

Draft Practice Guide for Mortality and Morbidity Meetings

Scottish Mortality and Morbidity Programme

November 2016

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Contents

Foreword	4
1. Introduction	5
2. Structure of mortality and morbidity meetings and processes	8
3. Mortality and morbidity core dataset	12
4. Chairing mortality and morbidity meetings	13
5. Analysis of mortality and morbidity events	15
6. Life after the mortality and morbidity meeting	20
7. Mortality and morbidity process evaluation	22
8. Evidence base for safety culture and systems	23
9. Knowledge of systems	25
References	27
Appendix 1: Development of the practice guide	30
Appendix 2: Example of a mortality and morbidity process or structure pathway for reporting and learning	32
Appendix 3: Examples of mortality and morbidity evaluation tools	33
Appendix 4: Example of mortality and morbidity record	36

Foreword

It is a real pleasure to contribute to the introduction of this important and practical document.

It is evident that hospital episodes occasionally result in unintended outcomes. Sometimes the safety of patients can be compromised by failures in the delivery or system of care. It is also evident that, as responsible clinicians, we ought to record, review and most importantly, learn from these experiences. Therein lies an important key to enhancing the delivery of safe effective care.

Reflection and learning from the past has driven advances in care for centuries and underpins the professional codes for all clinicians. The challenges in developing approaches, which allow and enable open, non-judgemental conversations and learning have led to these reflective practices being less impactful than they might otherwise have been. Creating a culture in which such reflections are enabled to be open, supportive and oriented to improvement for the future rather than created around blame and mired in the past needs vision and action.

In North America, one duty of the Center for Disease Control and Prevention is to inform public awareness and national research priorities. Their work has emphasised the importance of recognising the systemic breakdown in patient safety that can result from a range of causes. These include communication breakdown, errors of judgement and the results of a deviation from the ideal process of care, resulting in acts of omission or commission which can occasionally lead to patient harm or even mortality. It is clear that life in the NHS is no different. It is vital that we deliver a well-researched and robust system to allow all our clinical team members to have access to the benefit of learning from those occasions when the intended outcome was not achieved.

This practice guide provides both the scholarly background and practical advice needed to run professional and high value mortality and morbidity meetings which are essential to improve the quality of care we can deliver. This guide builds on the work of the Scottish Audit of Surgical Mortality (SASM) and many other systematic reflections on practice and sets out the conditions, methods and approaches under which improvement will flourish.

The approach is based on a responsible, open and honest culture of practice where staff are protected and learning opportunities are paramount. The principles, practice and details explained in this practice guide will allow all clinicians to participate in this vital activity. Such nationwide participation will foster a culture, which promotes learning and strives for the expert delivery of the safest care.

We would like to express our sincere thanks to Dr Manoj Kumar, Dr Andrew Longmate, Christie Waters, Dr Alex Stirling and many others who have invested in creating this guide.

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1. Introduction

1.1 Scottish Mortality and Morbidity Programme

The Scottish Mortality and Morbidity Programme (SMMP)¹ aims to improve mortality and morbidity meetings and processes within NHSScotland through:

- learning and training to provide skills and support to design and run effective mortality and morbidity meetings and processes
- sharing learning across NHSScotland, and
- technology and IT systems that support mortality and morbidity processes.

1.2 What is the mortality and morbidity process?

The M&M process describes the review of incidents from the initial event to the mortality and morbidity meeting and implementation of identified actions or outcomes.^{2, 3}

A mortality and morbidity meeting is '*a unique opportunity for caregivers to improve the quality of care offered through case studies. They provide clinicians and members of the healthcare team with a routine forum for the open examination of adverse events, complications, and errors that may have led to illness or death in patients*'.⁴

Mortality and morbidity meetings are also known as mortality and morbidity reviews or conferences, case conferences or clinical teaching conferences. The term 'patient safety' or 'quality improvement' or 'quality assurance' (or a similar variant) is occasionally appended as a prefix.

An example of a mortality and morbidity process or structured pathway for reporting and learning is provided in Appendix 2.

1.3 Why do we need mortality and morbidity meetings?

Mortality and morbidity meetings support a systematic approach to the review of patient deaths or care complications to improve patient care and provide professional learning.³ The meetings give ownership to clinical teams and offer a direct opportunity to improve care delivery in a timely manner. Effectively run audit and peer review processes, incorporating analysis of mortality and morbidity cases, contribute to improved patient safety and professional development.^{3, 5, 6}

Mortality and morbidity meetings traditionally exist in many healthcare organisations, but the learning and improvement outputs are underutilised.⁷ The evidence suggests that this type of educational approach can '*improve accountability of mortality data and support quality improvement without compromising professional learning*', particularly when a standardised review and facilitation process are employed.^{2, 8-10}

There are often gaps between the function and learning from mortality and morbidity meetings and other reflective practice and wider organisational governance and quality assurance thus further limiting organisational learning and limiting the value placed upon such team activities.⁷

1.4 The key factors for a successful mortality and morbidity process

The mortality and morbidity process and meetings are an opportunity for peer review, collective learning and quality improvement. It is recognised that variation in the process and support for such activities limits their operation and impact.¹¹

Key factors for success include:

- mortality and morbidity meetings that aim to be a blame-free but a professionally accountable forum, based on sound educational principles and encourages openness, honesty and transparency from participants
- a focus on learning and improvement of systems and processes of care and not on individual performance
- a 'systems' approach to the discussion and analysis of case presentations is necessary at all times to ensure in-depth understanding, effective team learning and the development of appropriate improvement actions and recommendations
- performance management and competency issues should be raised by the mortality and morbidity chair with the relevant senior leader (for example, the clinical director) outside the forum, and
- outcome data from the mortality and morbidity forum should be recorded, integrated with and inform other organisational safety and improvement initiatives and obligations to maximise collective learning.

1.5 Purpose of the practice guide

Whilst there are examples of good practice across NHSScotland, the SMMP National Survey highlighted significant variation in the governance, structure, practice and presentation of outputs. This is supported by the evidence, which highlights variations in the process and conduct of meetings, and the impact on learning and improvement.

The practice guide presents an opportunity for improvement in patient care and effective sharing of mortality and morbidity learning, locally, regionally and nationally.

The practice guide outlines:

- the high-level principles to inform a fundamental understanding of an effective mortality and morbidity process
- undertaking analysis of events through an understanding of 'human factors' and a systems approach
- creating conditions for an effective learning environment, and
- practical advice on establishing and running structured and standardised mortality and morbidity meetings.

The guide is intended for clinical teams and can be adapted by individual departments or services, where necessary.

1.6 How to participate in the consultation process

We welcome feedback on the draft practice guide and will review every comment received. The practice guide will be circulated to relevant professional and clinical groups.

If you have any questions about the consultation process, please contact:

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Delta House
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Email: hcis.standardsandindicators@nhs.net

1.6.1 Submitting your comments

We are encouraging people to use our online survey tool to submit their responses <http://www.smartsurvey.co.uk/s/GXS06/>.

The consultation closes on **Thursday 15 December 2016**. If you would like to submit your comments using a different format, please email hcis.standardsandindicators@nhs.net.

1.6.2 Consultation feedback

At the end of the consultation period, all comments will be collated and used to inform the final practice guide.

The final practice guide and a quick reference guide for mortality and morbidity meetings will be published in Spring 2017.

2. Structure of mortality and morbidity meetings and processes

2.1 Governance structures

The success of the mortality and morbidity process and associated meetings is dependent on the existence of a reporting, learning and a 'just culture' within the NHS board.^{3, 12-19}

A structured approach to reporting, recording and learning provides a department or organisation with memory of outcomes from mortality and morbidity meetings. This is relevant for identifying trends and conducting appropriate analysis or audits of care. Appendix 2 provides an example of a mortality and morbidity process or structured pathway for reporting and learning.

To support the mortality and morbidity process, the organisation has a robust reporting and learning structure that:

- enables staff to record and discuss complications, adverse events, near misses within an agreed organisational timeframe
- ensures relevant informatics, logistical and IT support for the mortality and morbidity process
- is aligned with the mortality and morbidity meeting process and related data generated, and
- identifies trends and analysis or audits of care.

Staff have access and training in local incident reporting systems and the mortality and morbidity process.

The mortality and morbidity meetings report into the wider organisation's clinical governance arrangements, information governance, data protection and Caldicott Guardian.

The mortality and morbidity committee provides relevant organisational and governance committees with quarterly reports of mortality and morbidity meeting outcomes.

2.2 The mortality and morbidity committee

Where appropriate, a mortality and morbidity committee, which comprises of at least one senior clinician, trainee and senior nursing representative from the speciality or department should be convened.

The committee has responsibility for:

- identifying and preparing cases for discussion
- using an agreed system or proforma for case selection, and
- undertaking an initial analysis of cases to be used as part of the mortality and morbidity discussion.

The mortality and morbidity committee is supported by local management teams, ensuring that adequate resources, time and training is allocated to mortality and morbidity case reviews.^{2, 5, 15}

2.3 Case selection

For consistency and standardisation of mortality and morbidity analysis and reporting, the department, specialty or NHS board provides guidance on the:

- definition of morbidity through reference to national clinical audits/registries or use of the Clavien-Dindo classification,²⁰ and
- specific criteria used for case selection.

Specific criteria for mortality and morbidity includes:

- inpatient deaths
- patient safety incidents which resulted in 'moderate to severe harm', or near misses (where patients could have been harmed)
- patients whose discharge from hospital was delayed by complications
- unplanned patient readmissions under any specialty within 30 days
- returns to theatre within the same or recent admission
- post-operative complications
- 'Never Events' (as per NHS lists), and
- learning from everyday examples of excellent care.

The mortality and morbidity committee will:

- prioritise cases with significant learning points for discussion and in-depth analysis for meetings, and
- review reported cases, which were not selected or discussed at meetings, to ensure data is available for trend analysis and audit.

The discussion and analysis of cases of good clinical care with positive outcomes provide opportunities to understand and learn from everyday clinical work.^{16, 21, 22}

2.4 Organisation of the mortality and morbidity meeting

The timeframe from the event to the mortality and morbidity discussion and sharing of learning should not exceed 6 weeks, where feasible. This ensures lessons are learned as close to the event, and appropriate actions are taken promptly to prevent future occurrences.

Mortality and morbidity meetings:^{2, 5, 15, 16, 21, 22}

- are held on a regular basis on set days and times, for example weekly, fortnightly or monthly to provide an opportunity for cases to be discussed in a timely manner
- the frequency of meetings will be dependent upon the volume or output of the unit or department
- are held in a dedicated meeting room which is accessible to, and large enough for, participants and is well-equipped with audio-visual equipment and other supporting educational aids
- quarterly summary report of outcomes from mortality and morbidity meetings should be made available to the respective governance committees in each NHS board areas

- in order to effect change and ensure good system governance, mortality and morbidity meetings should be connected with the wider organisation's clinical governance arrangement, and
- planned in advance with wide promotion and regular reminders using posters, flyers and automated emails.

2.5 Who should attend mortality and morbidity meetings?

The mortality and morbidity meeting is a highly relevant educational forum. Participation is an integral part of routine education and learning for clinicians, doctors in training and healthcare staff.^{13-16, 21}

Attendance at mortality and morbidity meetings should be monitored and used by staff as evidence in appraisals and medical revalidation.

Clinical leads and management teams have responsibility for ensuring that attendance and time required for the preparation for mortality and morbidity meetings is protected.

The meeting attendees should be inclusive, multidisciplinary and reflect how frontline patient care is delivered and supported.

IT systems and other methods to ensure shared learning are provided where it is not feasible to have multi speciality attendance at the meetings.

Core attendees should include:

- consultants, associate specialists, fellows, trainees, medical students
- nursing and/or midwifery staff.

The following professionals should also be encouraged to attend the meetings where appropriate

- allied health professionals
- clinical pharmacists
- clinical governance, risk management, health and safety staff
- management representatives, and
- other support staff, for example secretaries, ward clerks as appropriate.

2.6 Mortality and morbidity case presentation

A standardised format is recommended for mortality and morbidity case presentations, for example using the SBAR approach (see Table 1).^{6, 23} This facilitates:

- consistency of approach
- improves quality of presentations
- enhances learning for participants, and
- ensures a focus on actions for improvement.

All case presentations must maintain anonymity and not identify patients or staff members. For example, use patient A, Dr X, nurse Y.

Participants are reminded at the start of the mortality and morbidity meeting that all information shared is confidential.

Table 1: Example of SBAR approach for mortality and morbidity presentations

Heading	Areas for inclusion
Situation	Statement of the problem, including: • admitting diagnosis • procedure or operation • details of adverse outcome
Background	Clinical information pertinent to the adverse outcome, including: • patient history • indication for intervention • laboratory and imaging studies • procedural details • hospital course – non-procedural events related to the outcome • how and when the complication or event was recognised • management of the complication or event
Assessment and analysis	Evaluation of what happened and why: • describe the sequence of events leading to the adverse outcome • why it occurred – description of contributory factors and how these interacted across the system. Prioritise as appropriate. Use PaCE analysis model or similar approach
Review of literature	Present the evidence base relevant to the complication.
Recommendations	• identify how the complication or event could have been prevented or better managed • identify learning points from the case • identify actions to prevent or minimise future reoccurrence.

3. Mortality and morbidity core dataset

It is recommended that the dataset collated for mortality and morbidity meetings is incorporated into existing IT and incident reporting systems.

Data collection for mortality and morbidity meetings must comply with the health boards' information governance and data protection.

Accuracy and completeness of data collection and coding will ensure a system that is able to monitor trends and provide effective feedback for learning and improvement.

Having an effective electronic system provides 'organisational memory' of relevant output from mortality and morbidity meetings. It also facilitates dissemination of learning between teams and other NHS boards.

The mortality and morbidity dataset, where feasible, should include the following five core aspects:

- learning points to be addressed (incident)
- contributing factors (identification and prioritisation of system wide issues)
- lessons learned
- action points to mitigate future occurrence and to disseminate learning. This should include individual or team responsibilities and timelines, and
- Duty of Candour²⁴ (professional and organisational).

In addition to these core aspects, the mortality and morbidity dataset may include:

- meeting details – including frequency and attendance lists
- patient demographics and characteristics
- details of the incident
- primary and secondary diagnosis and other relevant medical history
- procedures and treatment
- complications, and
- mortality.

An example of a mortality and morbidity meeting recording form is provided in Appendix 4. The core dataset is included and the points noted in the assessment should be used to generate discussion among the attendees.

4. Chairing mortality and morbidity meetings

4.1 Role of the chair

The role of the chair is key to creating a positive learning culture that encourages collaboration and collegiality, and contributes to building a strong safety culture locally.^{3, 12-14, 16, 21, 22}

The role of the chair includes:

- overseeing the preparation and organisation of mortality and morbidity meetings
- facilitating meetings, keep to time, encouraging participants to become involved and to summarise learning and actions
- managing conflict diplomatically and sensitively when it arises, and
- facilitating consensus on any decision-making, and ensuring action points for improvement are captured and implemented.

4.2 Knowledge, skills and experience of the chair

The chair should have a strong interest in mortality and morbidity meetings, patient safety and improvement.

The chair may be a senior clinician, senior trainee (supervised by a consultant) or a senior nursing colleague (supported by a consultant).

A deputy may be appointed to cover should the chair be unavailable or as part of succession planning arrangements. Consideration may also be given to a rotating chair.

The chair is required to have the appropriate knowledge, skills and attributes to effectively manage discussions around mortality and morbidity cases, while also ensuring that learning is captured and improvement actions agreed.

Previous experience of chairing meetings and/or facilitating small group work, and capturing agreed learning and improvement outputs.

A working knowledge of the key principles underpinning the following disciplines:

- systems approach, including understanding 'human factors'
- quality improvement theory and methods, for example data measurement, change management, criterion-based audit, PDSA cycles and models for improvement
- systems-based analysis of patient safety incidents, and
- the evidence base relating to patient safety issues in healthcare.

4.3 Managing participants and conflict

The chair will be required to manage conflict that arises during the discussions. A requisite skill of the chair is the ability to manage these situations decisively, diplomatically and sensitively.²⁵

Where there is a fear of blame, judgement and perceived negative consequences, participants may become reluctant to engage with the mortality and morbidity process and

likely to withhold information about events. This may impact on the effectiveness of the mortality and morbidity process.

The following pointers may be useful.

- Establish ground rules at the beginning of the meeting – the chair can reiterate that the session should be open, honest but blame free. Participants are reminded to refrain from attributing direct personal blame or criticism towards colleagues. Feedback should be fair, constructive, sensitively delivered and practically useful.
- Recognition that colleagues involved may have been emotionally impacted by the event and this may not be immediately obvious.
- Bullying and overbearing behaviours should never be tolerated by the chair or mortality and morbidity participants.
- Distinguish between personality and behaviours related to the situation.
- Look for clues (non-verbal behaviours or comments) which may indict why a person is behaving in a certain way. For example, the participant has a vested interest in the outcome, they are attending under duress, or they have an elevated status within the department.
- Monitor team dynamics and interactions to ensure wide participation.
- Recognise emotion in the discussion, acknowledge it and allow appropriate expression within the group.
- Remain objective, avoid giving unwarranted opinions or colluding with individuals during discussions.
- Summarise and share the contributions, and facilitate discussions from other participants to respectfully challenge arguments, assumptions and behaviours that are causing conflict.

The following questions may be helpful for the mortality and morbidity chair to reflect on during these situations:

- (a) What effect is the conflict or behaviour having on you?
- (b) How are you responding to this conflict or behaviour?
- (c) Is there an explanation for the conflict or behaviour?
- (d) How is the conflict or behaviour affecting other participants?

4.4 Engaging participants

A number of tactics can be used to ensure full participant engagement including²⁵:

- the timing of the meeting to maximise attendance
- establishment of ground rules to encourage inclusive participation
- provision of refreshments and a comfortable learning environment
- ensure time is protected
- asking open and challenging questions to encourage interaction
- using audio-visual to demonstrate key points and to prompt discussions, and
- keeping case presentations consistently concise with adequate time for questions and feedback.

5. Analysis of mortality and morbidity events

The mortality and morbidity process often requires analysis of events where there has been harm or potential for harm to a patient. The analysis of mortality and morbidity events in healthcare occurs in a short timeframe.

This section identifies some of the theory to support the analysis of mortality and morbidity events. Using these concepts can aid the learning process and emphasise that mortality and morbidity events in healthcare are often the result of complex systems with numerous interacting factors at play.

Analysis of events should ideally be carried out prior to the meeting and outcomes used to support discussions at the meeting. Where new information is obtained at the meeting, this should be taken into account and documented accordingly.

5.1 What is a systems approach?

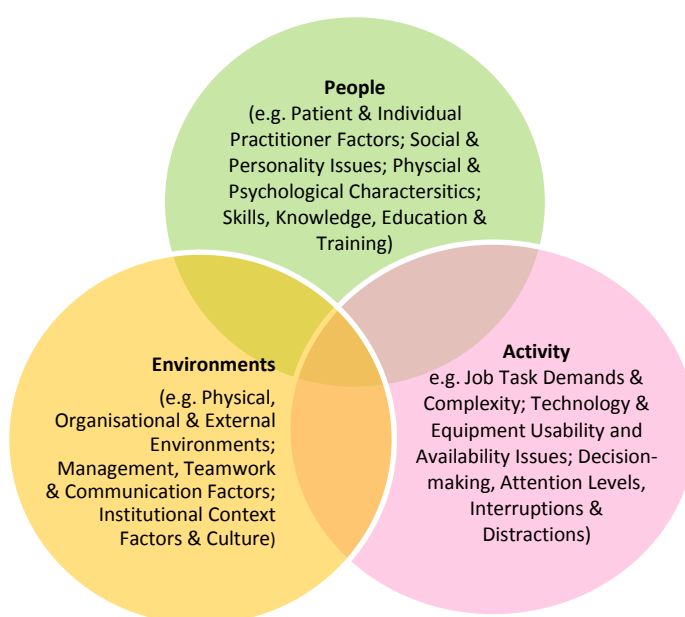
The application of a systems approach to the mortality and morbidity process aids understanding and supports improvement in the quality and safety of patient care. It requires a definition and understanding of the system and interactions in which the event happened.^{8-10, 12, 15}

Using the systems approach in mortality and morbidity analysis involves the following three principles^{26, 27}:

5.1.1 Understanding system relationships and interactions

For each episode of patient care being discussed and analysed, attempt to understand the interactions and relationships between different elements of the care system and how these combined to contribute to the incident. Change and improvement are also implemented by identifying, considering and prioritising these interactions (see Figure 1).

Figure 1: PAcE analysis model of a systems approach to analyses patient safety incidents and problems in healthcare settings



5.1.2 Actively seek multiple perspectives

There will be different perspectives on the way the system works, and everyday interactions and relationships will change frequently. For example, a clinical protocol may reflect the evidence base but not adequately reflect the system at a local level. When analysing mortality and morbidity cases, it is important to capture the perspectives of all relevant staff groups.

5.1.3 Defining the system boundary

Systems are influenced by many internal and external factors and it is not possible to consider all of these. When analysing a specific mortality and morbidity event, there requires to be an agreement on the system boundaries. This may alter by case. The boundary can be defined by location (for example, ward, theatre or hospital building), by professional groups or settings (for example, social work, facilities department or central laundry).

All factors considered essential to the healthcare system being analysed should be included within the boundary. For example, the team may decide to examine prescribing within the ward setting. However, if the overall role of the pharmacy department is important to the mortality and morbidity case then the boundary should be extended.

5.2 Systems models to guide case analysis

Various models are available to guide the adoption of a systems approach and thinking by frontline care teams when analysing mortality and morbidity cases in the short timescale available. All essentially perform the same task in this respect in terms of helping to identify and then prioritise contributory factors to the event under discussion. Three examples are outlined below:

5.2.1 The PAcE analysis model

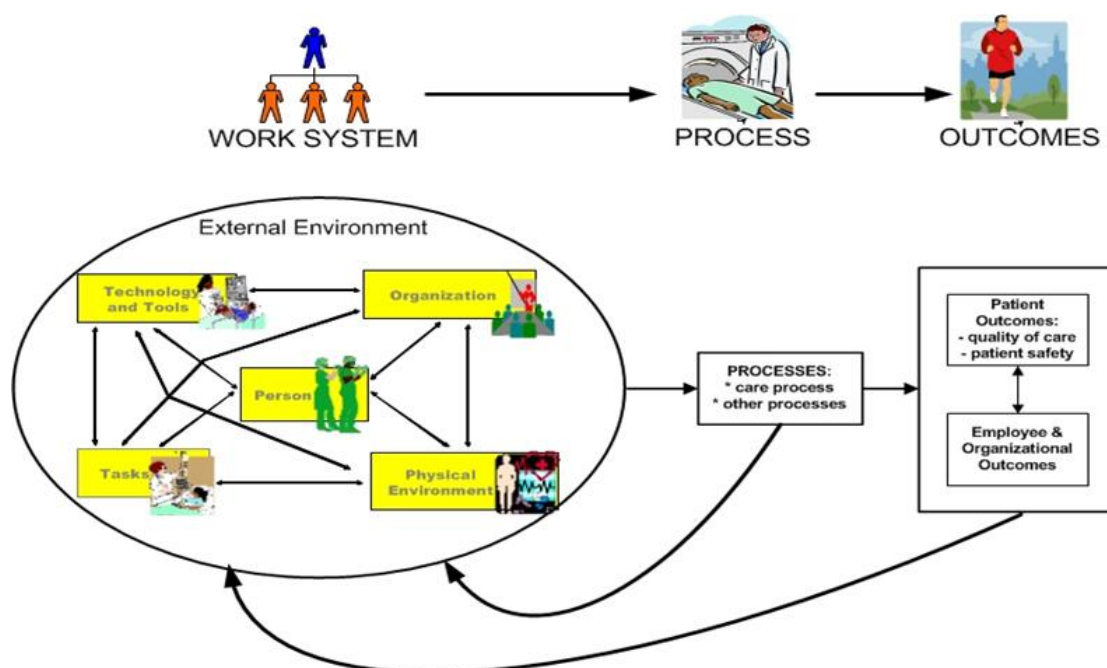
This model (see Figure 1) considers the interactions between:

- **People Factors** – for example, severity or uncertainty of the patient's condition, social and personality factors, clinician and staff training, skills, knowledge and competence, and physical and psychological characteristics such as fatigue, stress, motivation and needs.
- **Activity factors** - for example, job task demands such as mental and physical workload, decision-making, time pressure, attention levels, distractions and interruptions, volume and complexity of tasks; and interacting medical devices, tools and technology issues such as their availability and usability.
- **Environment factors** – for example, organisational issues such as how work is done, teamwork, verbal and written communication; staff levels, skill mix and shift patterns; information flow; leadership, management and supervisory issues; physical environment factors such as lighting, noise levels, workspace layout and design; prevailing safety culture and priorities; policies and standards; financial resources; and external pressures.

Think in-depth about the interactions between people, the activity that was undertaken and the immediate and wider healthcare systems and environment that people work in.²⁸ This model is a basic attempt to condense and simplify the various systems factors contained within the systems models illustrated in Figures 2 and 3 for busy and time-pressured clinical teams.

5.2.2 The Safety Engineering in Patient Safety (SEIPS model)

Figure 2: The SEIPS model²⁹



5.2.3 The London protocol

The London protocol³⁰ describes the factor types and contributing influencing factors (see Table 2).

Table 2: The London protocol

Factor types	Contributory influencing factor
Patient factors	- condition (complexity and seriousness) - language and communication - personality and social factors
Task and technology factors	- task design and clarity of structure - availability and use of protocols - availability and accuracy of test results - decision-making aids
Individual (staff) factors	- knowledge and skills - competence - physical and mental health
Team factors	- verbal communication - written communication - supervision and seeking help - team structure (congruence, consistency, leadership)

Factor types	Contributory influencing factor
Work environmental factors	• staffing levels and skills mix • workload and shift patterns • design, availability and maintenance of equipment • administrative and managerial support environment • physical
Organisational and management factors	• financial resources and constraints • organisational structure • policy, standards and goals • safety culture and priorities
Institutional context factors	• economic and regulatory context • National Health Service Executive • links with external organisations

5.3 What is the role of human error?

Human error is often used to indicate the ‘cause’ of an accident or incident, particularly when there is no obvious technical, mechanical or organisational cause.^{23, 26-28, 30}

To learn from mortality and morbidity events, there is a need to recognise that human error is highly likely to be a symptom of a problem in the wider care system. The issue of systems can be used as the trigger point for the discussion and analysis of an event if, for example, a patient was harmed or could have been harmed.

Human error is, therefore, not often the cause of the event or problem at hand. For Reason (1997), suggests human error is a normal part of everyday life, including in the workplace, and is a natural condition and occurrence that enables us to develop, function and learn.³¹

Mortality and morbidity related learning and improvement could be more objective, meaningful and effective, if we move away from focusing on individual human error.

It is important to note that all of this should take place within the context of a ‘just culture’¹⁹, which is balancing learning from patient safety incidents with accountability from their impacts. In this culture, clinicians and others are not punished for actions, omissions or decisions taken by them, which are commensurate with their experience and training, but where wilful neglect or egregious behaviours are not tolerated.

5.4 Practical pointers

It should be self-evident that staff do not go to work to do a bad job.

When looking back on staff and colleagues’ decision-making on a particular case, remember that decisions were made based on the dynamic circumstances faced at the time and the often very limited information that was available.

When analysing mortality and morbidity cases, the outcome will be known and will also have access to other information that would not be available to those colleagues involved at the time.

People are all influenced by cognitive biases (for example, hindsight bias and attribution bias) that affect how we view incidents and the decisions made. These need to be acknowledged and considered when investigating events as part of mortality and morbidity meetings.^{22, 23, 25, 30}

6. Life after the mortality and morbidity meeting

6.1 Shared learning

The focus of the mortality and morbidity meeting is to learn from events and improve patient care.

There should be a formal process to ensure lessons learned are documented, recorded and appropriately shared with relevant staff and specialties.

This process can be supported through relevant organisational IT systems.

Data and information (particularly any trends) should be used for training and learning within the department or organisation, for example, in the development of simulation training, induction training or incident analysis training.

6.2 Using mortality and morbidity output for improvement

It is encouraged that output from mortality and morbidity meetings be used to initiate and complete improvement work.

Periodical review of data and trend analysis of outcomes should be undertaken and reviewed by the relevant governance committees to ensure improvements in care have been made.

Review of mortality and morbidity meeting outputs should be undertaken regularly to ensure that action points have been followed up and completed in a timely manner.

Consider nominating a member of the clinical governance or improvement team to work alongside the mortality and morbidity chair to support the following activities.

- Identify patterns in mortality and morbidity outcome data and integrating this with wider quality and safety initiatives across the organisation.
- Ensure that agreed actions are followed-up and completed and that any changes to existing care systems are implemented and monitored. Where this has not been achieved, for example due to resource issues, this is escalated to senior clinical and administrative managers in the organisation.
- Draft and circulate periodic reports on the progress and contribution of the mortality and morbidity process along with organisational learning and improvement with examples of successes, and highlight and address any relevant challenges.

6.3 Administrative and clinical governance support

Administrative support is required for the organisation of mortality and morbidity meetings and processes.

This support may be included as part of a wider role within the department, service or organisation.

Duties may vary depending on the requirements of the department, service or organisation, and may include:

- supporting the chair and mortality and morbidity committee to organise meetings
- ensuring reports are documented within relevant systems, and collated for review by the committee and at meetings

- assisting in data retrieval and presentation at meetings
- recording meeting outputs, follow-up on actions and disseminating the learning points
- producing summary reports of mortality and morbidity meeting outcomes, and
- liaising with governance committees to ensure oversight of the process.

7. Mortality and morbidity process evaluation

Evaluation and review of mortality and morbidity meetings and outcomes should be ongoing and integrated within the educational process. The evaluation should include regularly capturing and acting on feedback from participants and seeking evidence of the impact of the mortality and morbidity process on improving the quality and safety of patient care, team performance and organisational learning.

The following questions can be used as a guide to evaluating the mortality and morbidity process:

- What is working well?
- What needs improvement?
- Are the goals of the mortality and morbidity process being consistently achieved?
- What evidence is there that the meetings are being effective in terms of patient care and learning (individual, team and organisational levels)?
- Does the mortality and morbidity process take a systems approach to learning and improvement?
- Does the mortality and morbidity analysis adhere to 'human factors' principles and approaches?
- Is the mortality and morbidity process contributing to building a safe and just culture?

A number of methods can be employed to collate feedback, including:

- annual online or email surveys of participants
- circulating short evaluation forms at the end of meetings every few months
- open discussion and questioning of participants on what is working well and what could be improved
- formal focus groups with key groups of participants, and
- informal discussions with selected participants to reflect different disciplines and staff groups.

Examples can be found in Appendix 3.

8. Evidence base for safety culture and systems

8.1 Understanding and building a safety culture

8.1.1 What is a safety culture?

A poor safety culture has been implicated as a contributory factor in incidents occurring within the NHS.

Safety culture is commonly defined as the combined individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the overall commitment to patient safety.³²

Organisational and staff commitment to a culture of safety will seek to:

- prioritise patient safety initiatives
- motivate staff to demonstrate behaviours that enhance safety thinking and practices, and
- demonstrate a leadership in patient safety.

8.1.2 How can we build a safety culture?

To develop a positive safety culture, there is a requirement to evaluate the current culture and identify areas for improvement. For example, consider with local care teams workload capacity, communication, team working, leadership, commitment to learning and improvement.

Taking a systematic approach will ensure a focus on patient safety and staff wellbeing. A positive safety culture enhances learning from adverse events and encourages changes to working practices and systems.³³

Common characteristics and examples of a positive safety culture include:

- staff are empowered to raise issues and problems without fear of negative consequences to them
- patient safety incidents are reported by all staff groups
- there is engagement in continuous learning and improvement as a local priority
- care teams communicate, work well and learn together, and
- the leadership is approachable, committed to improving patient safety, and encourages an environment for improvement and innovation.

Regular mortality and morbidity meetings are an important method for care teams to evaluate and improve the safety culture.

Building a positive safety culture should take place within the context of a just culture.¹⁹ This means that learning from patient safety incidents is balance within accountability from their impacts. Staff are not disciplined for actions or decisions taken which are commensurate with their experience and training. However, wilful neglect or egregious behaviours are not tolerated.

The four key principles of a just culture¹⁹ are:

- **Report** – staff report adverse events and near misses to allow learning from these events. Anxiety for staff should be minimised by detailing what will happen to the report, who will review the incident and the consequences of reporting.

- **Disclosure** – this involves discussing reports with patients, and demonstrating that the event has been taken seriously and change implemented to reduce reoccurrence. Disclosure also reduces complaints and litigations. It is recommended by the General Medical Council when there has been patient harm. Duty of Candour is an important aspect of this.
- **Protect** – staff who report or disclose need to be protected from negative consequences and written policies to define this are required.
- **Learn** – staff need to receive feedback and see change to have belief in the reporting system. Feedback can be local and at an individual or team level. This may lead to immediate change. Alternatively, where there are a number of incidents, feedback may be themed and used for organisational learning and change. This may take longer. Reported incidents may be useful in the wider context and shared between care teams. It can be useful for teams to revisit previous investigations to demonstrate that change has been implemented.

8.2 The role of ‘human factors’

‘Human factors’ (also known as ergonomics) is a systems and design-based discipline used in many different industries, particularly safety critical industries, for example energy, transport and defence sectors.³⁴

The role of ‘human factors’ within the healthcare context is to improve the wellbeing and performance of people (including patients and staff) and organisations. The aim is to understand and improve the fit between people and their working environment, ensuring a safer, more productive and efficient workplace.³⁵⁻³⁷

The role of ‘human factors’ thinking and approaches in healthcare is becoming increasingly recognised. However, to date, the focus is limited to behavioural strategies utilised to improve patient safety rather than a consideration of how wider systems and technology issues may impact on safety and performance, for example, design of work tasks, processes, technologies, physical environments and clinical systems.^{17, 23, 25}

Often in design, inputs and processes within the workplace fail to adequately take account of people, their abilities and characteristics. This makes it likely that system failures will occur and impact on wellbeing and performance.

A focus on ‘human factors’ can make a significant contribution to the mortality and morbidity process, for example, through focusing on:

- patient safety and quality improvement problem-solving activity
- the introduction of new information technology and other ways of working
- decision-making to inform NHS procurement of products and services
- the design of physical care environments
- job stress and burnout amongst doctors
- reflecting on and learning from the prevailing safety culture
- supporting the needs of the ageing clinical workforce
- the design and usability of medical equipment, and
- reducing work-related musculoskeletal disorders amongst clinicians and support staff.

9. Knowledge of systems

9.1 What is a system?

A system can be described as:

A set of elements or parts that is coherently organised and interconnected in a pattern or structure that produces a characteristic set of behaviours, often classified as its 'function' or 'purpose'.³⁸

Systems are often broken down into their component parts in an attempt to understand how they work, but a holistic view of system functioning encompassing the varied interactions between the different components is a core human factors principle.

The interacting systems governing and contributing to healthcare can normally be characterised as including:

- **People** – for example, the physical and mental characteristics and abilities of staff, patients and families), Tasks to support patient care (for example, surgical procedures, communication, prescribing, and care co-ordination)
- **Tools and technology** for example, the use of IT hardware and software systems and medical devices
- **Physical environment** for example, how well the design layout of theatres, wards and clinics, and lighting, heating and noise issues support or hinder staff performance and patient care, and
- **Organisational level work issues** for example, patterns of shift work, resource provision, determining job and patient care goals, and the prevailing culture.^{17, 23, 25}

9.2 Considering system interactions

As part of the mortality and morbidity discussion and analysis, it is important to understand how the system elements interact and are organised over time. It is more than a description of how the system functions or should function.

The goal of system design or redesign is to ensure that work systems benefit the patient, staff and the organisation as a whole. The aim is to improve both wellbeing and performance.¹⁸

9.3 Why is healthcare a complex system?

From a 'human factors' perspective, most healthcare settings are complex.³⁹ The goals of patient care are achieved through the interactions between people, technical and organisational components of the clinical system.

The term 'complex system' refers to a particular set of qualities found in clinical workplaces, which may include:

- a large number of potentially relevant factors or solutions to patient care and decisions required
- many people required to communicate within the system
- the time for a reaction to a clinician's decision or actions may vary from seconds to days, and requires careful consideration
- uncertainty in the information available

- a requirement to deal with and adapt to unpredictable events to maintain safety and efficiency within the system, and
- workload volume and problem interactions along with the frequent need to manage risk and uncertainty within everyday clinical situations.

9.4 Why things go wrong in complex clinical systems?

Many of the interactions between and within different clinical systems are rarely simple or linear.^{31, 38, 40, 41} The complex and dynamic interactions rather than individual actions often contribute to incidents and events, for example, constraints staff work under, limited design of technologies, and how work is organised.

Some of the other factors that influence clinical system performance include:

- mismatch between demand and capacity, for example, the number of patients attending the emergency department and the number of available staff
- work systems that are intractable and unpredictable, for example dealing with clinical uncertainty or a major emergency
- job performance goals that conflict, for example balancing the optimisation of safe care with system efficiency considerations, and
- everyday organisational constraints, for example inadequate procedural guidance, shift work arrangements, or availability of timely resources.

To compensate, clinical and healthcare professionals regularly adapt work routines and make performance trade-offs in order to deliver care safely and efficiently.

Multiple perspectives are necessary to understand the causes of an event and to understand what the system normally operates like.

By taking these issues into consideration and adopting a systems view to event analysis, the focus is widened to beyond individual performance and behaviours to identify any system failures. Any perceived error therefore becomes the starting point of the investigation and not the endpoint.

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Appendix 1: Development of the practice guide

The practice guide was developed through:

- a comprehensive review of the literature relating to mortality and morbidity meetings and theory on 'human factors', systems approaches and incident analysis^{17-19, 22, 25-29, 39, 42}
- a review of existing good practice guidance developed by professional bodies and Royal Colleges^{3, 12-14, 43}
- national survey of NHSScotland hospital consultant staff aimed at understanding current mortality and morbidity practices⁴⁴
- a 1-day stakeholder workshop with over 80 clinical leaders, frontline clinicians, clinical governance specialists and patient safety experts to explore and define what good practice should look like, and
- a national stakeholder consultation on a preliminary draft of the practice guidance document to gather and incorporate opinions and suggestions for improvement.

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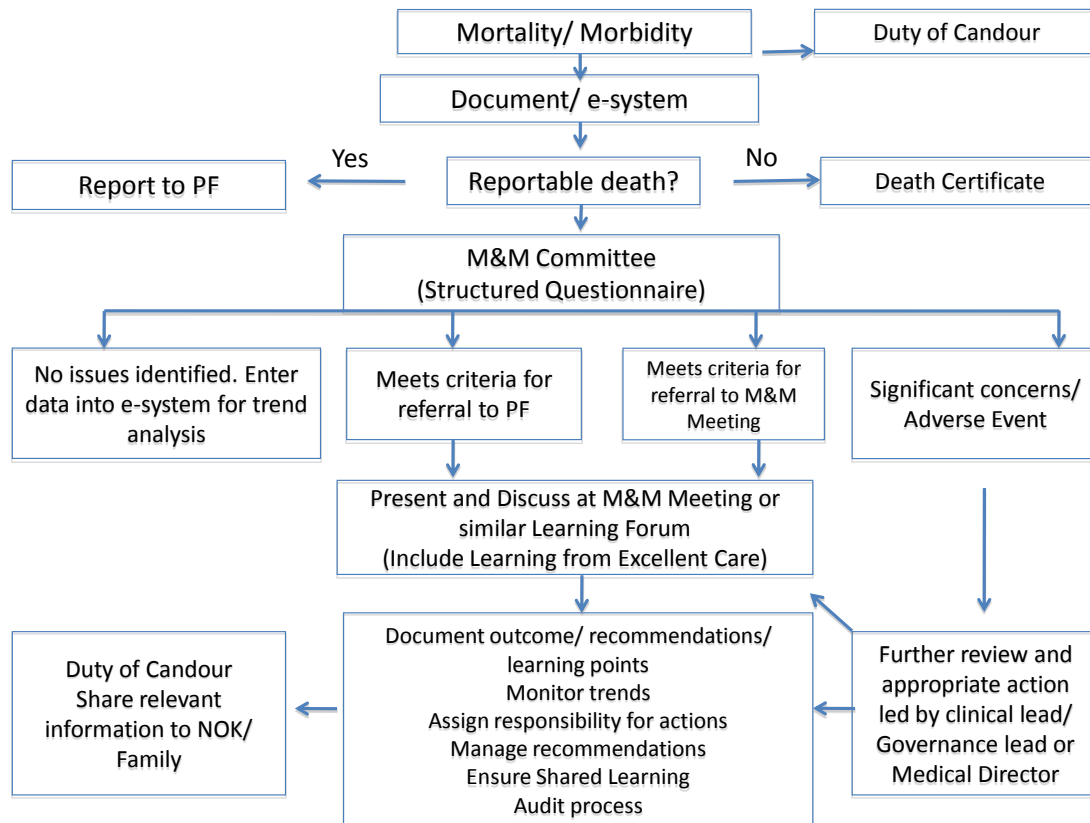
Peer review group

A group was convened to peer review the draft practice guide prior to consultation.

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Appendix 2: Example of a mortality and morbidity process or structure pathway for reporting and learning



Appendix 3: Examples of mortality and morbidity evaluation tools

Example 1: The adapted OM3 score

Department:			Date:		
Clinical / mortality and morbidity lead					
Understanding your current process Instructions: against each criteria identify the most appropriate statement for your current mortality and morbidity meetings, and enter the corresponding score in the final column.					
Criteria	0	1	2	3	Score
M&M meeting/activity frequency	None	Low (more than once per quarter)	Moderate (less than once per quarter)	Regularly (at least monthly)	
Method	-	No group learning (human/system factors not considered)	Group learning (human/system factors considered)	Group learning with facilitator trained/experience in human factors or quality improvement	
Case finding	-	Chart review / ad hoc	Multiple sources	Multiple sources & active surveillance (e.g. screening process)	
Case Selection		Fascinomas' (for example, unusual interesting cases but little learning regarding system and human factors)	Mix of fascinomas and appropriate cases	Appropriate (for example, cases that have system and human factor learning points which have potential to lead to QI)	
Case Analysis		Unstructured	Structured tool with no clear identification of cognitive or system issues	Structured tool includes cognitive and systemic issues	
Reach	No attendance	Poorly attended or involves few members	Well attended by clinicians	Well attended by clinicians, nursing and/or allied healthcare professionals	
Impact	No record/ dissemination	Some record of M&M meeting	Some dissemination (e.g. only to select sample of local team)	Well disseminated (e.g. to wider hospital team and governance structures)	
Outcomes	No actions	Ad hoc, individual basis	Clear action items identified at end of rounds	Actions forwarded to Quality committee, actioned and measured	
Total OM3 Score					

(adapted from Kwok et al <http://www.slideshare.net/PatientSafetyCanada/cpsi-virtual-poster-kwok-oct-22-2014>)

Example 2: Kirkpatrick's learning evaluation framework

Kirkpatrick's learning evaluation framework⁴² is used to evaluate the effectiveness of learning interventions within medical education. This may also guide mortality and morbidity process evaluation (see Table 3).

Table 3: Kirkpatrick's learning evaluation framework

Level	Area	Criteria
Level 4	Results	To what extent pre-determined outcomes occur as a result of participation in mortality and morbidity meetings and subsequent reinforcement of related good practice guiding principles?
Level 3	Behaviour	To what degree participants applied what they learned back on the job and the amount of learning transfer?
Level 2	Learning	To what degree participants acquire the intended knowledge, skills and attitudes, based on their participation in mortality and morbidity meetings?
Level 1	Reaction	To what degree mortality and morbidity participants react favourably to meetings, what they think and feel?

Collation of feedback on how the mortality and morbidity process is working at different levels of expected learning and improvement is essential to gauging success and what elements need to be tweaked or altered. The evaluation can also demonstrate the effectiveness of clinical governance arrangements and evidence of sharing learning more widely.

Example 3: Audit checklist

The checklist content can be adapted to periodically audit mortality and morbidity performance and impact, and directed related learning and improvements to this educational process.

Topic Area	Compliance (Yes/No)	Action	Completion/ Review Date
Attendance/structure			
Attendance record maintained			
Adequate levels of senior staff			
Adequate levels of trainees			
Adequate levels of other groups			
Meetings occur as scheduled			
Room is fit for purpose			
Meetings start and finish on time			
Chair			
A named Chair is in place			
Meeting is effectively chaired			
Meeting outcomes are disseminated			
Previous meeting noted reviewed			
Administrative support			
Dedicated support available			

Appendix 4: Example of mortality and morbidity record

SMMP M&M RECORD

(Minimum dataset)

Meeting Date: ____/____/____

Presenter: _____

Chair: _____

Attendees register attached: ☐

Patient Demographics

CHI:

Admission Date: ____/____/____

Date of Death if Applicable: ____/____/____

Admitting Consultant: _____

Other Consultants/Team Involved: _____

Situation

Category: ☐ Morbidity☐ MortalityDuty of Candour: ☐ Professional☐ Organisational

Background

☐ Emergency☐ Elective☐ Day Case☐ Outpatient

Primary Diagnosis: _____

Procedure(s): _____

Secondary Diagnosis: _____

Complication(s): _____

Relevant Medical History: _____

Learning Points to be Addressed (Details of Incident)

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Assessment

☐ Communication☐ Leadership☐ Decision making☐ Team working☐ End of life care☐ Patient factors☐ Technique☐ Medication Error☐ Recognition of critically unwell patient☐ Management☐ Staffing☐ Issue with escalation of care☐ Learning from Excellence☐ Specialty specific (See relevant form)

Lessons Learned

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Recommendation

Action Points

a) Action initiated to help mitigate future occurrence

Action	Assigned to	Completion Date

a) Action/ Measures taken to disseminate learning

Action	Assigned to	Completion Date

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