declaration. Neurosurgery not included in the scope of the guideline.
Mr James Piercy	Committee member	Outreach lead NIHR brain injury medtech cooperative. I am paid by the University of Cambridge to encourage and promote patient participation in research	Financial	Non-specific No action other than the process of open declaration.
Ms Gillian Richards	Committee member	Private Practice Counselling (part-time) with clients who present with a wide range of issues. From time to time, this can include clients with experience of head injury as part of their presenting issues. Some of my clients are referred by GPs.	Financial	Non-specific No action other than the process of open declaration.
Ms Gillian Richards	Committee member	Volunteer co-facilitator of monthly support groups for Headway East Sussex and participant in Headway	Non-financial - professional and	Non-specific No action other than the process

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		publicity and fund-raising events.	personal	of open declaration.
Ms Gillian Richards	Committee member	As part of my part-time private counselling practice, becoming one of the preferred counselling service providers for Headway East Sussex. I envisage counselling 1 to 3 clients weekly	Financial	Non-specific No action other than the process of open declaration. Counselling not included in the scope.
Ms Gillian Richards	Committee member	Member of UKABIF	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Ms Gillian Richards	Committee member	Talk on Managing Fatigue after Brain Injury for Headway East Sussex Well-being group (no fee) 11th March 2021.	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Matthew Wiles	Committee member	Member of the Editorial board of the journal Anaesthesia	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Matthew Wiles	Committee member	Honorarium from GE Healthcare for speaking at educational event organised by Topmedtalk on anaesthesia (https://www.topmedtalk.com/topmedtalk-gezz-van-zwanenberg-matt-wiles-and-marcus-peck-2/).	Financial - Direct	Non-specific No action other than the process of open declaration. Anaesthesia not included in the scope.
Dr Matthew Wiles	Committee member	Private practice in anaesthesia for independent sector hospitals (BMI Thornbury/Claremont) in	Financial	Non-specific No action other than the process

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		Sheffield		of open declaration. Anaesthesia not included in the scope.
Mr Colin Williamson	Committee member	Chair of Northern Ireland Trauma Network Nursing and Allied Health Professional Subgroup. (Northern Ireland Public Health Agency Funded)	Non-financial - professional and personal	Non-specific No action other than the process of open declaration
Mr Colin Williamson	Committee member	Northern Ireland Trauma Network Clinical Advisory Group Member. (Public Health Agency Funded)	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Prof Indi Banerjee	Co-opted member	Investigator meeting, Hanmi Pharmaceuticals, potential clinical trial of a long acting form of glucagon for the treatment of hypoglycaemia for patients with Congenital Hyperinsulinism.	Financial	Non-specific No action other than the process of open declaration. No products under consideration in the guideline
Prof Indi Banerjee	Co-opted member	Trustee, NORCHI Charitable Trust	Financial	Non-specific No action other than the process of open declaration.
Prof Indi Banerjee	Co-opted member	Private practice, Spire Manchester (usually one patient per 1-2 weeks (i.e. 0.5-1 patient per week), conditions – short stature, delayed and advanced puberty)	Financial	Non-specific No action other than the process of open declaration.
Prof Indi Banerjee	Co-opted member	Principal investigator in a Web based Adherence Information	Financial	Non-specific

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		and Nurse-led Monitoring study, sponsored by NHS Trust but funded by Merck Serono		No action other than the process of open declaration. Project topic not included in the scope.
Prof Indi Banerjee	Co-opted member	Audit and Peer Review Officer, British Society for Paediatric Endocrinology and Diabetes [responsible for growth hormone audit, responsible for national audits in paediatric audits]	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Prof Indi Banerjee	Co-opted member	Medical Adviser, Pituitary Foundation [advise on use of growth hormone and other pituitary hormone Replacements]	Non-financial - professional and personal	Non-specific No action other than the process of open declaration. The management of hypopituitarism is outside of the scope of the guideline.
Prof Indi Banerjee	Co-opted member	Medical Adviser, Living with Congenital Adrenal Hyperplasia	Non-financial - professional and personal	Non-specific No action other than the process of open declaration. Topic not included in the scope of the guideline.
Prof Indi Banerjee	Co-opted member	Associate Editor, Frontiers in Endocrinology; may edit papers related to topic under discussion	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.

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				Topic not included in the scope of the guideline
Prof Indi Banerjee	Co-opted member	Associate Editor, Frontiers in Endocrinology; may edit papers related to topic under discussion	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Prof Indi Banerjee	Co-opted member	Editorial Board, Clinical Endocrinology: may edit papers related to topic under discussion	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Prof Indi Banerjee	Co-opted member	Chair, Clinical Studies Group, British Society for Paediatric Endocrinology and Diabetes – discuss research in several aspects of paediatric endocrinology	Non-financial - professional and personal	Non-specific No action other than the process of open declaration
Prof Indi Banerjee	Co-opted member	Chair, Communications Committee, European Society for Paediatric Endocrinology; may discuss education/training/information relating to topic under consideration	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Prof Indi Banerjee	Co-opted member	Appointments Advisory Committee, Royal College of Paediatrics and Child Health; clinical experience of managing endocrine sequelae of children with head injury could be discussed in consultant interviews	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Prof Indi Banerjee	Co-opted member	Associate Medical Director for Research and Innovation at Royal Manchester Children's Hospital; may discuss research relating to topic under	Non-financial - professional and personal	Specific No action other than the process of open

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		discussion		declaration.
Dr Ganesh Bavikatte	Co-opted member	I am NHS Neurorehabilitation consultant with some Private Medical and Medicolegal work (related to Rehabilitation Medicine)	Financial	Non-specific No action other than the process of open declaration. Rehabilitation outside of the scope of the guideline.
Dr Ganesh Bavikatte	Co-opted member	Share holder of Impression Health care (Nursing home registered facility)	Financial	Non-specific No action other than the process of open declaration.
Mr Nicholas Brown	Co-opted member	Health Care Professions Council-Partner member	Financial	Non-specific No action other than the process of open declaration.
Dr Tara Kearney	Co-opted member	Undertakes private practice at the Alexandra Hospital weekly (1 session a week, approximately 10-20 patients with a head injury in the last ten years)	Financial – Direct	Non-specific No action other than the process of open declaration. Due to low volume of guideline related private practice no exclusion is required.
Dr Tara Kearney	Co-opted member	I am a member of the Council for Endocrinology	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.

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Dr Tara Kearney	Co-opted member	I am Chair for the North West Endocrine Society	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Tara Kearney	Co-opted member	I have supported research in head injury induced hypopituitarism, via my MD student at the time	Non-financial - professional and personal	Specific No action as no publications.
Dr Tara Kearney	Co-opted member	I review academic literature for journal publications	Non-financial - professional and personal	Non-specific No action other than the process of open declaration
Dr Tara Kearney	Co-opted member	I chair the pan-Manchester Pituitary MDT	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Hari Krishnan	Co-opted member	Publication describing significant variability in PICU management of severe traumatic brain injury in children. [https://pubmed.ncbi.nlm.nih.gov/33009356/] Also interested in promoting consistency within different UK PICUs by standardization of guidelines	Non-financial - professional and personal	Non-specific No action other than the process of open declaration. Topic not included in the scope of the guideline
Dr Hari Krishnan	Co-opted member	Deputy Chair of Clinical Advisory Group, PICANet	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Hari Krishnan	Co-opted member	Member, Editorial board of PCCM Journal as Social Media ambassador	Non-financial - professional and	Non-specific No action other than

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			personal	the process of open declaration.
Dr Ibrahim Jalloh	Co-opted member	Directorship of IBJ Consulting Limited which provides medicolegal expert reports including reports for the family courts investigating brain injuries in children.	Financial – Direct	Non-specific No action other than the process of open declaration as there is no scope to gain from the committee's work.
Dr Clara O'Brien	Co-opted member	Clinician undertaking private practice (2/3 private patients with chronic problems following a head injury): Director of 'Dr Clara O'Brien Neuropsychology' where I am the sole practitioner undertaking private clinical work.	Financial – Direct	Non-specific No action other than the process of open declaration. Neuropsychological intervention is not included in the scope.
Dr Clara O'Brien	Co-opted member	Main employment for University Hospitals Sussex NHS Trust	Non-financial professional and personal	Non-specific No action other than the process of open declaration
Dr Barry Seemungal	Co-opted member	Director of Zaboca Ltd (private practice) 8 new cases in the last year, 2 were chronic head injury related, the others were non-TBI vestibular cases. He has managed 2 acute neurological cases privately since he became a consultant in 2008, and one of those was a head injury.	Financial	Specific No action other than the process of open declaration. Due to low volume of guideline related private practice no exclusion is

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				required.
Dr Barry Seemungal	Co-opted member	Editor-in-Chief, Journal of Concussion, Sage.	Non-financial professional and personal	Non-specific No action other than the process of open declaration.
Dr Barry Seemungal	Co-opted member	Intellectual property medical device/system with Imperial College London, to treat vertigo in the community in general (overlaps with but is not specific to head injury).	Financial – Direct	Non-specific No action other than the process of open declaration. Treatment of vertigo not included in the scope.
Dr Barry Seemungal	Co-opted member	Recently completed MRC grant in acute traumatic brain injury (TBI) assessing vestibular dysfunction	Non-financial - professional and personal	Non-specific No action other than the process of open declaration. Topic is outside of the scope
Dr Barry Seemungal	Co-opted member	Supervisor to NIHR doctoral fellow assessing dizziness treatment in acute TBI	Non-financial - professional and personal	Non-specific No action other than the process of open declaration. Topic is outside of the scope
Dr Barry Seemungal	Co-opted member	Grant from the US Department for Defense investigating the factors that lead to chronic dizziness in mild TBI	Financial	Non-specific No action other than the process of open declaration. Topic is outside of the

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				scope
Dr Peta Sharples	Co-opted member	Chair of BPNA UK Neurorehabilitation Network	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Peta Sharples	Co-opted member	Member of NHS England Paediatric Clinical Reference Group Neurorehabilitation Working Group	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Suzanna Watson	Co-opted member	Private Practice I currently work one day a week (for myself) in private practice to provide paediatric neuropsychological rehabilitation for children and young people with acquired brain injuries.	Financial – Direct	Non-specific No action other than the process of open declaration. Rehabilitation not included in the scope.

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Dr Suzanna Watson	Co-opted member	In collaboration with my colleague, Dr Emily Bennett (Consultant Clinical Psychologist) from the Brain Injury Living Life team at Nottingham University Hospital, I help to lead the UK Paediatric Neurorehabilitation Specialist Interest Group. This is now a group of 133 paediatric neuropsychologists, clinical psychologists and educational psychologists who work with children and young people with acquired brain injuries. The group's aims are to share expertise and resources and to collaborate with research in order to develop paediatric neuropsychological rehabilitation for children, young people and families in the UK.	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.
Dr Suzanna Watson	Co-opted member	With colleagues at the Cambridge Centre for Paediatric Neuropsychological Rehabilitation, I have published a paper analyzing children's goals in rehabilitation after acquired brain injury: McCarron, R. H., Watson, S., Gracey, F. (2019). What do kids with Acquired Brain Injury want? Mapping neuropsychological rehabilitation goal types to the International Classification of Functioning, Disability and Health. Journal of the International Neuropsychological Society, 25(4), 403-412.	Non-financial - professional and personal	Non-specific No action other than process of open declaration. Topic not included in the scope of the guideline.
Dr Suzanna Watson	Co-opted member	Ordinary Committee Member of the Faculty of Paediatric Neuropsychology of the British Psychological Society. Honorary Lecturer at the	Non-financial - professional and personal	Non-specific No action other than the process of open

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		University of East Anglia		declaration.
Dr Suzanna Watson	Co-opted member	Honorary Lecturer at the University of East Anglia	Non-financial - professional and personal	Non-specific No action other than the process of open declaration.

The Chair and a senior member of the Developer's team noted that the interests declared did not prevent the attendees from fully participating in the meeting.

3. Introduction to guideline development

RF, EC, SS and IB gave the following presentations:

- Role of the NICE GCM and working with NICE
- Public Involvement Programme
- NGC overview
- Chair's presentation

4. Declarations of interest

SS gave a presentation on the NICE policy for declaring and dealing with conflicts of interest.

The committee declared any new interests that arose since recruitment.

5. NGC technical team presentations

LP, BM, DW gave the following presentations:

- Role of the Information Specialist
- Role of the Research Fellow
- Health economic introduction

6. Introduction to the scope and review questions

FL presented the scope and review questions to the committee.

7. Prioritising topics for modelling

DW gave a presentation on prioritising topics for modelling.

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8. Draft protocols
BM presented the draft protocol: <ul style="list-style-type: none">• Tranexamic acid. The GC discussed and agreed the protocol.
9. Any other business
None.

Date of next meeting: 28 April 2021

Location of next meeting: Virtual meeting