



The “never events” list 2012/13

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Description	The "Never Events" list has been updated with amendments to two of the never event definitions. The changes are to never events 18, ABO-incompatible organ transplantation and 23, misidentification of patients. This paper sets out the list for use in the NHS in 2012/13.'	
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For Recipient's Use		

The “never events” list 2012/13

Prepared by the Patient Safety Policy Team

The “never events” list

This is the list of “never events” for use in the NHS in 2012/13. These incidents are considered unacceptable and eminently preventable. Minor amendments have been made to the definitions of two of the events that were added for last year’s expanded “never events” list.

“Never event” number 18 regarding transplantation of ABO incompatible organs as a result of error has been amended to remove reference to HLA (Human Leukocyte Antigen) incompatibility following feedback about the preventability of this type of incident.

“Never event” number 23 regarding the misidentification of patients following a failure to correctly use standard wristband identification processes has been clarified to acknowledge that where specific services, primarily some mental health inpatient units, deliberately choose to not use wristbands for safety reasons, this type of “never event” does not apply.

SURGICAL

1. Wrong site surgery

A surgical intervention performed on the wrong site (for example wrong knee, wrong eye, wrong patient, wrong limb, or wrong organ); the incident is detected at any time after the start of the operation and the patient requires further surgery, on the correct site, and/or may have complications following the wrong surgery.

- Includes biopsy, radiological procedures and drain insertion, where the intervention is considered surgical.
- Excludes wrong site anaesthetic block.
- Excludes interventions where the wrong site is selected because of unknown/unexpected abnormalities in the patient’s anatomy. This should be documented in the patient’s notes.

Setting: All healthcare premises.

Guidance:

- *Safer Practice Notice – Standardising Wristbands improves patient safety, 2007*, available at

<http://www.nrls.npsa.nhs.uk/resources/?entryid45=59824>

- *Patient Safety Alert – WHO Surgical Safety Checklist, 2009*, available at <http://www.nrls.npsa.nhs.uk/resources/clinical-specialty/surgery/>

2. Wrong implant/prosthesis

Surgical placement of the wrong implant or prosthesis where the implant/prosthesis placed in the patient is other than that specified in the operating plan either prior to or during the procedure. The incident is detected at any time after the implant/prosthesis is placed in the patient and the patient requires further surgery to replace the incorrect implant/prosthesis and/or suffers complications following the surgery.

- Excludes where the implant/prosthesis placed in the patient is intentionally different from the operating plan, where this is based on clinical judgement at the time of the operation.
- Excludes where the implant/prosthesis placed in the patient is intentionally planned and placed but later found to be suboptimal.

Setting: All healthcare premises.

Guidance:

- *Safer Practice Notice – Standardising Wristbands improves patient safety, 2007*, available at <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59824>

- *Patient Safety Alert – WHO Surgical Safety Checklist, 2009*, available at <http://www.nrls.npsa.nhs.uk/resources/clinical-specialty/surgery/>

- *Safer Surgery Checklist for Cataract Surgery, 2009*, available at http://www.rcophth.ac.uk/about/docs/profstands/2010_PROF_0062_Cataract_Surgery_Checklist.pdf

3. Retained foreign object post-operation

Unintended retention of a foreign object in a patient after surgical intervention, including interventional radiology, cardiology and vaginal birth.

- Includes swabs, needles, implants, fragments of screws, instruments and guidewires.
- Excludes where any relevant objects are found to be missing prior to the completion of the surgical intervention and may be within the patient, but where further action to locate and/or retrieve would be more damaging than retention, or impossible. This must be documented in the patient’s notes and the patient informed.

Settings: All healthcare premises.

Guidance:

- *Standards and recommendations for safe perioperative practice*, 2007, available at <http://www.afpp.org.uk/news/safe-practice-highlighted-in-new-afpp-publication>
- *Swab, instrument and needle counts: Managing the risk*, 2005, available at <http://www.afpp.org.uk/filegrab/swabcountposter.pdf?ref=57>
- *Patient Safety Alert – WHO Surgical Safety Checklist*, 2009, available at <http://www.nrls.npsa.nhs.uk/resources/clinical-specialty/surgery/>

MEDICATION EVENTS

4. Wrongly prepared high-risk injectable medication

Death or severe harm as a result of a wrongly prepared high-risk injectable medication.

- High-risk injectable medicines are identified using the NPSA’s risk assessment tool¹. A list of high-risk medicines has been prepared by the NHS Aseptic Pharmacy Services Group using this tool². Organisations should have their own list of high-risk medications for the purposes of the “never event” policy, which may vary from the NHS Aseptic Pharmacy Services Group list, depending on local circumstances.
- A high risk injectable medicine is considered wrongly prepared if it was not;
 - prepared in accordance with the manufacturer’s Specification of Product Characteristics;

¹ NPSA High Risk Medication Risk Assessment Tool, 2007, available at <http://www.nrls.npsa.nhs.uk/EasySiteWeb/getresource.axd?AssetID=60097&type=full&servicetype=Attachment>

² Pharmaceutical Aseptic Services Group. Example risk assessment of injectable medicines. 2007. Available at <http://www.civas.co.uk/>

- prepared in accordance with a protocol formally agreed by the local organisation (for example for off-label or unlicensed product use);
- prepared in accordance with patient specific directions of a prescriber in an urgent or emergency situation and supported by evidence or expert advice.
- This event excludes any incidents that are covered by other “never events”.
- Where death or severe harm cannot be attributed to incorrect preparation, treat as a Serious Untoward Incident.

Setting: All healthcare settings.

Guidance:

- *Patient Safety Alert - Promoting safer use of injectable medicines, 2007*, available at <http://www.nrls.npsa.nhs.uk/resources/patient-safety-topics/medication-safety/?entryid45=59812&p=4>

5. Maladministration of potassium-containing solutions

Death or severe harm as a result of maladministration of a potassium-containing solution.

Maladministration refers to;

- selection of strong³ potassium solution instead of intended other medication,
- wrong route administration, for example a solution intended for central venous catheter administration given peripherally,
- infusion at a rate greater than intended.

Setting: All healthcare settings.

Guidance:

- *Patient safety alert – Potassium chloride concentrate solutions, 2002 (updated 2003)*, available at <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59882>

- *Standard Operating Protocol fact sheet; Managing Concentrated Injectable Medicines*, part of

³ ≥10% potassium w/v (eg ≥ 0.1mg/ml potassium chloride, 1.3mmol/ml potassium chloride)

the WHO High 5’s project, available at <https://www.high5s.org/bin/view/Main/WebHome>

6. Wrong route administration of chemotherapy

Intravenous or other chemotherapy (for example, vincristine) that is correctly prescribed but administered via the wrong route (usually into the intrathecal space).

Setting: All healthcare premises.

Guidance:

- *HSC2008/001: Updated national guidance on the safe administration of intrathecal chemotherapy*, available at

<http://www.dh.gov.uk/en/publicationsandstatistics/lettersandcirculars/healthservicecirculars/dh086870>

- *Rapid Response Report NPSA/2008/RRR004 using vinca alkaloid minibags (adult/adolescent units)*, available at <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59890>

7. Wrong route administration of oral/enteral treatment

Death or severe harm as a result of oral/enteral medication, feed or flush administered by any parenteral route.

Setting: All healthcare settings.

Guidance:

- *Patient Safety Alert NPSA/2007/19 - Promoting safer measurement and administration of liquid medicines via oral and other enteral routes*, 2007, available at

<http://www.nrls.npsa.nhs.uk/resources/?entryid45=59808>

8. Intravenous administration of epidural medication

Death or severe harm as a result of intravenous administration of epidural medication.

- A broader “never event” covering intravenous administration of intrathecal medication or

intrathecal administration of intravenous medication is intended once the deadlines for Patient Safety Alert 004A and B actions have passed.

Setting: All healthcare premises.

Guidance:

- *Patient Safety Alert NPSA/2007/21, Safer practice with epidural injections and infusions*, available at <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59807>

- *Safer spinal (intrathecal), epidural and regional devices - Parts A and B*, available at <http://www.nrls.npsa.nhs.uk/resources/?EntryId45=65259>

9. Maladministration of Insulin

Death or severe harm as a result of maladministration of insulin by a health professional.

Maladministration in this instance refers to when a health professional

- uses any abbreviation for the words ‘unit’ or ‘units’ when prescribing insulin in writing,
- issues an unclear or misinterpreted verbal instruction to a colleague,
- fails to use a specific insulin administration device e.g. an insulin syringe or insulin pen to draw up or administer insulin, or
- fails to give insulin when correctly prescribed.

Setting: All healthcare settings.

Guidance:

- *Rapid response report – Safer administration of insulin*, 2010, available at <http://www.nrls.npsa.nhs.uk/alerts/?entryid45=74287>

- *NHS Diabetes – Safe use of insulin*, 2010, available at http://www.diabetes.nhs.uk/safe_use_of_insulin/

- *NHSIII Toolkit – Think Glucose*, 2008, available at www.institute.nhs.uk/thinkglucose

- *NHS Diabetes guidance - The Hospital Management of Hypoglycaemia in Adults with Diabetes Mellitus*, 2010, available at <http://www.diabetes.nhs.uk/document.php?o=1037>

10. Overdose of midazolam during conscious sedation

Death or severe harm as a result of overdose of midazolam injection following use of high strength midazolam (5mg/ml or 2mg/ml) for conscious sedation.

- Excludes areas where use of high strength midazolam is appropriate. These are specifically only in general anaesthesia, intensive care, palliative care, or where its use has been formally risk assessed.
- Excludes paediatric care.

Setting: All healthcare premises.

Guidance:

- *Rapid Response Report - Reducing risk of overdose with midazolam injection in adults*, 2008, available at

<http://www.nrls.npsa.nhs.uk/resources/patient-safety-topics/medication-safety/?entryid45=59896&p=2>

- *Guidelines for nursing care in interventional radiology*, 2006, available at

<http://www.rcr.ac.uk/docs/radiology/pdf/GuidelinesforNursing.pdf>

- *Safe sedation, analgesia and anaesthesia with the radiology department*, 2003, available at

<http://www.rcr.ac.uk/publications.aspx?PageID=310&PublicationID=186>

11. Opioid overdose of an opioid-naïve patient

Death or severe harm as a result of an overdose of an opioid given to a patient who was opioid naïve. Specifically this means:

- Where a dose is used that is not consistent with the dosing protocol agreed by the healthcare organisation, or the manufacturer’s recommended dosage for opioid-naïve patients*.
- Where the prescriber fails to ensure they were familiar with the therapeutic characteristics of the opioid prescribed.
- Excluded are cases where the patient was already receiving opioid medication.

Setting: All healthcare settings.

Guidance:

- *Rapid Response Report – Reducing dosing errors with opioid medicines*, 2008, available at <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59888>

- *Specific Product Characteristics available at www.medicines.org.uk

12. Inappropriate administration of daily oral methotrexate

Prescription, supply or administration of daily oral methotrexate to a patient for non-cancer treatment including supply to the patient with the instruction to take daily.

- Excludes cancer treatment with daily oral methotrexate
- Excludes where the error is intercepted before the patient is supplied with the medication.

Setting: All healthcare settings.

Guidance:

- *Patient safety alert - Improving compliance with oral methotrexate guidelines*, 2006, available at <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59800>

MENTAL HEALTH

13. Suicide using non-collapsible rails

Death or severe harm to a mental health inpatient as a result of a suicide attempt using non-collapsible curtain or shower rails.

Setting: All mental health inpatient premises.

Guidance:

- *NHSE SN (2002) 01: Cubicle rail suspension system with load release support systems*, available at

http://www.dh.gov.uk/en/publicationsandstatistics/lettersandcirculars/estatesalerts/dh_4122863

- *NHSE (2004) 10: Bed cubicle rails, shower curtain rails and curtain rails in psychiatric in-patients settings*, available at

www.dh.gov.uk/en/publicationsandstatistics/lettersandcirculars/estatesalerts/dh_4119476

- *Clinical guideline 16 – self-harm: the short term physical and psychological management and*

prevention of self-harm in primary and secondary care, 2004, available at www.nice.org.uk/guidance/CG16

- *DH (2007)08: Cubicle curtain track rails (anti-ligature)*, available at

http://www.dh.gov.uk/en/publicationsandstatistics/lettersandcirculars/estatesalerts/dh_076400

14. Escape of a transferred prisoner

A patient who is a transferred prisoner escaping from medium or high secure mental health services where they have been placed for treatment subject to Ministry of Justice restriction directions.

Setting: All medium and high secure mental health inpatient premises.

Guidance:

- *Standards for medium secure units, 2007*, available at

www.rcpsych.ac.uk/pdf/Final%20Standards%20for%20Medium%20Secure%20Units%20PDF.pdf

- *Best Practice Guidance: Specification for adult medium-secure services, 2007*, available at

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_078744

GENERAL HEALTHCARE

15. Falls from unrestricted windows

Death or severe harm as a result of a patient falling from an unrestricted window.

- Applies to windows “within reach” of patients. This means windows (including the window sill) that are within reach of someone standing at floor level and that can be exited/fallen from without needing to move furniture or use tools to assist in climbing out of the window.
- Includes windows located in facilities/areas where healthcare is provided and where

patients can and do access.

- Includes where patients deliberately or accidentally fall from a window where a restrictor has been fitted but previously damaged or disabled, but does not include events where a patient deliberately disables a restrictor or breaks the window immediately before the fall.

Setting: All healthcare premises.

Guidance:

- *Health Technical Memorandum (HTM) 55: Windows*, available via

<http://www.spaceforhealth.nhs.uk/England/space-health>

- *DH(2007)09 – Window restrictors*, 2007, available at

http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_080164.pdf

16. Entrapment in bedrails

Death or severe harm as a result of entrapment of an adult in bedrails that do not comply with Medicines and Healthcare products Regulatory Agency (MHRA) dimensional guidance.

Setting: All adult inpatient care premises.

Guidance:

- *Safer practice notice – Using bedrails safely and effectively*, 2007, available at

<http://www.nrls.npsa.nhs.uk/resources/?EntryId45=59815>

- *DB 2006(06) Safe use of bed rails*, 2006, available at

http://www.mhra.gov.uk/home/idcplg?IdcService=GET_FILE&dDocName=CON2025397&RevisionSelectionMethod=LatestReleased

- *Local Authority Circular - Bed Rail Risk Management*, 2003, available at

<http://www.hse.gov.uk/lau/lacs/79-8.htm>

17. Transfusion of ABO-incompatible blood components

Death or severe harm as a result of the inadvertent transfusion of ABO-incompatible blood

components.

- Excludes where ABO-incompatible blood components are deliberately transfused with appropriate management.

Setting: All healthcare premises.

Guidance:

- *Safer Practice Notice – Right Patient, Right Blood*, 2006, available at <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59805>

- *SHOT Lessons for clinical staff*, 2007, available at <http://www.shotuk.org/wp-content/uploads/2010/03/SHOT-lessons-for-clinical-staff-website.pdf>

- *SHOT Lessons for Clinical Staff* 2009, available at <http://www.shotuk.org/wp-content/uploads/2010/12/Lessons-for-Clinical-Staff-Dec-2010.pdf>

18. Transplantation of ABO incompatible organs as a result of error

Death or severe harm arising from inadvertent ABO mismatched solid organ transplantation

- Excluded are scenarios in which clinically appropriate ABO incompatible solid organs are transplanted deliberately.
- In this context, ‘incompatible’ antibodies must be clinically significant. If the recipient has donor-specific anti-ABO antibodies and is therefore likely to have an immune reaction to a specific ABO incompatible organ, then it would be a “never event” to transplant that organ inadvertently and without appropriate management.

Setting: All healthcare premises.

Guidance:

- *BSHI and BTS Guidelines for the Detection and Characterisation of Clinically Relevant Antibodies in Allotransplantation*, 2010, available at

<http://bts.demo.eibs.co.uk/transplantation/standards-and-guidelines/>

- *Antibody incompatible transplant guidelines*, 2006, available at

<http://bts.demo.eibs.co.uk/transplantation/standards-and-guidelines/>

Patient Safety Alert – WHO Surgical Safety Checklist, 2009, available at

<http://www.nrls.npsa.nhs.uk/resources/clinical-specialty/surgery/>

19. Misplaced naso- or oro-gastric tubes

Death or severe harm as a result of a naso- or oro-gastric tube being misplaced in the respiratory tract.

Setting: All healthcare premises.

Guidance:

- *Patient safety alert – Reducing harm caused by misplaced nasogastric feeding tubes*, 2005, available at <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59794>

- *Patient safety alert – Reducing harm caused by misplaced naso and orogastric feeding tubes in babies under the care of neonatal units*, 2005, available at

<http://www.nrls.npsa.nhs.uk/resources/?entryid45=59798&q=0%c2%acnasogastric%c2%ac>

20. Wrong gas administered

Death or severe harm as a result of the administration of the wrong gas, or failure to administer any gas, through a line designated for Medical Gas Pipeline Systems (MGPS) or through a line connected directly to a portable gas cylinder.

Setting: All healthcare premises.

Guidance:

- *Health Technical Memorandum 02-01 parts A & B*, 2006, available at

https://publications.spaceforhealth.nhs.uk/?option=com_documents&task=new_pubs&Itemid=1®ion=England

- *Rapid Response Report - Oxygen Safety in Hospitals*, 2009, available at

<http://www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=62811>

- *NHSE SN (2003) 02: Medical liquid oxygen supply systems*, 2003, available at

http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4121320.pdf

- *NHSE SN (2003) 01: Oxygen cylinder manifolds used to supply oxygen for patient use*, 2003, available at

http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4121317.pdf

- *DH (2008) 06 - Medical air plant*, 2008, available at

http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_087060.pdf

21. Failure to monitor and respond to oxygen saturation

Death or severe harm as a result of failure to monitor or respond to oxygen saturation levels in a patient undergoing general or regional anaesthesia, or conscious sedation for a healthcare procedure (e.g. endoscopy).

- Includes failure to physically have monitoring in place, and failure to act on relevant information from monitoring oxygen saturation.
- Excludes where action is taken in response to recorded adverse oxygen saturation levels, but this fails to prevent death or severe harm for other reasons (e.g. pre-existing problems with oxygenation that cannot be resolved).
- Excludes incidents where the accepted limitations of monitoring equipment mean that adverse readings may be artefactual (e.g. shock/vasoconstriction).

Setting: All healthcare premises.

Guidance:

- *Recommendations for the Standards of Monitoring During Anaesthesia and Recovery (4)*, 2007, available at

<http://www.aagbi.org/publications/guidelines/docs/standardsofmonitoring07.pdf>

- *Royal College of Anaesthetists, Guidance on the provision of anaesthetic care in the non-theatre environment*, revised 2010, available at

<http://www.rcoa.ac.uk/docs/GPAS-ANTE.pdf>

- *British Society of Gastroenterology, Guidelines on safety and sedation during endoscopic procedures*, 2003, available at <http://www.bsg.org.uk/clinical-guidelines/endoscopy/guidelines-on-safety-and-sedation-during-endoscopic-procedures.html>

- *Academy of Royal Medical Colleges, Implementing and ensuring safe sedation practice for healthcare procedures in adults. Report of an intercollegiate working party chaired by the Royal College of Anaesthetists*, 2001, available at

<http://www.rcoa.ac.uk/docs/safesedationpractice.pdf>

22. Air embolism

Death or severe harm as a result of intravascular air embolism introduced during intravascular

infusion/bolus administration or through a haemodialysis circuit.

- Excludes the introduction of air emboli through other routes. This therefore excludes introduction via surgical intervention (particularly Ear, Nose and Throat surgery and neurosurgery), during foam scleropathy and during the insertion of a central venous catheter.
- Introduction of an air embolism after the insertion of a central venous catheter, through the line, and during its removal, is included.
- Excludes where the introduction of the air embolism was caused by the actions of the patient.

Settings: All healthcare premises.

Guidance:

- Section 9.8 - Air Embolism, RCN; Standards for Infusion Therapy, 2010, available at http://www.rcn.org.uk/_data/assets/pdf_file/0005/78593/002179.pdf

Avoidance of air embolism is part of basic training of clinicians, hence a lack of additional alerts to date. However, this is to be the subject of a forthcoming evidence based guideline from the Society of Acute Medicine. More information and basic instruction is available from the following medical texts;

- pp 366-372, *Lippincott’s Nursing Procedures, Lippincott, Williams and Wilkins*

- pp254-256, *Clinical Dialysis, Nissenson AR and Fine RN*

23. Misidentification of patients

Death or severe harm as a result of administration of the wrong treatment following inpatient misidentification due to a failure to use standard wristband (or identity band) identification processes.

Failure to use standard wristband identification processes means;

- Failure to use patient wristbands that meet the NPSA’s design requirements.
- Failure to include the four core patient identifiers on wristbands – last name, first name, date of birth and NHS number.
- Failure to follow clear and consistent processes for producing, applying and checking patient wristbands.
- Printing several labels with patient details at one time.

This definition excludes those units where wristbands are deliberately not used, primarily some mental health inpatient units (this requires local agreement). It also excludes instances where the patient refuses to wear a wristband despite a clear explanation of the risks of not doing so, or where it has been documented that the patient cannot wear a wristband due to their clinical condition or treatment, or in emergency care environments where high patient turnover, insufficient patient identity information, or the need for rapid treatment can delay wristband use.

Setting: All healthcare premises.

Guidance:

- *Patient Identifiers for Identity Bands: Information standard; Information Standards Board for Health and Social Care* - DSCN 04/2009, March 2009, available at

<http://www.isb.nhs.uk/library/standard/175>

- *Safer Practice Notice – Standardising Wristbands improves patient safety, 2007*, available at <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59824>

- - *Safer practice notice – Safer Patient Identification, 2005*, available at

<http://www.nrls.npsa.nhs.uk/resources/patient-safety-topics/patient-admission-transfer-discharge/?entryid45=59799>

24. Severe scalding of patients

Death or severe harm as a result of a patient being scalded by water used for washing/bathing

- Excludes scalds from water being used for purposes other than washing/bathing (eg from kettles).

Settings: All healthcare premises.

Guidance:

- *Health Technical Memorandum 04-01 - The control of Legionella, hygiene, “safe” hot water, cold water and drinking water systems*, 2006, available at

https://publications.spaceforhealth.nhs.uk/index.php?option=com_documents&task=list_search&Itemid=1

- *Hospital Technical Memorandum HTM64 (Sanitary assemblies)*, 2006, available at

<https://publications.spaceforhealth.nhs.uk/stream.php?id=01o8Zon8oG1934VsQ69481n2q0o04047os04>

- *NHS Model Engineering Specification D08 (Thermostatic Mixing Valves – healthcare*

premises), 1999, available at:

<https://publications.spaceforhealth.nhs.uk/stream.php?id=or81A6017G5n7qLq4o7k491n91p64ns06o9r;>

- *Scalding risks from hot water in health and social care LAC: 79/5*, 2007, available at

<http://www.hse.gov.uk/lau/lacs/79-5.htm>

MATERNITY

25. Maternal death due to post partum haemorrhage after elective caesarean section

In-hospital death of a mother as a result of haemorrhage following elective caesarean section.

- Excludes cases where placenta accreta is found, or where there is a pre-existing bleeding disorder, or the mother refuses blood components for any reason.
- Excludes emergency caesarean section and where a scheduled elective caesarean section is brought forward.

Setting: All healthcare premises.

Guidance

- *The role of emergency and elective interventional radiology in postpartum haemorrhage, good practice No. 6*, 2007, available at <http://www.rcog.org.uk/womens-health/clinical-guidance/role-emergency-and-elective-interventional-radiology-postpartum-haem>

- *Saving mothers' lives: Reviewing maternal deaths to make motherhood safer – 2003-2005*, 2007, available at www.cemach.org.uk/getattachment/927cf18a-735a-47a0-9200-cdea103781c7/saving-mothers--lives-2003-2005_full.aspx

- *Patient Safety alert – WHO safer surgery checklist*, 2009, available at <http://www.nrls.npsa.nhs.uk/resources/clinical-specialty/surgery/>

- *BCSH Guidelines on the Management of Massive Blood Loss*, 2006, available at http://www.bcsghguidelines.com/documents/massive_bloodloss_bjh_2006.pdf