Position statement from the Statewide General Medicine Clinical Network (SGMCN)

Queensland Health seeks to ensure optimisation of quality and safety of clinical services delivered by all public hospitals. Clinical service networks are obliged, under their terms of reference, to develop, promote and evaluate standards of care relevant to their services. This position statement of the Statewide General Medicine Clinical Services Network (SGMCN) outlines evidence-based recommendations for optimising quality and safety of care provided by general medicine services.

The statement focuses on the overall organisation of care and generic requirements of high quality patient care, rather than diagnosis and management of specific clinical conditions. The recommendations contained herein can be used to: 1) inform service design and operations; 2) generate performance indicators for purposes of identifying target areas for service improvement and/or quality and safety improvement interventions; 3) facilitate benchmarking across general medicine services; 4) identify deficits and shortfalls which require additional resources and support to remedy; and 5) encourage research into areas of practice where recommendations are graded as weak because of limited or poor quality evidence.

Methodology: The draft recommendations were compiled by Associate Professor Ian Scott on the basis of evidence derived from an iterative search of publications in PubMed between 1990 and 2017, using terms pertaining to hospital-based general medical practice and specific topics. Articles (including reviews) were selected on the basis of their focus on, and relevance to, general medicine wards and clinics. As most general medicine services will have a majority of older patients, emphasis has been given to formulating recommendations targeting this population.

Recommendations are grouped into two themes: standardisation and organisation of care and interdisciplinary communication, collaboration and composition. The former group are listed in temporal order reflecting the patient trajectory from admission to discharge to aftercare. The two themes are not mutually exclusive and there is a degree of interdependence. The recommendations are graded in strength (strong vs weak) according to the GRADE system of evidence quality, balance of benefits vs harms, presumed patient preference and efficient use of resources.[1] The strong recommendations are listed below as a separate summary.

The draft position statement was reviewed by all members of the SGMCN executive committee and all members of SGMCN, including all directors of general medicine throughout Queensland. Further changes and additional recommendations were made in response to feedback received. The final version was endorsed by the SGMCN executive committee on 12/12/17.

Summary of recommendations graded as strong

- Establish acute medical assessment units (or equivalent) supervised by general physicians in hospitals with more than 200 beds.
- Direct eligible patients with acute presentations to ambulatory care units (ACU), hospital in the home (HITH) programs, outreach services and other non-inpatient care settings wherever possible.
- Ensure all patients likely to require admission to inpatient units from emergency departments (ED) are promptly reviewed by admitting teams and admission and disposition decisions are made in a timely manner, preferably within 4 hours of presentation.
- Ensure face to face consultant review of all new patients within 24 hours of admission and finalisation of a management plan.

- Use validated clinical protocols, pathways and decision rules for patients presenting with commonly encountered symptoms or clinical syndromes.
- Avoid inappropriate over-investigation and over-treatment which may actually cause patient harm.
- Ensure newly admitted older patients are subject to comprehensive assessment of their physical, mental and social functioning and needs.
- Assess all older patients for their level of frailty using a validated assessment tool and target care that minimises deconditioning and loss of function.
- Implement standardised risk assessment and care plans/bundles that identify and manage older patients experiencing, or at risk of, adverse nosocomial events.
- Ensure infection management and control practices are implemented which minimise adverse events from unrecognised or undertreated sepsis and transmission of infectious organisms.
- Ensure all patients at risk of clinical deterioration have acute resuscitation plans (ARPs) completed as soon as possible after admissions and within 48 hours.
- Target advance care planning (ACP) to patients who have a predicted life expectancy of less than 12 months.
- Seek advice and assistance from palliative care teams for terminally ill patients with refractory symptoms or those who would benefit from early referral to hospice care or palliative care community outreach services.
- Undertake review of medication list of patients receiving 8 or more chronic medications and deprescribe where appropriate.
- Establish peri-discharge programs of transitional care that optimise patient and carer understanding and self-management of their conditions and reduces the risk of adverse events, non-adherence and unplanned readmissions.
- Ensure all discharge summaries are sent to all external care providers within 72 hours of discharge (preferably same day) and contain all essential information they need to safely and effectively continue patient management.
- Substitute e-consultations and telehealth for face-to-face consultations where possible.
- Generate outpatient letters to GPs and other care providers using structured templates which ensure transmission of all essential information.
- Implement structured clinical handover between shifts, both within and between disciplines.
- Define and ensure minimum staffing levels and staff: patient ratios depending on volume and complexity of casemix.
- In multidisciplinary forums, undertake regular quality and safety reviews of all deaths, serious incidents, serious ‘near misses,’ and nominated quality and safety indicators.
- Undertake consultant to consultant discussions (either face to face or via teleconference) in cases where optimal patient care involving multiple specialty teams requires timely decision-making.
- Formulate a set of performance and outcome measures, at both department and consultant unit level, which are regularly reported to, and discussed with, all staff.

1. Standardisation and organisation of care

Initial admission

1.1 Establish referral procedures and admission criteria which clearly define clinical presentations and patient populations eligible to receive care from general physicians. GRADE: Weak recommendation.

The clinical presentations or syndromes that should be referred to, or admitted under, general medicine units need to be defined, in collaboration with subspecialists, in order to minimise confusion for junior medical staff and to maximise quality and safety of patient care. While specific populations, such as younger patients with acute myocardial infarction, are best managed by cardiologists, older patients with multi-morbidity are better managed by general physicians, with less overuse of care.[2] Much of the literature favouring sub-specialist care for specific conditions is subject to bias.[3] Recent evidence suggest comparable quality of care is provided by either geriatricians or general physicians in regards to acute care of older populations.[4] While more remote studies (published before 1990) of acute geriatric units led by geriatricians appear to confer benefits in the longer term in regards to falls risk and functional decline,[5] more recent studies suggest attenuation of this benefit as 'usual care' has incorporated many of the principles and practices of geriatric care. Ill-defined admitting guidelines which rely on idiosyncratic preferences of individual emergency physicians or general practitioners should be avoided.

1.2 Establish acute medical assessment units (or equivalent) supervised by general physicians in hospitals with more than 200 beds. GRADE: Strong recommendation.

Systematic reviews of observational studies have shown such units lower all-cause mortality and length of stay of patients presenting with acute medical problems and who do not require direct admission to specialised care units (i.e. CCU, ICU, dialysis unit, high dependency units).[6,7] Different modes of operation will apply (all-comer or selected patients, dedicated units separate from inpatient units or blended units, variable duration of permissible length of stay) according to local needs and culture. Further guidance on these units can be found at: https://www.imsanz.org.au/resources/standards-for-mapu-in-public-and-private-hospitals and https://www.health.qld.gov.au/__data/assets/pdf_file/0028/430597/mapunits.pdf.

1.3 Direct eligible patients with acute presentations to ambulatory care units (ACU), hospital in the home (HITH) programs, outreach services and other non-inpatient care settings wherever possible. GRADE: Strong recommendation.

Evidence is accumulating that acute care provided to eligible patients in non-inpatient settings such as ACUs,[8,9,10] HITH programs,[11,12,13] and outreach programs,[14,15,16] is of equivalent quality and safety, yielding equivalent clinical outcomes, at equivalent or lower cost, and associated with better patient experience. These forms of substitutive hospital care also assist to reduce demand for inpatient beds and may allow avoidance of up to 30% of acute hospital admissions.[8,9] Eligibility criteria and referral procedures should be formulated in collaboration with emergency and specialty physicians. Ideally, at each hospital, these ambulatory care programs should be under the supervision of a dedicated general physician.

1.4 Ensure all patients likely to require admission to inpatient units from emergency departments (ED) are promptly reviewed by admitting teams and admission and disposition decisions are made in a timely manner, preferably within 4 hours of presentation. GRADE: Strong recommendation.

Studies show that the longer patients spend in ED, the more likely they will incur longer hospital stays and higher in-hospital mortality.[17,18] Older patients with less urgent triage categories are more likely to spend more time in ED awaiting decisions to admit.[19,20] Evidence suggests that a target of 80% of all patients and 60% of admitted patients exiting ED at 4 hours is associated with lowest risk-adjusted in-hospital mortality rate.[21] Older patients, especially those admitted after hours and with acute cardiorespiratory illnesses, derive greatest benefit from timely

management and onward transfer to inpatient wards.[22]

1.5 Ensure face to face consultant review of all new patients within 24 hours of admission and finalisation of a management plan. GRADE: Strong recommendation.

Delays in review of acutely ill patients by senior clinicians may result in inappropriate management decisions made by more inexperienced junior staff which impact adversely on patient outcomes, prolong hospitals stays and incur ordering of unnecessary tests, treatments and consultations.

Inpatient care

1.6 Use validated clinical protocols, pathways and decision rules for patients presenting with commonly encountered symptoms or clinical syndromes. GRADE: Strong recommendation.

Patients with common presentations such as chest pain,[23] fits/falls/faints/funny turns (dizziness, vertigo),[24] syncope,[25] suspected PTE,[26,27] gastrointestinal bleeding, palpitations,[28] cellulitis,[29,30,31] sepsis,[32] and metastatic malignancy with unknown primary[33] should be managed using protocols that define key decision points, are easy to apply, and identify low risk patients who do not require inpatient care. Examples of such protocols are listed in **appendix 1 (p. 16)**. The evidence for pathways directed at more multi-faceted clinical problems such as end of life care[34] or older multi-morbid patients with undifferentiated syndrome is less certain.

1.7 Undertake daily ward or board rounds or patient list debriefings of all admitted patients (with face to face review as clinically indicated). GRADE: Weak recommendation.

Evidence suggests that daily [35] or even twice-daily[36,37] consultant ward rounds reduce length of stay and overuse of investigations and medications. Daily consultant-led ward rounds in MAPUs have been shown to reduce mortality.[38] However, daily rounds including week-ends may be impractical in most hospitals but, at a minimum, consultants (including those on week-end rosters) should liaise with their registrars on a daily basis, and consider twice daily rounds during admission on-take and post-take days.

1.8 Ensure continuity of care by minimising the number of medical teams providing care to the patient, from ED presentation to discharge to clinic follow-up. GRADE: Weak recommendation.

Having multiple medical teams intervene at various stages of the admission fragments patient care, entails more handovers leading to errors and loss of efficiency with prolonged length of stay, predisposes to duplication and overuse of investigations,[39] confuses patients and relatives, and increases risk of readmission. [40,41] Ideally one medical team should assume primary responsibility for care throughout the entire patient journey.

1.9 Avoid inappropriate over-investigation and over-treatment which may actually cause patient harm. GRADE: Strong recommendation.

Unnecessary overuse of expensive health care is a significant but under-appreciated problem.[42] Studies have highlighted the dangers of rigid adherence to multiple, disease-specific guidelines in older patients in the absence of a nuanced consideration of benefits and harms for the individual patient.[43,44] Excessive phlebotomy can lead to hospital-acquired anaemia, increased costs, and unnecessary downstream testing and procedures.[45] The aim should be to provide minimally disruptive care by restricting use of interventions that are of little or no benefit, or could even cause harm or impose treatment burden on patients with limited capacities.[46] The list of do-not-do-routinely interventions compiled by the different specialty societies, including IMSANZ, under the banner of the RACP EVOLVE and NPS Choosing Wisely initiatives should be promulgated to all medical staff (lists available at: http://www.choosingwisely.org.au) . Those most relevant to general medicine are listed in **appendix 2 (p.31)**. Education programs, audit

and feedback on clinical practices, and electronically-enabled decision support and restrictive ordering may assist in reducing unwarranted interventions.

1.10 Implement checklists in association with daily rounds (ward or 'board' rounds) that ensure actions relating to optimising patient safety are being undertaken. GRADE: Weak recommendation.

Checklists have been shown to improve patient safety in various disciplines such as intensive care units, operating theatres and surgical wards.[47,48] While fewer checklists exist for general medical wards and evidence of effect is less robust,[49,50] a prima facie case can be made regarding the benefits of checklists that target patients: 1) about to be discharged (discharge readiness); 2) about to undergo invasive investigations or procedures (fasting and consent status, hydration and transfusion need, anaesthetic review); 3) at risk of hospital acquired complications (see 1.9) from IV cannulae, IDCs, nasogastric tubes or other devices that may no longer be necessary and should be removed; or 4) in need of VTE prophylaxis.

1.11 Ensure newly admitted older patients are subject to comprehensive assessment of their physical, mental and social functioning and needs. GRADE: Strong recommendation.

Evidence strongly suggests that comprehensive geriatric assessment (CGA) early in the admission of older patients lowers risk of institutionalisation and increases probability of being discharged alive and living at home. Effects on mortality, length of stay and functional dependence are less certain. [51] Critical elements are: 1) deployment of appropriately trained clinicians (doctors, nurse and/or allied health assessors) using validated assessment instruments[52,53] in undertaking assessments on all eligible patients; and 2) ensuring clinical actions are systematically undertaken in response to identified deficits, risks or needs.[54] Evidence that CGA is effective in patients with short (<4 days) hospital stays is mixed,[55] so the focus should be on longer stay patients. For patients being discharged from ED, CGA in ED may reduce functional decline and lower ED readmissions.[56] For patients presenting to ED who may require admission, CGA in ED may reduce admission rates but does not appear to affect length of stay or readmissions of admitted patients. [57]

1.12 Assess all older patients for their level of frailty using a validated assessment tool and target care that minimises deconditioning and loss of function. GRADE: Strong recommendation.

Frailty is a predictor of adverse events, longer hospital stays and readmission.[58] A validated easy to apply frailty scale (**appendix 3, p.37**). should be applied at the time of admission and multi-disciplinary care targeted to prevent deconditioning, encourage mobilisation and support their recovery and rehabilitation.[59] Patients identified as frail should undergo early CGA by appropriately trained clinicians, receive a detailed management plan that promotes early ambulation and feeding to avoid deconditioning, undergo comprehensive medication review and advance care planning (see below), and receive formal rehabilitation (if appropriate) to optimise function.[60,61] Frail patients are at high risk of 'post-hospital syndrome,' a transient state of heightened vulnerability following hospitalisation associated with increased risk of functional decline, adverse events and readmission,[62] which may be mitigated by optimising resilience while in hospital and ensuring good transition of care to home (see below).

1.13 Implement standardised risk assessment and care plans/bundles that identify and manage older patients experiencing, or at risk of, adverse nosocomial events. GRADE: Strong recommendation.

Irrespective of whether CGA is performed on all older patients, all should be assessed, as a minimum, for cognitive impairment.[63] Up to 60% of older patients suffer acute geriatric syndromes while in hospital,[64] a situation which demands the systematic implementation of preventive strategies which may not exist currently.[65] Prophylactic ***c***are bundles should be proactively targeted to all at-risk older patients, especially those with cognitive impairment, with the aim of preventing or reducing incidence of delirium, [66] depression,[67] falls and decline in mobility,[68] malnutrition,[69,70,71] dehydration,[72,73] pressure sores,[74] aspiration,[75,76,77] urinary tract

infections, [78] nosocomial diarrhoea,[79] VTE (in selected patients),[80] functional decline,[81,82] and 'failure to thrive.'[83,84] Various care bundles aimed at reducing the incidence of geriatric syndromes in hospital are listed in **appendix 4 (p. 38)**. Evidence suggests care bundles delivered in an environment of interdisciplinary collaboration can help reduce the incidence of these adverse events.[85]

1.14 Ensure infection management and control practices are implemented which minimise adverse events from unrecognised or undertreated sepsis and transmission of infectious organisms. GRADE: Strong recommendation

Infection continues to be a major cause of death and disability in older populations, more so with advent of multi-resistant organisms (MROs) and *C. difficile*.[86] Studies show that delays in diagnosis and early initiation of appropriate antibiotic therapy are contributory causes.[87] Transmission of infectious organisms pose risk to other patients and MRO outbreaks can cause closure of wards. Early consultation with infectious disease consultants in case of serious infections (e.g. Staph aureus bacteraemia) should be undertaken. Intravenous cannulae, central lines, and indwelling urinary catheters should be monitored and removed when no longer required. Infection control practices such as hand hygiene should be closely adhered to.[88] Antibiotic prescribing guidelines should be developed that minimise overuse of broad spectrum antibiotics coupled with education programs, audits and feedback, and reminders.[89]

1.15 Cohort patients presenting with, or assessed as being at high risk of, falls, delirium and disruptive behavioural problems in dedicated areas staffed by suitably trained nurses and allied health professionals. GRADE: Weak recommendation.

Evidence is emerging that patients with major falls risk, delirium or disruptive behavioural and psychological symptoms of dementia receive better care and have better outcomes if they are cohorted in units or beds which are physically designed to allow environmental cueing, and staffed by nurses specifically trained to care for these patients, [90,91,92] using appropriate assessment instruments[93] and management protocols.

1.16 Use validated risk calculators and prediction rules in estimating disease probability, benefits and harms of individual therapies, or prognosis. GRADE: Weak recommendation.

Clinicians often over-estimate benefits and under-estimate harms in relation to tests and treatments.[94] Evidence (admittedly mostly in general practice) suggests that estimates of disease probability, net intervention benefit and life expectancy can be rendered more accurate if clinicians complement clinical judgement with decision supports. [95,96] A list of prediction rules commonly used in general medicine are provided in **appendix 5 (p. 43)**. A more complete list of prediction rules can be found at these websites: http://farmacologiaclinica.info/scales/ and http://www.clinicalprediction.com/prediction-rules.

1.17 Establish, and ensure adherence to, early warning of patient deterioration systems and monitor breaches in activation of rapid response teams (RRTs) and other failures to rescue. GRADE: Weak recommendation.

Hospitalised patients, especially those with advanced disease, are at high risk of rapid deterioration and their risk of cardiac arrest and possibly death may be reduced if physiological decompensation is detected early and appropriate remedial responses initiated in a timely manner. The effectiveness of RRTs in reducing preventable in-hospital mortality in adult hospitals remains unclear,[97] as systematic reviews reporting reduced mortality and non-ICU cardiac arrests[98,99] based on pooled data rely on pre-post observational studies yielding mixed results, and benefits seem to be concentrated in paediatric and surgical patients, not medical patients. However, it is accepted that reliance alone on nursing decisions to call for medical assistance from treating teams, and for that call to be responded to, may not be sufficient to guarantee timely access to urgent intervention when needed.[100] Failure to appreciate clinical urgency, failure to seek advice, lack of knowledge and lack of supervision contribute to patients experiencing greater risk of adverse outcomes in response to clinical deterioration.[101]

1.18 Ensure all patients at risk of clinical deterioration have acute resuscitation plans (ARPs) completed as soon as possible after admissions and within 48 hours. GRADE: Strong recommendation.

Patients with advanced disease or severe acute illness are likely to have poor outcomes after cardiopulmonary arrest. Such patients need to have ceilings of care recorded in ARPs to ensure the actions of after-hours staff and RRTs are appropriate in the event of an arrest or sudden deterioration. Studies show that eligible patients frequently do not have an ARP in place which causes resuscitation efforts to default to 'all out.'[102]

1.19 Target advance care planning (ACP) to patients who have a predicted life expectancy of less than 12 months. GRADE: Strong recommendation.

Extensive research has shown that ACP and its emphasis on shared decision-making lessens patient and family anxiety around future care choices, lowers the risk of unwanted interventions and resuscitation, improves quality of life and reduces hospitalisations.[103,104,105] The essential steps of ACP are outlined in **appendix 6 (p. 46)**. ACP also facilitates completion of acute resuscitation plans (ARPs) and advance health directives (AHDs), the former constituting mandated clinical orders for all patients at risk of sudden deterioration. ACP forms (e.g. Statement of choices) are more patient-friendly, less legalistic, more flexible and holistic, open to iterative change and capable of informing management plans. Copies of these forms and other ACP resource materials can be found at: www.mycaremychoices.com.au and https://www.qld.gov.au/health/support/end-of-life/advanced-care-planning. Current decision aids are of limited value in older patients with advanced or terminal illness[106] and therefore nuanced face-to-face conversation between care providers and patients and family are required.[107]

1.20 Seek advice and assistance from palliative care teams for terminally ill patients with refractory symptoms or those who would benefit from early referral to hospice care or palliative care community outreach services. GRADE: Strong recommendation.

Studies show that one in three patients with terminal illness receive non-beneficial interventions[108] and at least half die in hospital.[109] Clinical trials and observational studies how that early involvement of palliative care teams improve patients' symptoms and quality of life, reduce instances of aggressive or invasive care, lower hospital costs, and increase numbers of patients receiving community-based palliative care support and dying at home.[110,111,112,113]

1.21 Undertake review of medication list of patients receiving 8 or more chronic medications and deprescribe where appropriate. GRADE: Strong recommendation.

Inappropriate polypharmacy poses significant health risks and burden on older patients with multi-morbidity. Randomised trials and observational studies confirm that a patient-centric approach to withdrawing unnecessary medication is safe and improves quality of life, all-cause mortality and unplanned readmissions.[114,115,116,117] Systematic reviews have disclosed effective interventions for deprescribing drugs such as benzodiazepines,[118] and various deprescribing guidelines for specific drug classes have been published [119] or made available on various websites: http://deprescribing.org/; http://www.bpac.org.nz/BPJ/2010/April/stopguide.aspx; (http://www.primaryhealthtas.com.au/resources/deprescribing). Structured deprescribing guides[120] and web-based tools are also available for assessing appropriateness of medication regimens and assisting clinicians in deprescribing (http://medstopper.com/; http://www.polypharmacy.scot.nhs.uk/). A systematic approach to deprescribing that can be applied to the whole medication regimen has been developed by the Australian Deprescribing Network (**appendix 7, p. 47**).[121,122] Participation of clinical pharmacists on ward rounds and in multidisciplinary team meetings helps to improve quality of prescribing and reduce adverse events. [123,124]

Pre-discharge care and care transitions

1.22 Implement discharge planning aimed at identifying and remediating potential barriers to discharge early in the admission. GRADE: Weak recommendation.

Most patients prefer to be home as soon as possible, hospital environments are hazardous to most older patients, and bed pressures demand as short a hospital stay as is safely possible. Reducing length of hospital stays decreases infection risk,[125] complications and mortality[126] and has an impact on clinical outcomes.[127] Discharge can be delayed by poor communication between staff and with patients, waits for test results, procedures or consults, slowness in preparing patients and family for discharge, and lack of standardisation of discharge processes.[128] Discharge plans which are tailored to the needs of individual patients can reduce hospital stays, improve patient satisfaction, and reduce readmissions.[129]

1.23 Identify and classify patients who are no longer in need of acute care and proactively manage and escalate barriers preventing hospital discharge or transfer to alternative care settings. GRADE: Weak recommendation.

1 in 14 general medical beds throughout Queensland hospitals are occupied by non-acute patients who can incur hospital stays lasting weeks to months. Reasons why these 'stranded' patients remain in hospital and what is being done to circumvent discharge barriers must be systematically collected and periodically reviewed, with escalation to senior managers in cases where delays are beyond the best efforts of hospital staff (e.g. waits for external agency decisions, patient/family refusal of alternative care, lack of rehabilitation/hospice beds, etc).[130] Simulation studies suggest that reducing LOS of long stay patients to 3 weeks would have the same effect in reducing hospital bed occupancy as reducing all overnight admissions by 12 hours.[131]

1.24 Establish peri-discharge programs of transitional care that optimise patient and carer understanding and self-management of their conditions and reduces the risk of adverse events, non-adherence and unplanned readmissions. GRADE: Strong recommendation.

Conventional discharge planning has been shown to be beneficial in older patient care.[132] However, multiple reviews[133,134,135,136,137,138] suggests peri-discharge transitional care programs are even more effective and should comprise: 1) pre-discharge phase that comprises assessment of a patient's readmission risk and understanding of their diagnoses and management; education, counselling and support of patients and, importantly, care-givers[139] (ideally provided by a nurse coach or navigator with whom they have developed trust and rapport); medication reconciliation; and formulation of written management plans and medication lists, and 2) post-discharge phase with outreach phone calls and/or home visits to patients aimed at identifying and solving problems with clinic appointments, medication adherence and self-management. Such multi-faceted interventions have been shown to reduce mortality, readmissions and emergency department visits by up to 25%.

1.25 Ensure patients at high risk of readmission and who need specialist follow-up are seen within 2 weeks of hospital discharge. GRADE: Weak recommendation.

Evidence shows that patients with recent acute exacerbations of advanced chronic diseases are more likely to be readmitted and suffer more adverse events if they are not reviewed shortly (within 2 weeks) after discharge.[140]

1.26 Ensure all discharge summaries are sent to all external care providers within 72 hours of discharge (preferably same day) and contain all essential information they need to safely and effectively continue patient management. GRADE: Strong recommendation.

Studies have identified key information fields within summaries necessary for safe patient care:[141,142] GP details, name and contact details of treating consultant, primary discharge diagnosis(es), major investigations, interventions and consultations performed during hospital stay, medication list at discharge (including any changes to medications and reasons why), newly identified patient allergies, key communications to patients (e.g. advance care plans), specific instructions or requests to GPs regarding post-discharge management, and follow-up arrangements with hospital services. Studies have also shown delays in issuing of discharge

summaries compromise patient safety and increases risk of readmission.[143,144,145] Regular audits should be undertaken of the quality and timing of discharge summaries with feedback to junior medical staff.[146]

Outpatient care

1.27 Optimise efficiency of outpatient clinics by triaging appropriately, gathering essential information prior to appointments, and minimising did not attend rates. GRADE: Weak recommendation.

Studies have shown patients inappropriately triaged for urgency because of absence of information on presumptive diagnosis, symptom duration, and documentation of important physical findings and investigation results in referral letters.[147] Vetting referral letters and rejecting those lacking a sufficiently minimum dataset helps to maximise productivity of the appointment. Missed appointments waste clinic slots and strategies should be implemented that aim to minimise did not attend rates, such as telephone and SMS text reminders. These should be directed at patients at high risk of non-attendance: younger or older age, multiple morbidity, longer time between referral and date of appointment, appointments scheduled late in the day or on specific work-days, and history of nonattendance.[148] Strategies to offset missed appointments include predictive overbooking based on individual patient characteristics and not reappointing patients who have previously missed appointments.[149]

1.28 Reduce clinic waiting lists by discharging patients back to GPs if appropriate. GRADE: Weak recommendation.

Timely access to specialist care improves patient outcomes, but in achieving this waiting lists need to be kept as short as possible. A recent systematic review proposes 26 strategies for reducing wait lists which are summarised in **appendix 8 (p. 49)**.[150] The new to review patient ratio should be no greater than 1 to 4 and preferably 1 to 2. Review patients should be discharged back to GPs as soon as they are in a stable condition and requiring no further changes in management that only a specialist can enact.[151]

1.29 Substitute e-consultations and telehealth for face-to-face consultations where possible. GRADE: Strong recommendation.

New patient referrals should also be scrutinised for opportunities to convert a face to face consultation to an e-consultation to the referring GP (in cases involving a relatively simple problem or giving of advice) or arranging a telehealth consultation with the patient at a telehealth-enabled facility closer to where they live. Both strategies reduce turn-around times, deliver greater patient and GP satisfaction, and lower did not attend rates.[152,153]

1.30 Generate outpatient letters to GPs and other care providers using structured templates which ensure transmission of all essential information. GRADE: Strong recommendation.

Audits of specialist outpatient letters have revealed deficits in key information such as provisional diagnosis(es), rationale for investigations or treatments, contingency plans for deterioration, prognosis and follow-up arrangements, and assessment of patient understanding and likely adherence. [154] Use of structured templates helps ensure these pieces of vital information are consistently contained within outpatient letters.[155]

2. Interdisciplinary communication, collaboration and composition

2.1. Conduct ward rounds comprising, at a minimum, consultant, registrar and resident medical officer, senior ward nurse and pharmacist. GRADE: Weak recommendation.

Evidence suggests the composition of such rounds enhances communication, improves efficiency of care, reduces prescribing errors, and reduces length of stay.[156] Nurses provide the hub of patient care, and their involvement in the daily bedside clinical review is central to the effectiveness of the ward round. An organised and disciplined approach to ward rounds, with appropriate preparation, scheduling and review, improves patient safety and experience, while promoting efficient use of time and resources.

2.2. Institute regular multidisciplinary meetings which review patient progress, share opinions, exchange information and establish goals of care. GRADE: Weak recommendation.

Some studies suggest such meetings (which will vary in frequency, location, and team composition) decrease length of stay, reduce mortality, and improve teamwork and collaboration.[157,158] Greater interprofessional collaboration has potential to improve clinical processes and outcomes,[159] although a recent systematic review failed to show any consistent benefits across a range of interdisciplinary interventions in general medical wards.[160] Meetings may be sit-down at work-stations, stand-up at journey boards, or at the bedside. Which format works best is unclear and structured interdisciplinary bedside rounds (SIBR) have yet to prove their superiority over more truncated meetings.[161,162163] Expert opinion recommends that any meeting should be on a daily basis.

2.3. Deliver unit-based care whereby patients admitted to a specific consultant unit are managed by a constant, single team of nurses and allied health professionals. GRADE: Weak recommendation.

In contrast to ward –based care, in which nursing and allied health staff are organised around a specific ward regardless of which medical unit patients are admitted to, delivering unit-based care improves communication, productivity and work flow.[164,165]

2.4. Minimise the number of general medicine patients outlied in non-home wards and ensure those that need to be outlied are closely monitored by the attending general medicine unit. GRADE: Weak recommendation

Evidence suggests that outlied patients are more at risk of adverse outcomes than those cared for in home wards,[166] especially if they suffer dementia or delirium.[167]

2.5. Implement structured clinical handover between shifts, both within and between disciplines. GRADE: Strong recommendation.

In the absence of adequate information provided to incoming teams at handovers, near misses and adverse events are much more likely. Ideal handover is face to face, at the patient's bedside, involving all relevant personnel, and with access to all relevant patient information (using digital platforms where possible).[168] This may not be practical and, as a minimum, use of a standardised form at the workstation or journeyboard and involving all key clinicians should be routine.[169] Electronic templates, especially those that auto-populate with accurate patient data, may be more efficient. Handover should prioritise acutely ill patients, limit discussion of inactive issues, avoid duplication of information in records, attract protected and paid time, and be free of interruptions. Clinical handover can also be used as a teaching and assessment exercise when supervised by senior clinicians. End of term clinical handover from outgoing to incoming junior staff is essential in minimising risk to patient care.[170]

2.6. Propose and communicate, where feasible, date of discharge and criteria for discharge to all relevant medical, nursing and allied health teams. GRADE: Weak recommendation.

Estimating a date of discharge (EDD) helps co-ordinate efforts of multidisciplinary teams

towards a common goal while giving patients and family a date for which they need to prepare for discharge. However, assigning an EDD to older patients with complex co-morbidities is often difficult, and is irrelevant for patients waiting nurse home placement or other destinations where timing of transfer cannot be predicted.[171] Criteria for safe discharge, especially after-hours and on week-ends,[172] should also be stated where necessary in ensuring discharge is not unnecessarily delayed because of confusion or uncertainty around patients' eligibility for discharge, especially where out-of-hours covering teams are concerned. Patients should be discharged from hospital wards or moved to discharge lounges/transition hubs at any time of day or week whenever safe and practical to do so.

2.7. Ensure adequate junior medical staffing levels and consultant supervision on week-ends and public holidays. GRADE: Weak recommendation.

Multiple studies suggest outcomes for patients admitted acutely on week-ends are worse than for those admitted on week-days ('week-end effect').[173,174,175] While the causes of this increased risk remain controversial, it is reasonable, on first principles, to ensure there is an appropriate level of medical cover and consultant supervision.

2.8. Define and ensure minimum staffing levels and staff: patient ratios depending on volume and complexity of casemix. GRADE: Strong recommendation.

The complexities of defining adequate staffing across different professional streams are such that each department will have to decide for itself what the minimum staffing levels should be. In principle, it is recommended that in order to optimise care and minimise in-patient mortality there be: 1) critical mass of well-trained expert nurses (>60% with bachelor degree);[176] 2) minimum 1 to 5 nurse: patient ratio at all times; 3) minimum one consultant and one registrar for every 15 inpatients; and 4) continuity of senior staff.[177,178] Demands on nursing staff in providing optimal care of older patients can be high and unpredictable and, in the course of meeting performance indicators around patient flow and budget integrity, this may result in constrained, suboptimal care reflected in lower ratings for nursing-sensitive indicators.[179]

2.9. In multidisciplinary forums, undertake regular quality and safety reviews of all deaths, serious incidents, serious 'near misses,' and nominated quality and safety indicators. GRADE: Strong recommendation.

Evidence suggests that a safety culture whereby all unit staff feel empowered to speak up about perceived deficiencies in patient care[180] and regularly review all adverse events or significant 'near misses'[181] helps disclose remediable errors or deficiencies in care that need to be systematically addressed. Mortality and morbidity conferences associated with standardized presentation of cases, recording of improvement initiatives, existence of an annual activity report, prior dissemination of meeting agendas, longer meeting duration, focused theme and thorough analysis of failures are more likely to lead to implementation of quality and safety improvement initiatives.[182]

2.10. Conduct regular surveys of patient experience pertaining to recent admissions which gauge the extent to which patients' and carers' needs have been addressed during the hospital stay. GRADE: Weak recommendation.

Research indicates there are opportunities for improving patient experience of hospital care relating to information sharing and decision-making, discharge planning, interpersonal skills and professionalism, emotional support, and the care environment.[183]

2.11. Establish regular departmental forums wherein medical staff (consultants, registrars, resident medical officers) can share and discuss challenging or problematic cases and issues ('clinical conundrums') for the purpose of optimising both individual patient care and departmental policies. GRADE: Weak recommendation.

Clinical practice often throws up difficult cases whose management is not addressed in current clinical guidelines.[184] While evidence is scarce for internal medicine practice, research in other

specialties such as oncology[185,186] indicate consistent professional satisfaction and reassurance gained from discussing difficult cases in open collegiate forums and eliciting second opinions.

2.12. Undertake consultant to consultant discussions (either face to face or via teleconference) in cases where optimal patient care involving multiple specialty teams requires timely decision-making. GRADE: Strong recommendation.

General medicine teams frequently care for patients with complex medical problems which require input and advice from other specialty teams. At times, different specialists can offer conflicting recommendations leading to uncertainty and delays in patient care on the part of the overseeing general physician. Such discordance in advice is best addressed by undertaking consultant to consultant discussions, at an early stage, aimed at forging consensus as to the most appropriate course of action.[187]

2.13. Establish regular meetings of clinical leadership teams within each department comprising senior medical, nursing and allied health staff. GRADE: Weak recommendation.

There needs to be a shared governance structure which promotes greater interdisciplinary collaboration and provides a forum for voicing and addressing issues – quality and safety, budget, policies and procedures - that impact on the functioning of the department as a whole. Meeting participants should include the medical director and any deputy, director of nursing and nurse unit managers, senior pharmacist, social worker, physiotherapist and occupational therapist.[188]

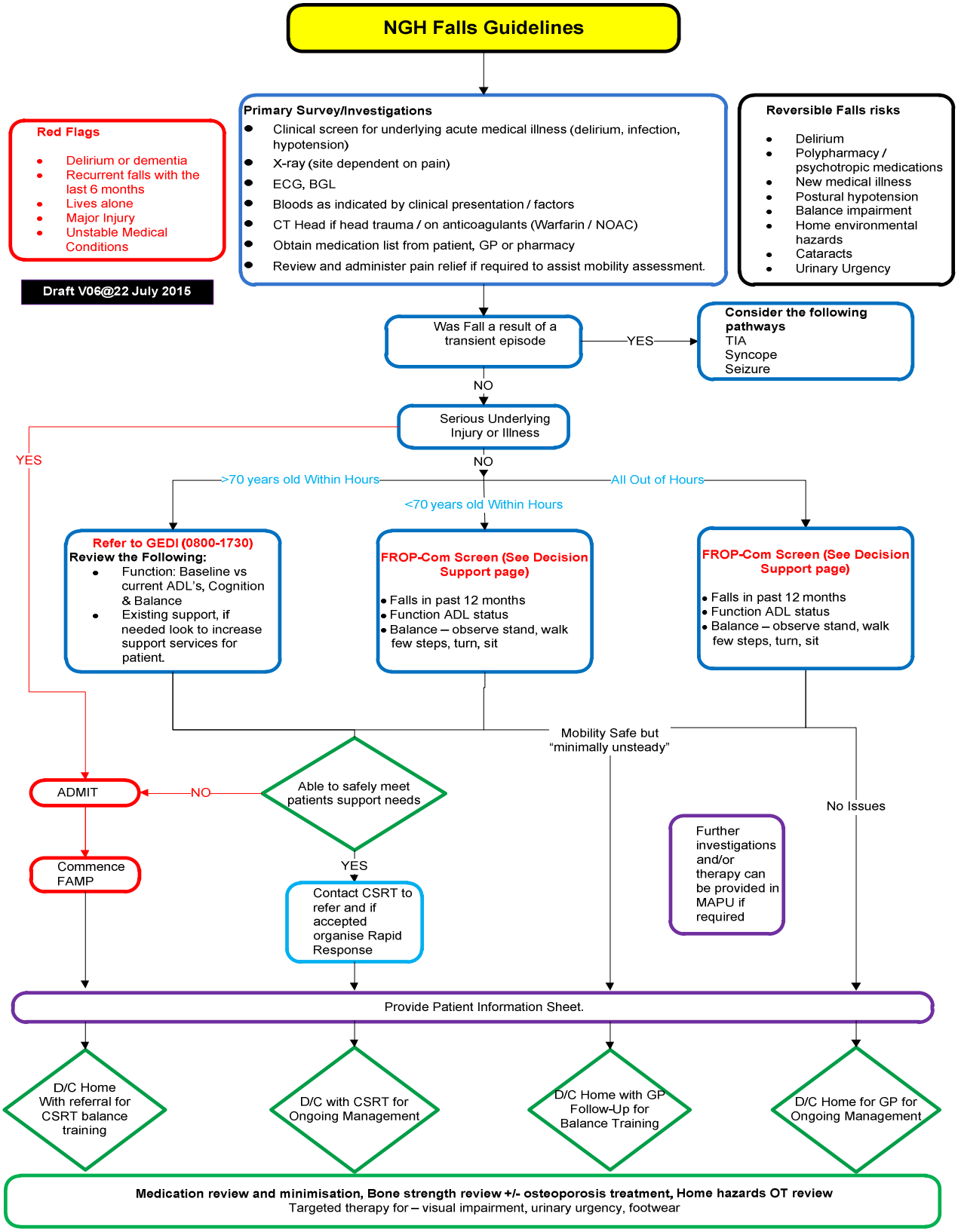
2.14. Formulate a set of performance and outcome measures, at both department and consultant unit level, which are regularly reported to, and discussed with, all staff. GRADE: Strong recommendation.

All staff should accept collective and individual responsibility for monitoring and improving performance of the service. Key metrics may include length of stay (LOS), in-patient mortality, readmission rates, complication rates, numbers of nurse specials, safety incidents, and diagnosis-specific process measures for high volume conditions. Some indicators such as mortality need to be nuanced given the higher proportion of older, multi-morbid patients and those receiving palliative care in general medicine services.[189] Evidence suggests regular feedback of these metrics reduces variations between consultant units and reduces overall LOS.[190]

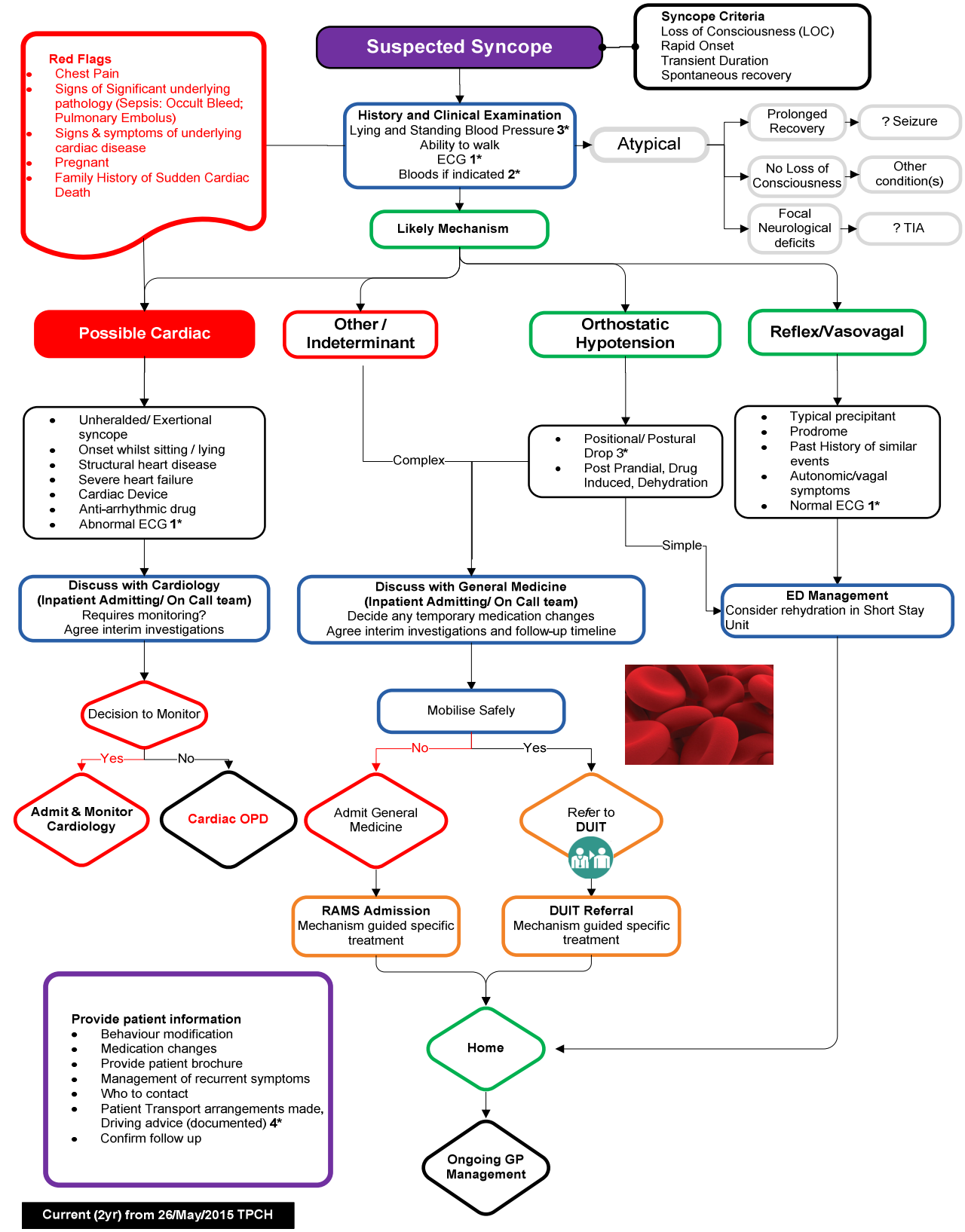
2.15. Develop specialised areas of expertise that are 'natural fits' for general medicine teams who can provide whole-of-patient care. GRADE: Weak recommendation.

General medicine teams, by virtue of their whole of patient care perspective not confined to one organ system or disease, are natural providers of care in certain niche areas. These include perioperative medicine, obstetric medicine, ambulatory care (e.g. hospital in the home, acute ambulatory care units, community-based clinics), clinical pharmacology, acute stroke medicine, alcohol and drug addiction, and aged care. Professional satisfaction and organisational kudos comes from providing specialised areas of expertise which every service should try to develop according to need, interest and available resources.

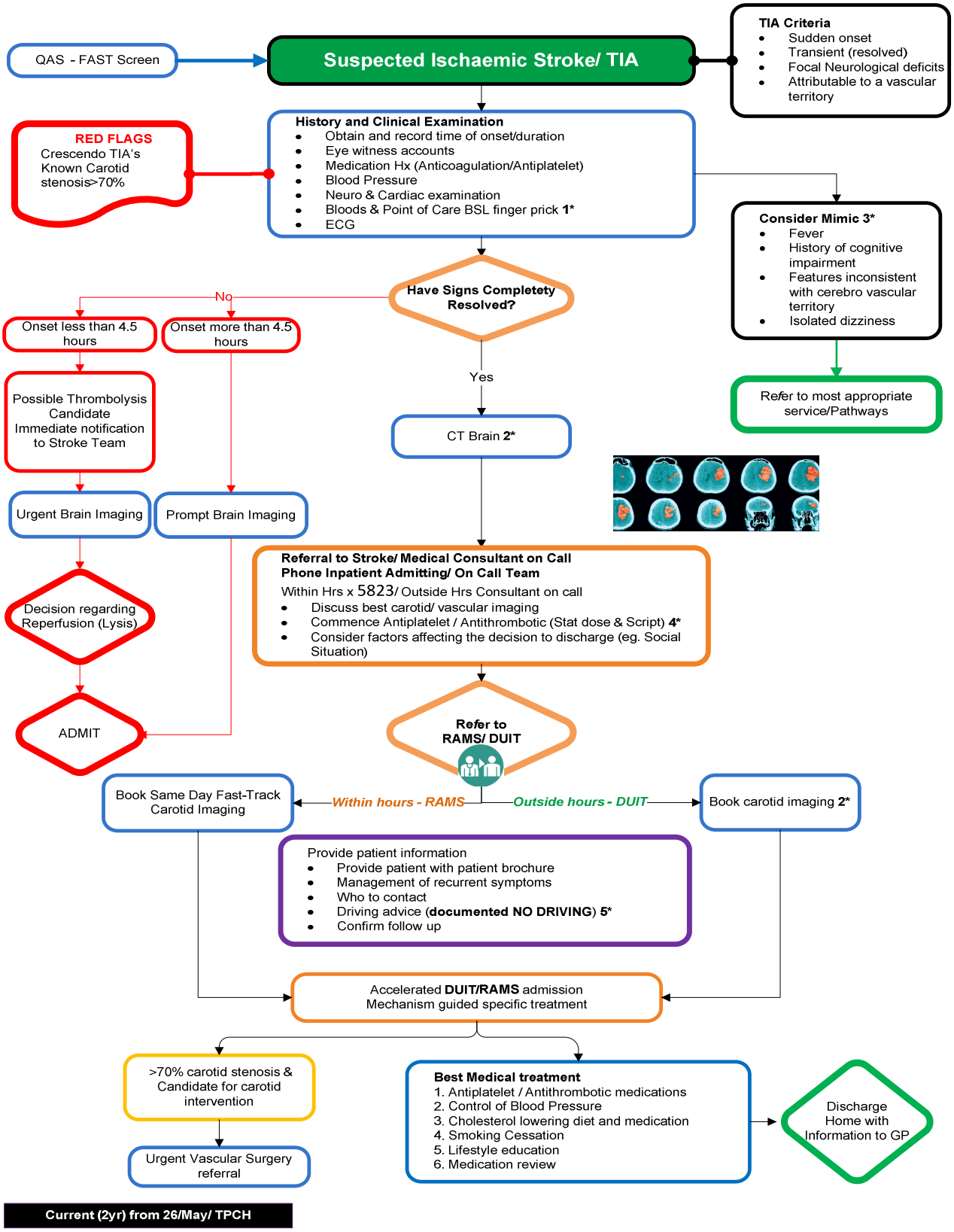
Appendix 1. Examples of care protocols for commonly encountered clinical presentations



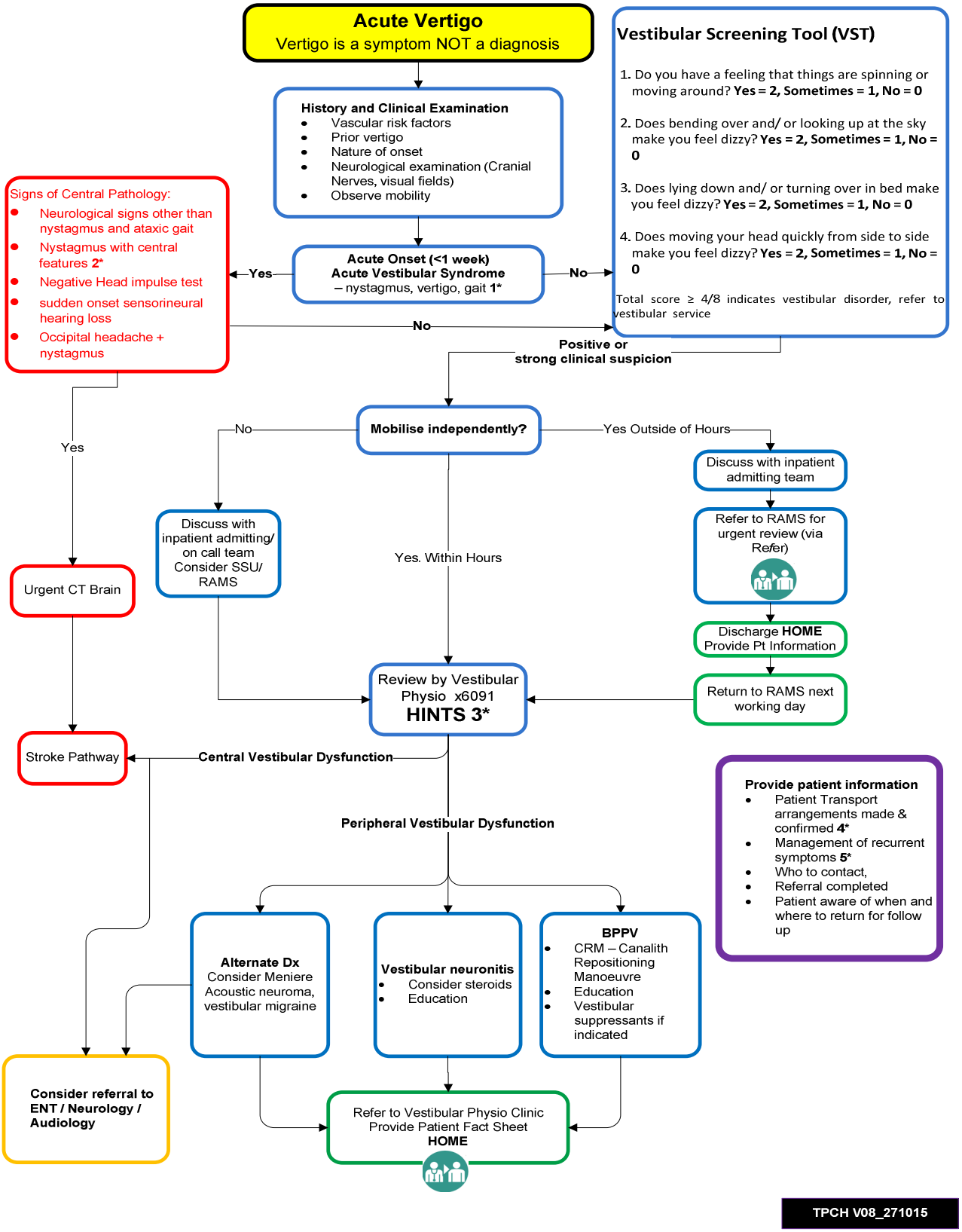
Nambour General Hospital Falls guideline



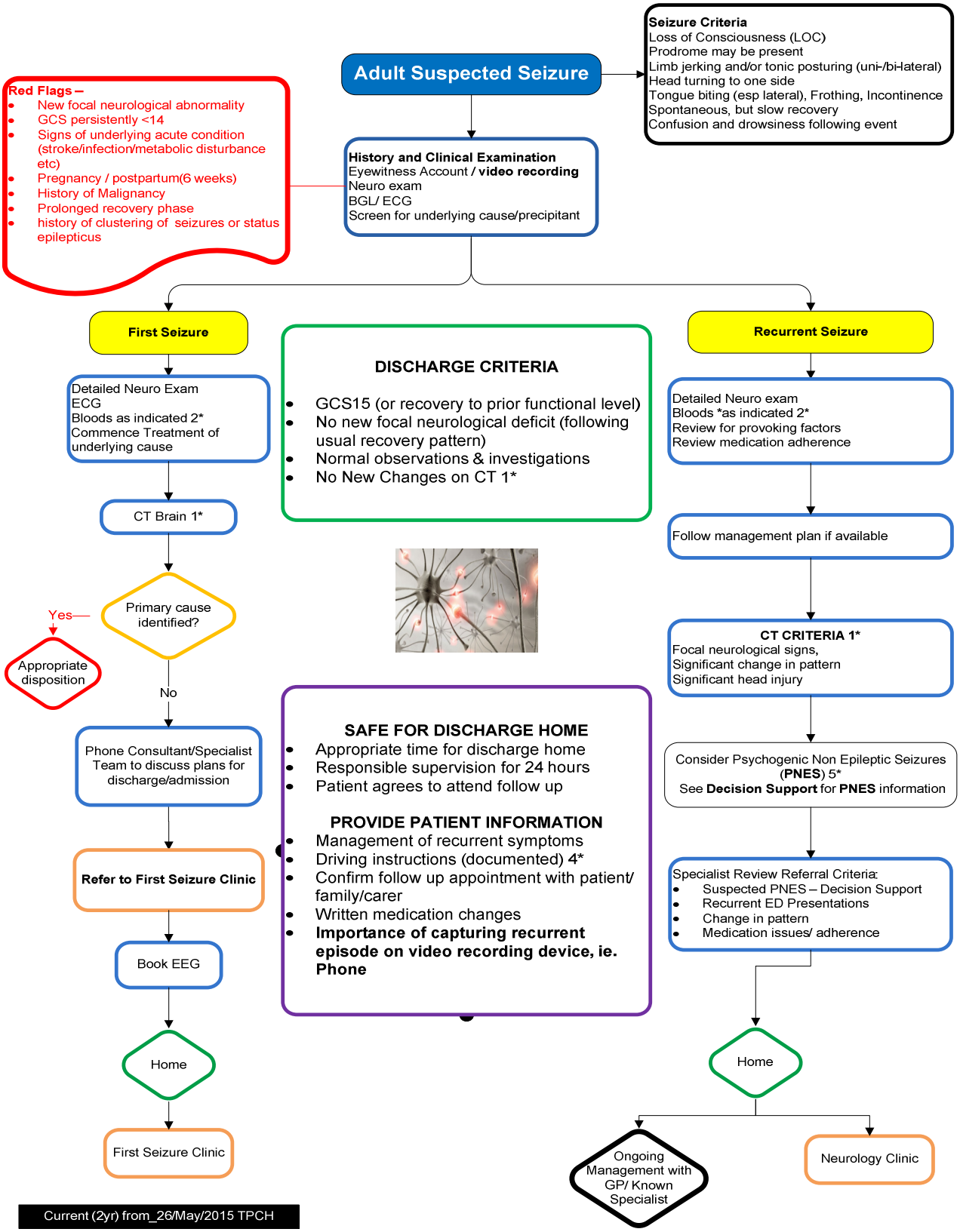
Prince Charles Hospital Syncope guideline



Prince Charles Hospital Suspected stroke/TIA guideline



Prince Charles Hospital Acute Vertigo guideline



Prince Charles Hospital Suspected Seizure guideline

Cellulitis Pathway

This pathway applies to lower limb cellulitis in adults expected to be caused by *S. pyogenes* or other beta-haemolytic streptococci. Note these **Exclusions from this pathway**: water-associated infections, human or animal bite-associated infections, diabetic foot infections, facial or orbital cellulitis, upper limb cellulitis, boils, severe obesity and paediatric patients. For these patients see eTG: Antibiotic Skin and soft tissue infections or call ID for advice.

Step 1. Does this patient have cellulitis of the lower limb?

Consider alternative diagnoses such as acute contact dermatitis, eczema (including venous eczema), deep/superficial venous thrombosis, chronic venous insufficiency, septic bursitis, gout, vasculitis and lipodermatosclerosis. Note, bilateral cellulitis is very uncommon.

Step 2. Classify the patient's cellulitis and treat accordingly

Class I
1. No systemic symptoms/ signs
   AND
2. No significant comorbidity that requires stabilisation or that may complicate resolution of infection

Class II
1. Mild-moderate systemic symptoms/signs
   OR
2. Otherwise stable comorbidity that may complicate resolution of infection
   OR
3. Not responding to appropriate oral therapy after 48 hours

Class III
1. Significant systemic symptoms/ signs
   OR
2. Unstable comorbidities (e.g. poorly controlled diabetes, severe peripheral arterial diseases, immunosuppression)
   OR
3. Limb threatening infection

Class IV
1. Severe systemic symptoms/ signs
   OR
2. Necrotising fasciitis

Consider for parenteral antibiotic therapy via HITH
See Step 3

Outpatient management with oral antibiotics

Mark margin of cellulitis with a skin marker

Investigations
- Swab exudate (if present)
- Other investigations (as indicated)

Antibiotics
- Dicloxacillin 500mg PO 6-hourly for 7-10 days
- If mild penicillin hypersensitivity:
  Cephalexin 500mg PO 6-hourly for 7-10 days
- If immediate penicillin/ beta-lactam hypersensitivity or MRSA:
  Clindamycin 450mg PO 8-hourly for 7-10 days (300mg if < 60kg)

Provide completed patient information brochure and emphasise need for strict limb elevation

Advise patient to follow up with GP within 48-72 hours (with discharge summary)

Inpatient management with IV antibiotics

Mark margin of cellulitis with a skin marker

Investigations
- Swab of exudate, blood cultures (if febrile), FBE, CRP, UEC, LFT, others (as indicated)

Antibiotics
Moderate-severe cellulitis:
- Flucloxacillin 2g IV 6-hourly
- If mild penicillin hypersensitivity: Cephazolin 2g IV 8-hourly
- If immediate penicillin/ beta-lactam hypersensitivity or known MRSA colonisation/infection:
  Lincomycin 600mg IV 8-hourly
  OR
  Vancomycin 25-30mg/kg IV loading dose, followed by 15mg/kg 12-hourly, adjusted for renal function (as per eTG)

For necrotising skin/ soft tissue infections: See The Therapeutic Guidelines Antibiotic and consult ID – needs urgent surgical/ orthopaedic consultation for debridement

Refer patient for admission under general medicine
- Please ensure elevation of affected limb

Step 3. Assess suitability of patients with Class II cellulitis for parenteral antibiotic therapy via HITH		NO	YES
1	Is there orbital or facial cellulitis?		
2	Is there upper limb involvement?		
3	Is the cellulitis associated with a diabetic foot ulcer?		
4	Is it associated with exposure to water (e.g. sea, river, creek, lake)?		
5	Is the patient morbidly obese? (likely under-dosing of Cephazolin – call ID for advice)		
6	Is it associated with and animal or human bite?		
7	Is there necrosis or a requirement for surgical debridement?		
8	Is the cellulitis rapidly progressive or the tissue damage extensive?		
9	Is it associated with critical limb ischemia?		
10	Does the patient have significant renal dysfunction (e.g. eGFR<30 or concern over detericrating renal function)?		
11	Is the patient significantly immunocompromised?		
12	Is the patient known to be colonised with MRSA?		
13	Is the patient taking medications that interact with probenecid (esp. methotrexate, also caution with sulphonylureas)? Or involved in competitive sport? (probenecid is a banned masking agent)		
14	Is the patient unable to care for themselves (or unable to receive appropriate supportive care)?		

If "YES" to any of the above, admit as per a Class III patient, OR contact ID to discuss appropriate antibiotic regimen and suitability for HITH

If "NO" to all of the above

Parenteral Antibiotics via HITH

Mark the margin of cellulitis with a skin marker

Investigations

- Swab exudate, FBE, UEC, LFT, CRP, others (as indicated)

Insert a PIVC using Aseptic Non-Touch Technique per Hospital Policy

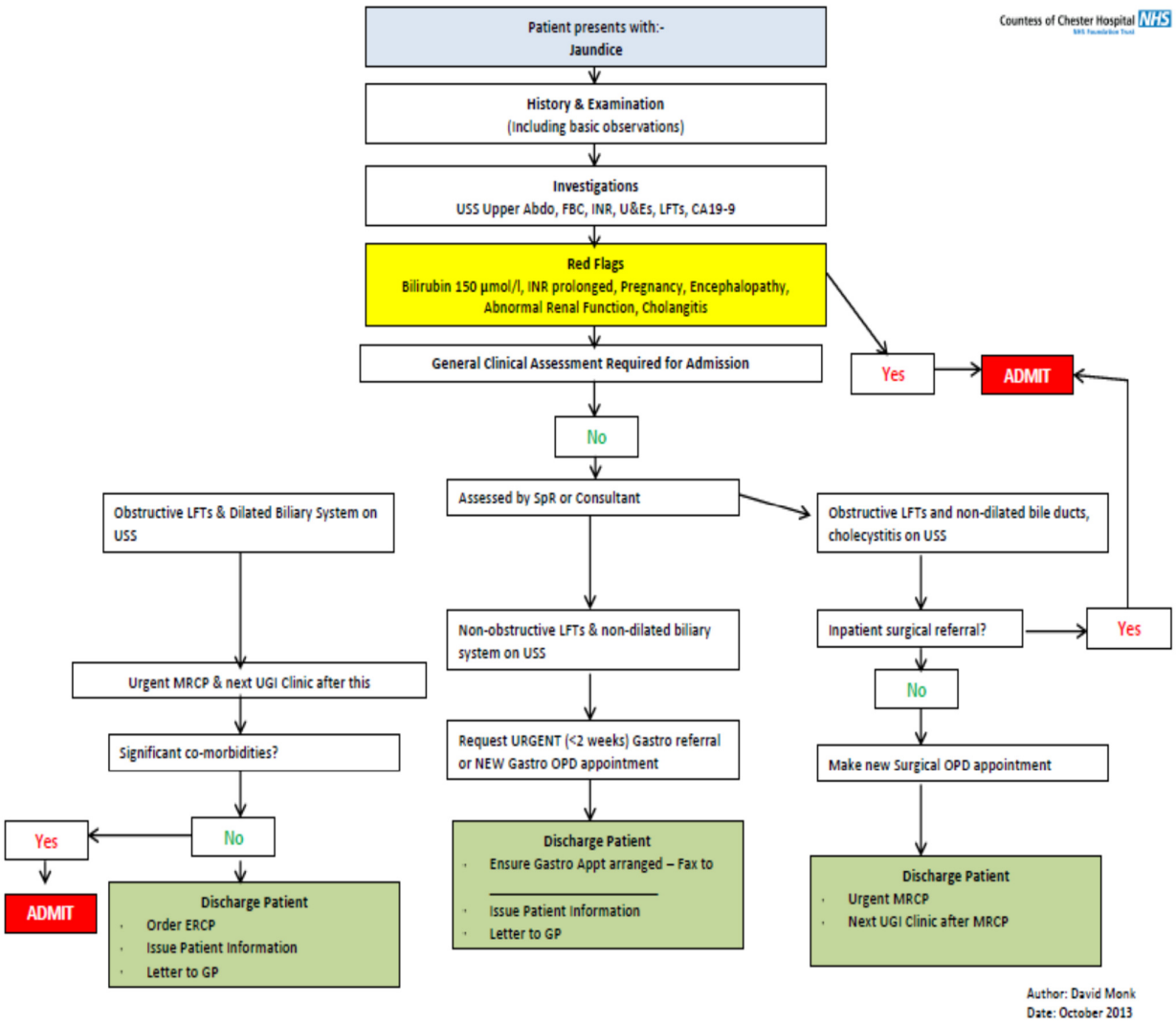
Antibiotics

- Cephazolin 2g IV 24-hourly + Probenecid 1g PO 24-hourly
- OR, If immediate or severe penicillin or cephalosporin hypersensitivity use Lincomycin 600mg IV q8h (OR1.8g/24h continuous infusion)
- Give the first dose in ED
- Write a prescription for 5 days (per the example below) to give to HITH with referral
- Note, no other IV antibiotics can be prescribed to be administered via HITH without ID approval

Refer to HITH

- In hours contact HITH via switch, or in person
- After hours:
  - PAH: admit to MAPU or SSU for HITH review the following morning
  - QE2: ask patient to return to ED 13:00 the following day for HITH assessment
  - Redland: admit to EPU or ward for HITH review the following morning
  - Logan: complete HITH admission pack and leave at HITH office for recall the following day

Provide completed patient information brochure and emphasise the need for strict limb elevation

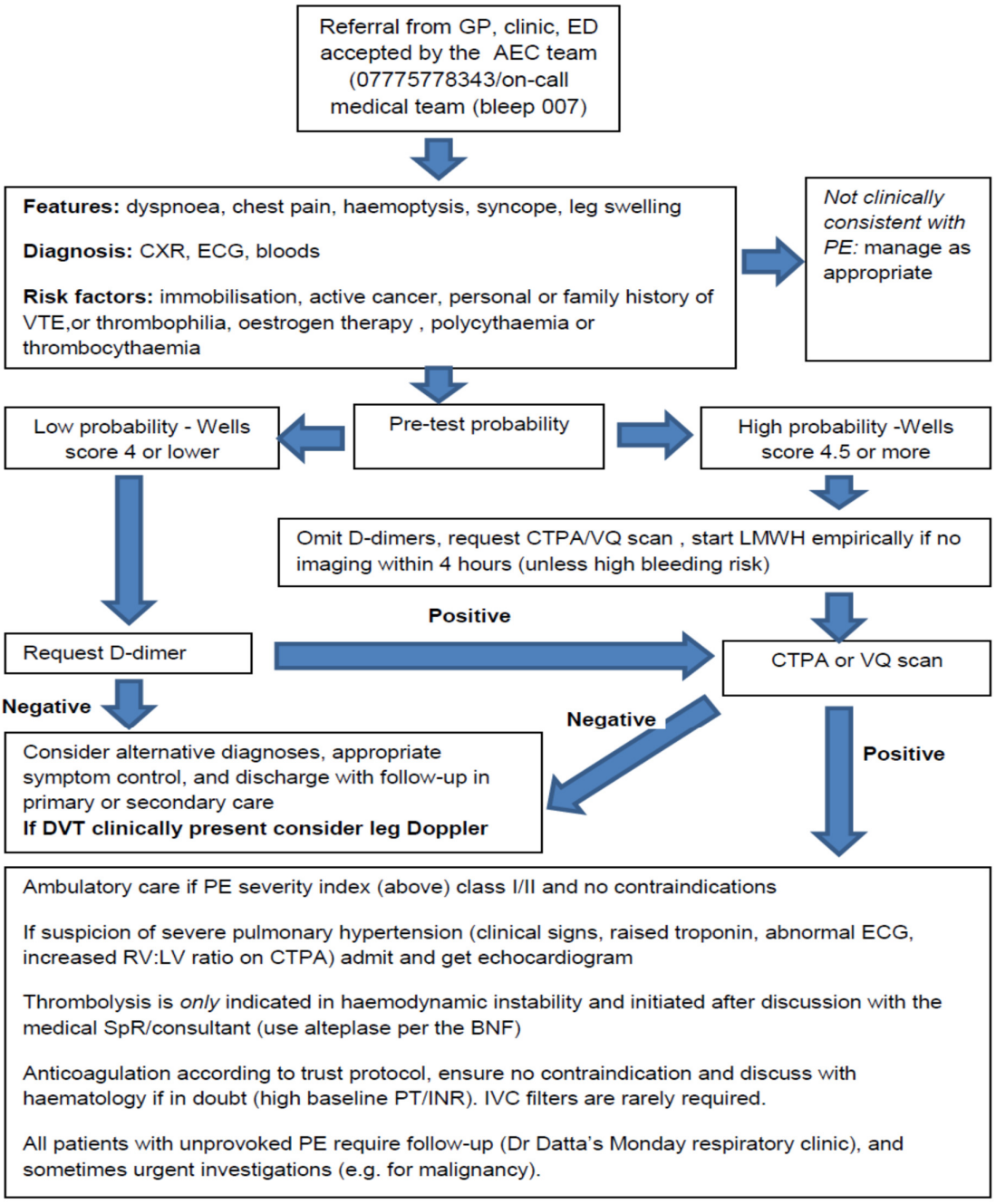


Countess of Chester Hospital Painless Jaundice pathway

The North West London Hospitals NHS
NHS Trust

Ambulatory Emergency Care Service
Pulmonary Emboli Pathway

Patients with suspected PE – assessing suitability for AEC Service

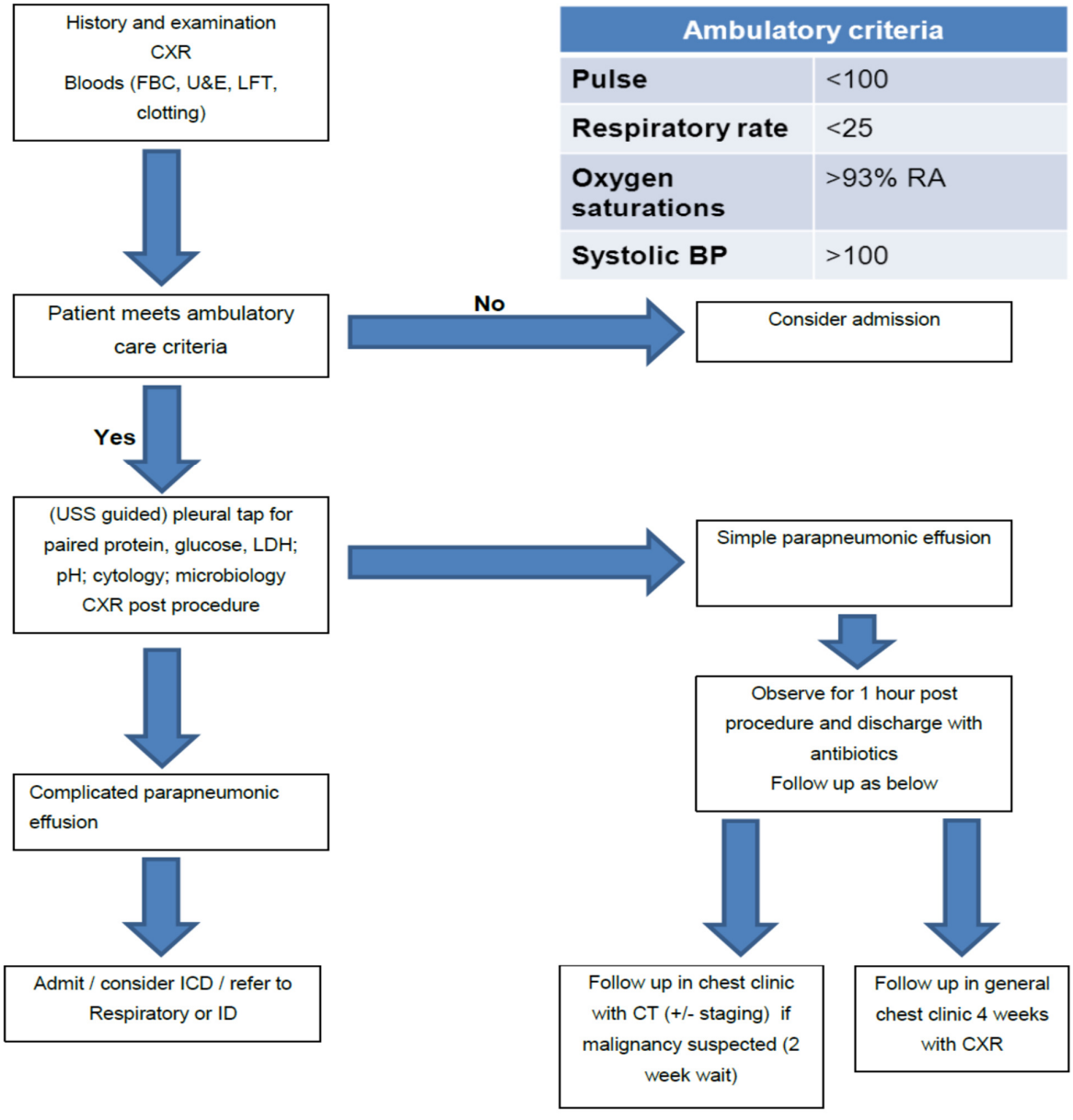


North West London Hospital Suspected PTE guideline

The North West London Hospitals NHS
NHS Trust

Ambulatory Emergency Care Service
Pleural Effusion Pathway

Patients with unilateral pleural effusion – assessing suitability for AEC



Ambulatory criteria	
Pulse	<100
Respiratory rate	<25
Oxygen saturations	>93% RA
Systolic BP	>100

NB: Ambulatory Care Unit to complete all on-going referrals, where required, where initial referral will be classed as First Appointment

Ambulatory Emergency Care Pathway: Pleural Effusion July 2013. Final Version

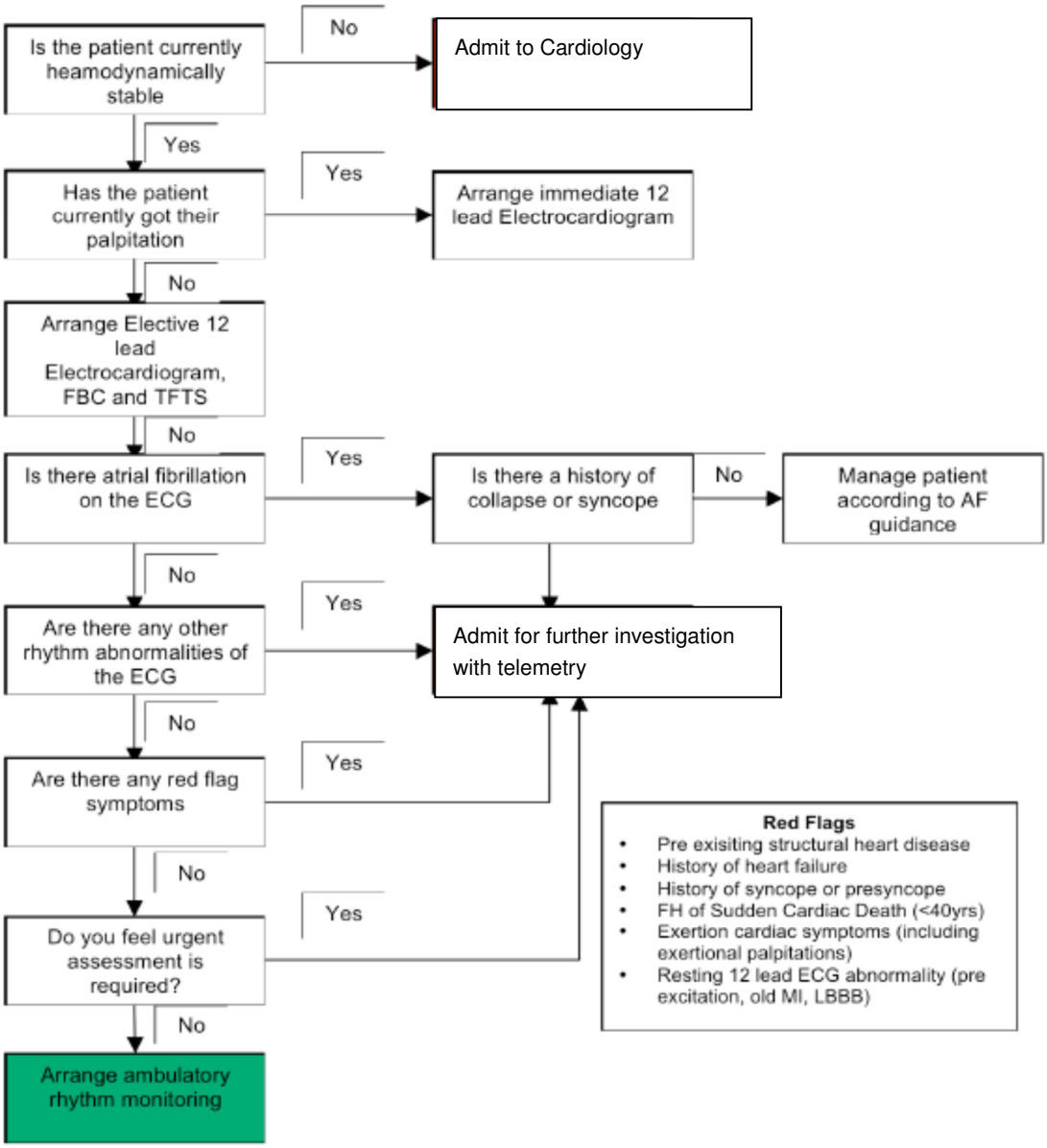
North West London Hospitals Pleural Effusion pathway

Emergency Department Assessment of Chest-pain Score (EDACS)		
CLINICAL CHARACTERISTICS		**SCORE**
a) Age (Please Circle SINGLE Best Answer)		
	18-45	+2
	46-50	+4
	51-55	+6
	56-60	+8
	61-65	+10
	66-70	+12
	71-75	+14
	76-80	+16
	81-85	+18
	86+	+20
b) Male Sex (Please Circle if true)		+6
c) Aged 18-50 years and either (i) known Coronary Artery Disease OR **(ii)** ≥ 3 Risk Factors in patient		+4
d) **Symptoms and signs** (Circle EACH if Present)		
Diaphoresis		+3
Radiates to arm or shoulder		+5
Pain† occurred or worsened with inspiration		-4
Pain† is reproduced by palpation		-6
EDACS Total (Please Add ALL Circled Figures and enter to right)		
2b: EDACS Accelerated Diagnostic Protocol (EDACS-ADP)		
Low-risk	**(i)** EDACS <16 (ii) No new ischemia on ECG (iii) 0 and 2hr troponin both negative	
Recommendation*	Patient safe for discharge to early outpatient follow-up investigation (or proceed to earlier in-patient testing)	
Not low risk	**(i)** EDACS ≥16 (ii) New ischemia on ECG (iii) Either 0 or 2hr‡ troponin positive	
Recommendation	Proceed with usual care with further observation and delayed troponin	
†Pain that caused presentation to hospital. ‡A 2 h troponin is only required if other parameters are low risk. ***Safety point**: patients with an unstable presentation (abnormal vital signs or pain that is ongoing or in a crescendo pattern) should not be considered for the low-risk protocol.		

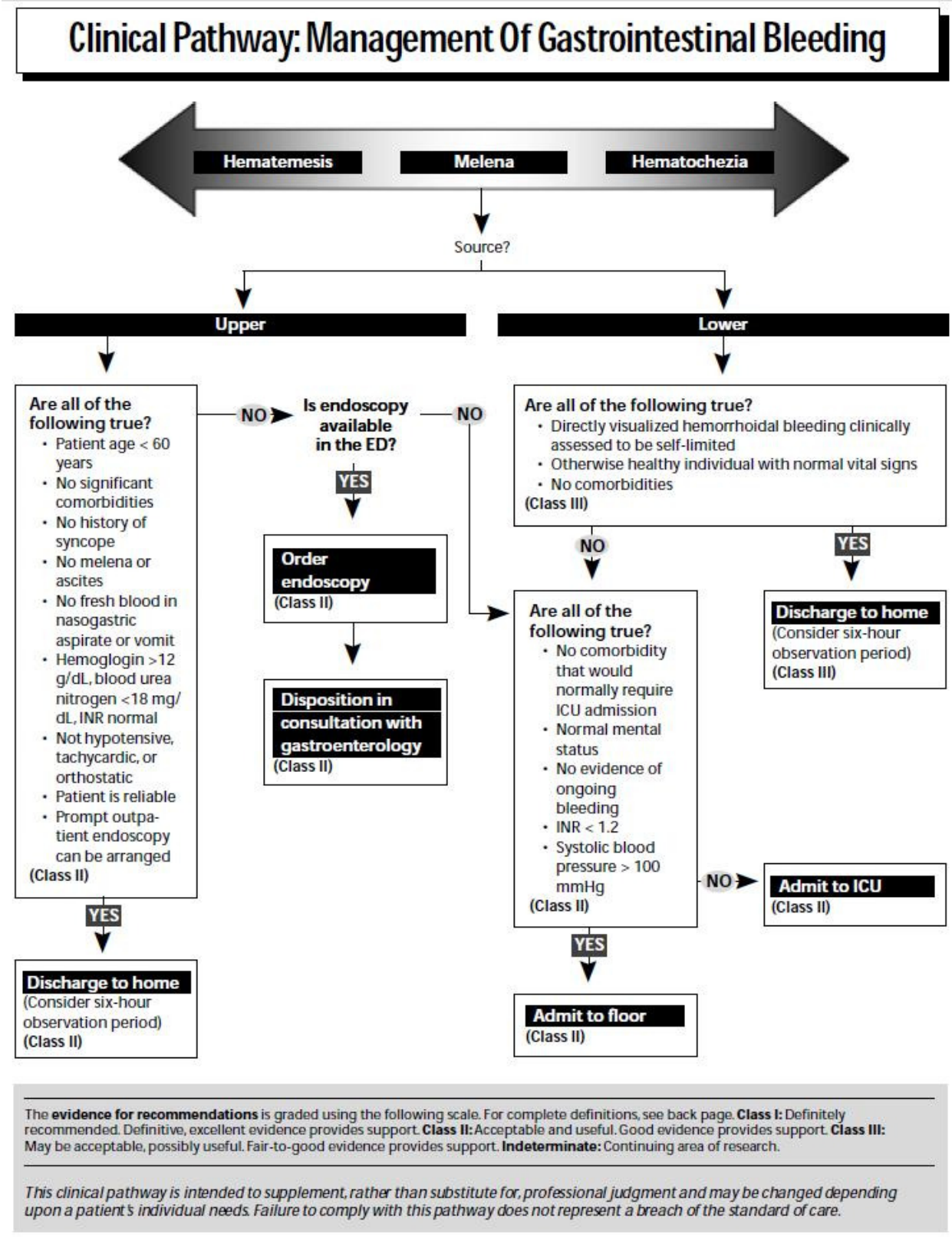
EDACS-Accelerated Diagnostic Protocol for Chest Pain (Source: Christenson J, Innes G, McKnight D, et al. A clinical prediction rule for early discharge of patients with chest pain. Ann Emerg Med 2006;47:1–10).

Possible arrhythmia/palpitations

Low Risk: Management in Primary Care	Refer for Cardiology opinion	Refer for Urgent Cardiology opinion
• Skipped beats • Thumping beats • Short fluttering • Slow pounding AND • Normal ECG AND • No family history AND • No structural heart disease	• History suggests recurrent tachyarrhythmia • Palpitations with associated symptoms AND/OR • Abnormal ECG AND/OR • Known Structural heart disease	• Palpitations during exercise • Palpitations with syncope or near • High Risk structural heart disease • Family history of inherited heart disease/SADS • High degree atrioventricular block



Source: NHS Westcliffe Cardiology Service, Westcliffe Road, Shipley, UK.



Source: http://www.ebmedicine.net/topics.php?paction=showTopicSeg&topic_id=75&seg_id=3380

Investigating metastatic cancer with unknown primary

- Perform the following investigations, as clinically appropriate, guided by the patient's symptoms:
  - comprehensive history and physical examination including breast, nodal areas, skin, genital, rectal and pelvic examination
  - full blood count; urea, electrolytes and creatinine; liver function tests; calcium; urinalysis; lactate dehydrogenase; chest X-ray
  - myeloma screen (when there are isolated or multiple lytic bone lesions)
  - computed tomography (CT) scan of the chest, abdomen and pelvis
  - prostate-specific antigen (PSA) in men
  - cancer antigen 125 (CA125) in women with peritoneal malignancy or ascites
  - alpha-fetoprotein (AFP) and human chorionic gonadotrophin (hCG) in patients with presentations compatible with germ-cell tumours (particularly those with mediastinal and/or retroperitoneal masses and in young men).
  - testicular ultrasound in men with presentations compatible with germ-cell tumours
  - biopsy of accessible lesions (liver, external lymph nodes, pulmonary mass) and standard histological examination, with immunohistochemistry where necessary.
  - upper or lower gastrointestinal endoscopy as directed by symptoms, radiological findings or biopsy results
- Do not offer mammography routinely to women, unless clinical or pathological features are compatible with breast cancer.
- Consider positron emission tomography-computed tomography (18F-FDG PET-CT) to patients presenting with cervical lymphadenopathy with no primary tumour identified on ear, nose and throat panendoscopy if radical treatment is considered to be an option.
- Consider 18F-FDG PET-CT in patients with extra-cervical presentations after discussion with oncology team.
- Consider flexible bronchoscopy with biopsy, brushings and washings to patients presenting with intrapulmonary nodules of probable metastatic origin that are unsuitable for percutaneous biopsy, even in the absence of endobronchial or central nodal disease on imaging.
- Consider video-assisted thoracoscopic surgery (VATS) exploration to patients only after a negative bronchoscopic procedure and where percutaneous biopsy is considered inappropriate.
- Obtain a tissue sample for histological examination in patients who present with ascites, if technically possible.

Source: National Collaborating Centre for Cancer (Cardiff, UK). Diagnosis and Management of Metastatic Malignant Disease of Unknown Primary Origin. NICE Clinical Guidelines, No. 104, July 2010.

Appendix 2. NPS Choosing Wisely recommendations of relevance to general medicine*

*Full list of recommendations with evidence references and methods of derivation available at: http://www.choosingwisely.org.au.

Internal Medicine Society of Australia and New Zealand

- Avoid medication-related harm in older patients (>65 years) receiving 5 or more regularly used medicines by performing a complete medication review and deprescribing whenever appropriate
- Do not request daily full blood counts, erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP) as measures of response to antibiotic treatment if patients are clinically improving
- Once patients have become afebrile (non-feverish) and are clinically improving, do not continue prescribing intravenous antibiotics to patients with uncomplicated infections and no high-risk features if patients are tolerant of oral antibiotics
- Do not request Holter monitoring, carotid duplex scans, echocardiography, electroencephalograms (EEGs) or telemetry in patients with first presentation of uncomplicated syncope and no high-risk features
- Do not request computerised tomography pulmonary angiography (CTPA) as first-choice investigation in non-pregnant adult patients with low risk of pulmonary thromboembolism (PTE) by Wells' score (score ≤4) and D-dimer assay which is negative after adjusting for age

Australasian College for Emergency Medicine

- Avoid coagulation studies in emergency department patients unless there is a clearly defined specific clinical indication, such as for monitoring of anticoagulants, in patients with suspected severe liver disease, coagulopathy, or in the assessment of snakebite envenomation
- Avoid blood cultures in patients who are not systemically septic, have a clear source of infection and in whom a direct specimen for culture (e.g. urine, wound swab, sputum, cerebrospinal fluid, or joint aspirate) is possible
- For emergency department patients approaching end-of life, ensure clinicians, patients and families have a common understanding of the goals of care

Australasian Society for Infectious Disease

- Do not use antibiotics in asymptomatic bacteriuria
- Do not take a swab or use antibiotics for the management of a leg ulcer without clinical infection
- Avoid prescribing antibiotics for upper respiratory tract infection
- Do not investigate or treat for faecal pathogens in the absence of diarrhoea or other gastro-intestinal symptoms
- In a patient with fatigue, avoid performing multiple serological investigations, without a clinical indication or relevant epidemiology

Australasian Society of Clinical Immunology and Allergy

- Alternative/unorthodox methods should not be used for allergy testing or treatment
- Food specific IgE testing should not be performed without a clinical history suggestive of IgE-mediated food allergy

Australian and New Zealand Association of Neurologists

- Don’t perform imaging of the carotid arteries for simple faints
- Don’t perform imaging of the brain for non-acute primary headache disorders
- Don’t perform epidural steroid injections to treat patients with low back pain who do not have radicular symptoms in the legs originating from the nerve roots
- Don’t use opioids for the treatment of migraine, except in rare circumstances
- Don’t routinely recommend surgery for a narrowed carotid artery (>50% stenosis) that has not caused symptoms

Australian and New Zealand College of Anaesthetists

- Avoid routinely performing preoperative blood investigations, chest X-ray or spirometry prior to surgery, but instead order in response to patient factors, symptoms and signs, disease, or planned surgery
- Avoid ordering cardiac stress testing for asymptomatic patients prior to undergoing low to intermediate risk non-cardiac surgery
- Avoid administering packed red blood cells (blood transfusion) to a young healthy patient with a haemoglobin ≥70g/L who does not have on-going blood loss, unless the patient is symptomatic or haemodynamically unstable
- Avoid initiating anaesthesia for patients with limited life expectancy, at high risk of death or severely impaired functional recovery, without discussing expected outcomes and goals of care
- Avoid initiating anaesthesia for patients with significant co-morbidities without adequate, timely preoperative assessment and postoperative facilities to meet their needs

Australian and New Zealand Society for Geriatric Medicine

- Do not use antipsychotics as the first choice to treat behavioural and psychological symptoms of dementia
- Do not prescribe benzodiazepines or other sedative hypnotics to older adults as first choice for insomnia, agitation or delirium
- Do not use antimicrobials to treat bacteriuria in older adults where specific urinary tract symptoms are not present
- Do not prescribe medication without conducting a drug regimen review
- Do not use physical restraints to manage behavioural symptoms of hospitalized older adults with delirium except as a last resort

Australian and New Zealand Society of Palliative Medicine and the Australasian Chapter of Palliative Medicine

- Do not delay discussion of, and referral to, palliative care for a patient with serious illness just because they are pursuing disease-directed treatment
- Do not delay conversations around prognosis, wishes, values and end of life planning (including advance care planning) in patients with advanced disease
- Do not use oxygen therapy to treat non-hypoxic dyspnoea in the absence of anxiety or routinely use oxygen therapy at the end of life
- Do not use percutaneous feeding tubes in patients with advanced dementia; instead use oral assisted feeding
- To avoid adverse medication interactions and adverse drug events in cases of polypharmacy, do not prescribe medication without conducting a drug regime review

Australian College of Nursing

- Don't replace peripheral intravenous catheter unless clinically indicated
- Don't restrict the ability of people with diabetes to self-manage blood glucose monitoring unless there is a clinical indication to do so
- Don't use urinary catheters to manage urinary incontinence unless all other appropriate options have proved to be ineffective or to prevent wound infection or skin breakdown

College of Intensive Care Medicine of Australia and New Zealand and the Australian and New Zealand Intensive Care Society

- For patients with limited life expectancy (such as advanced cardiac, renal or respiratory failure, metastatic malignancy, third line chemotherapy) ensure patients have a 'goals of care' discussion at or prior to admission to ICU and for patients in ICU who are at high risk for death or severely impaired functional recovery, ensure that alternative care focused predominantly on comfort and dignity is offered to patients and their families
- Remove all invasive devices, such as intravascular lines and urinary catheters, as soon as possible
- Transfuse red cells for anaemia only if the haemoglobin concentration is less than 70gm/L or if the patient is haemodynamically unstable or has significant cardiovascular or respiratory comorbidity
- Undertake daily attempts to lighten sedation in ventilated patients unless specifically contraindicated and deeply sedate mechanically ventilated patients only if there is a specific indication
- Consider antibiotic de-escalation daily

Gastroenterological Society of Australia

- Do not request colonoscopies more often than recommended by the National Health and Medical Research Council (NHMRC) endorsed guidelines
- Do not undertake faecal occult blood testing in patients who report rectal bleeding, or require investigation for iron deficiency or gastrointestinal symptoms
- Do not continue prescribing long term proton pump inhibitor (PPI) medication to patients without attempting to reduce the medication down to the lowest effective dose or cease the therapy altogether
- Do not undertake genetic testing for coeliac genes as a screening test for coeliac disease

Haematology Society of Australia and New Zealand

- Do not conduct thrombophilia testing in adult patients under the age of 50 years unless the first episode of venous thromboembolism (VTE): a. Occurs in the absence of major transient risk factors (surgery, trauma, immobility), or b. Occurs in the absence of oestrogen-provocation or c. Occurs at an unusual site
- Do not extend anticoagulation beyond 3 months for a patient with a non-extensive, index venous thromboembolic event (VTE), which occurred in the presence of a major, transient risk factor
- Do not treat patients with immune thrombocytopenic purpura (ITP) in the absence of bleeding or a platelet count <30,000/L without risk factors for bleeding

Human Genetics Society of Australasia

- Don't undertake genetic testing when clinical diagnostic criteria exist and there are no reproductive or predictive testing implications

Royal Australasian College of Surgeons

The Australian Society of Otolaryngology Head and Neck Surgery

- Don't order computed tomography (CT) scan of the head/brain for sudden hearing loss
- Don't prescribe oral antibiotics for uncomplicated acute otitis externa
- Don't obtain computed tomography (CT) or magnetic resonance imaging (MRI) in patients with a primary complaint of hoarseness prior to examining the larynx

The Australasian College of Dermatologists

- Do not assume that bilateral redness and swelling of both lower legs is due to infection unless there is clinical evidence of sepsis such as malaise, fever and neutrophilia, plus an expanding area of redness or swelling over a period of hours to days
- Acute urticaria (i.e. of less than 6 weeks duration) does not routinely require investigation for an underlying cause. Where clinical history and examination suggest the possibility of a bacterial infection or food as a likely trigger, further testing may be warranted. If individual lesions (weals) persist for longer than 24 hours an alternative diagnosis may need to be considered

Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists

- Recognise and stop the prescribing cascade
- Reduce the use of medicines when there is a safer or more effective nonpharmacological management strategy
- Avoid using a higher or lower dose than is necessary for the patient to optimise the 'benefit-to-risk' ratio and achieve the patient's therapeutic goals
- Stop medicines when no further benefit will be achieved or the potential harms outweigh the potential benefits for the individual patient
- Reduce use of multiple concurrent therapeutics (hyper-polypharmacy)

Australian Physiotherapy Association

- Don't request imaging for patients with non-specific low back pain and no indicators of a serious cause for low back pain
- Don't routinely use incentive spirometry after upper abdominal and cardiac surgery

Endocrine Society of Australia

- Don't routinely order a thyroid ultrasound in patients with abnormal thyroid function tests if there is no palpable abnormality of the thyroid gland
- Don't prescribe testosterone therapy unless there is evidence of proven testosterone deficiency
- Avoid multiple daily glucose self-monitoring in adults with stable type 2 diabetes on agents that do not cause hypoglycaemia
- Don't order a total or free T3 level when assessing thyroxine dose in hypothyroid patients

Royal Australian and New Zealand College of Ophthalmologists

- Don't prescribe tamsulosin or other alpha-1 adrenergic blockers without first asking the patient about a history of cataract or impending cataract surgery

The Royal Australian and New Zealand College of Radiologists

- Don't request duplex compression ultrasound for suspected lower limb deep venous thrombosis in ambulatory outpatients unless the Wells Score (deep venous thrombosis risk assessment score) is greater than 2, OR if less than 2, D dimer assay is positive
- Don't request any diagnostic testing for suspected pulmonary embolism (PE) unless indicated by Wells Score (or Charlotte Rule) followed by PE Rule-out Criteria (in patients not pregnant). Low risk patients in whom diagnostic testing is indicated should have PE excluded by a negative D dimer, not imaging
- Don't perform imaging for patients with non-specific acute low back pain and no indicators of a serious cause for low back pain

The Royal Australian College of General Practitioners

- Don't use proton pump inhibitors (PPIs) long term in patients with uncomplicated disease without regular attempts at reducing dose or ceasing
- Don't commence therapy for hypertension or hyperlipidaemia without first assessing the absolute risk of a cardiovascular event
- Don't advocate routine self-monitoring of blood glucose for people with type 2 diabetes who are on oral medication only
- Don't screen asymptomatic, low-risk patients (<10% absolute 5-year CV risk) using ECG, stress test, coronary artery calcium score, or carotid artery ultrasound
- Avoid prescribing benzodiazepines to patients with a history of substance misuse (including alcohol) or multiple psychoactive drug use

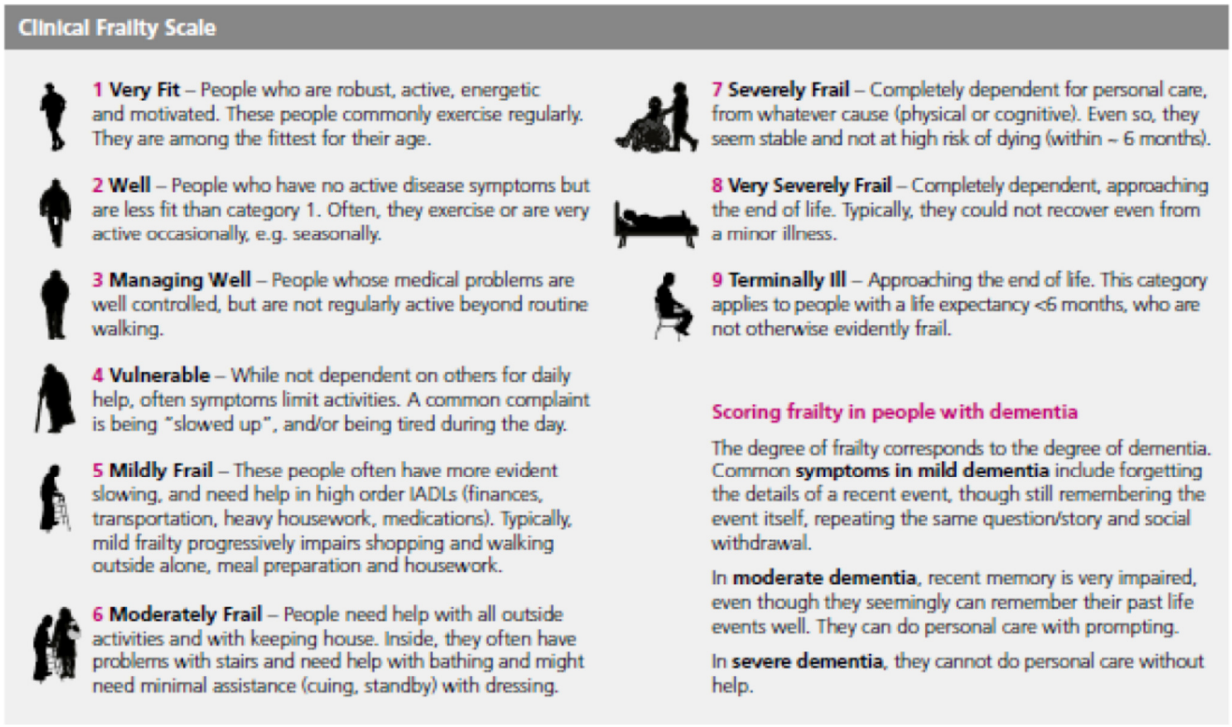
The Royal College of Pathologists of Australasia

- Do not perform surveillance urine cultures or treat bacteriuria in elderly patients in the absence of symptoms or signs of infection
- Restrict the use of serum tumour marker tests to the monitoring of a cancer known to produce these markers or where there is a strong known underlying predisposition or suspicion

The Society of Hospital Pharmacists of Australia

- Don't initiate and continue medicines for primary prevention in individuals who have a limited life expectancy
- Don't initiate an antibiotic without an identified indication and a predetermined length of treatment or review date
- Don't initiate and continue antipsychotic medicines for behavioural and psychological symptoms of dementia for more than 3 months
- Don't recommend the regular use of oral non-steroidal anti-inflammatory medicines (NSAIDs) in older people

Appendix 3. Canadian Frailty Scale



Source: Geriatric Medicine Research, Dalhousie University, Halifax, Canada; Rockwood K et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

Each 1-category increment of the scale significantly increases the medium-term risks of death (21.2% within 6 years [95% CI 12.5%–30.6%]) and entry into an institution (23.9% [95% CI 8.8%–41.2%]) in multivariable models that adjusted for age, sex and education. Analyses of receiver operating characteristic curves showed that the scale performed better than measures of cognition, function or comorbidity in assessing risk for death (area under the curve 0.77 for 18-month and 0.70 for 6 year mortality).

Appendix 4. Care bundles aimed at reducing incidence of geriatric syndromes in hospital

Delirium

Risk identification

- Predisposing and precipitating risk factors for delirium
  - Known cognitive impairment/dementia or past delirium
  - Recent initiation or dose change in CNS-acting drugs
  - Past structural brain disease
  - Sensory impairment (poor vision or hearing; sensory neuropathy)
  - Acute systemic illnesses and infections, electrolyte abnormalities, hypoxia,
  - Predisposition to urinary retention or faecal impaction
- Baseline cognitive screening tests
- Regular screening for delirium with 4AT screening tool* or CAM**

Prevention

- Review medication list and avoid or reduce dose high-risk medications, particularly psychoactive drugs
- Avoid or discontinue as early as possible intravenous therapy, indwelling catheters, and physical restraints
- Perform venipuncture with small tubes
- Stand or ambulate at least 3 times per day and within 24 hours postoperatively
- Complete malnutrition screening tool and consider high protein diet and dietician referral for those at risk of malnutrition
- Provide six to eight glasses of water per day (unless on strict oral fluid restriction)
- Encourage self-bathing
- Provide pressure-reducing mattresses
- Provide environmental cues and reminders of the day, date, and location
- Avoid or manage urinary retention, constipation
- Ensure eye glasses, hearing aids and dental aids are worn and working
- Alleviate pain and attend to continence, skin care, mobility, nutrition
- Foster visits and involvement by family members
- Minimise ward and bed changes
- Manage agitation with non-pharmacological de-escalation strategies
- Administer routine pain medication
- Assess sleep hygiene and maximise sleep (minimise interventions, medication rounds)

Source: Hshieh et al Effectiveness of multicomponent nonpharmacological delirium interventions. A meta-analysis. JAMA Intern Med 2015;175(4):512-520; Prince Charles Hospital Internal Medicine Delirium Tool available at: http://qheps.health.qld.gov.au/tpch/internalmed/delirium.htm

***Reference: Bellelli G, Morandi A, Davis DH, et al. Validation of the 4AT, a new instrument for rapid delirium screening: a study in 234 hospitalised older people. Age Ageing 2014; 43(4):496-502.**

****Reference: Inouye SK, van Dyck CH, Alessi CA, et al. Clarifying confusion. Ann Intern Med 1990;113(12):941-948.**

Recent review of screening instruments for delirium in hospitalised patients: De J, Wand AP. Delirium screening: A systematic review of delirium screening tools in hospitalized patients. Gerontologist 2015;55(6):1079-99.

Urinary tract infections

- Conduct daily nursing rounds to review urine-collection strategies, including indications for continued urinary catheter use
- Promote the use of condom catheters, bladder scanners, intermittent straight catheterization, and accurate measurement of daily weight (all in lieu of indwelling urinary catheters)
- Promote complete bladder emptying, avoid catheterisation where possible, and remove catheters promptly when no longer needed
- Undertake timed voiding (toilet visits at pre-determined times)
- Keep toilet environment uncluttered, leaving doors pen for easy access
- Use absorbent products and barrier creams to maintain skin integrity
- Develop or update the catheter-insertion policy to include all proper steps, develop competencies for nurses and others who insert catheters, and undertake periodic audits of catheter placement
- Provide nurses and physicians with data on urinary-catheter use, with monthly feedback on use and catheter-associated UTIs

Source: Saint et al. A program to prevent catheter-associated urinary tract infection in acute care. N Engl J Med 2016;374:2111-9

Falls prevention

Assessing falls risk

- Extrinsic risk factors (environmental-related risk factors)
  - High-beds
  - Slippery/wet flooring
  - Ill- fitting footwear
  - Bedrails
  - Poor lighting

- Intrinsic risk factors (patient-related physiological and psychological factors)
  - Mental status deficiencies
  - Sensory deficiencies (impaired vision, hearing, and dizziness)
  - Mobility deficiencies (muscle weakness, decreased mobility, and unsteady gait)
  - Psychotropic/sedative medication

Preventive interventions

- Environmental modifications
  - Nuclear unit layouts clear of clutter
  - Acuity adaptable rooms and decentralized nurses' stations
  - Beds with solid split bed rails on low-low setting and night light on
  - Chair heights and depths for easy transfer, chairs with arm rests, secured handrails
  - Non-slip floors, shower seats, grab bars, toilet seats with appropriate height

  - Removal of bedrails (which act as a form of physical restraint)

- Care-related interventions
  - Medication review with modifications to reduce falls risk from postural hypotension and ensure adequate dosing with vitamin D
  - Visual signs/identification bracelets and falls risk magnet affixed to bed head
  - Patient/family education
  - Prompted/regular ambulation and toileting with nurse supervision
  - Regular nurse rounding of high risk patients and evaluation of falls risk status and inclusion in bedside shift handover
  - Close observation (locating high risk patients close to nurse work stations or in dedicated high-risk unit) with higher nurse-patient ratio where possible

- Technology-related interventions
  - Nurse call buttons
  - Bed alarms
  - Appropriate footwear
  - Hip and head protectors for mobile patients at high risk of falls

Source: Choi et al. Developing a multi-systemic fall prevention model, incorporating the physical environment, the care process and technology: a systematic review. J Adv Nurs 2011;67(12):2501-24.

Aspiration

Oral feeding

- Supervised feedings/hand feeding
- Inspection of oral cavity for retained food
- Sit person upright at 90◦ angle
- Flex person's head to a neutral or slightly downward position
- Avoid rushed or forced feeding
- Provide thickened liquids and altered textures following speech therapy review
- Consider prokinetic agents (e.g. erythromycin or metoclopramide) in selected patients to stimulate gastric emptying

Enteral feeding

- Assess for signs of gastric stasis such as nausea or bloating
- Keep head of bed elevated to 30◦ during, and for at least 30 minutes after, feeding
- Choose most appropriate feeding style which may include continuous pump feeds or bolus feeds – if latter, administer over a minimum of 15 minutes
- Oral and dental hygiene
- Daily mouth care using toothbrush: recommended after each meal
- Speech pathologist to provide individualized plan of exercises to strengthen and improve swallowing muscles
- Prokinetic agents may be considered to facilitate gastric emptying

- Folic acid supplements improve swallow reflex
- Reduction of acid suppression therapy such as proton pump inhibitors
- Avoid the use of sedatives or hypnotics

Source: Eisenstadt SE. Dysphagia and aspiration pneumonia in older adults. J Am Acad Nurse Pract 2010; 22(1):17-22.

Dehydration

- Awareness of risk factors (e.g. nausea, vomiting, diarrhoea, fever, fluid losses from diuretics or hyperglycaemia) and regular assessment of symptoms and signs of dehydration (including monitoring of bowels as dehydration risk factor for constipation)
- Use of routine fluid balance monitoring and screening for impending water loss dehydration by noting missed drinks between meals, fatigue, change in mental status
- Offers of choice of fluid including water, juice, cordial, milk, flavoured or unflavoured milk, etc
- Staff assistance with toileting (to prevent the avoidance of drinking)
- Regular prompts to drink by a healthcare attendant with or without a beverage cart

Source: Oates LL, Price CI. Clinical assessments and care interventions to promote oral hydration amongst older patients: a narrative systematic review. BMC Nurs 2017;16:4; Bunn D, Jimoh F, Wilsher SH, Hooper L. Increasing fluid intake and reducing dehydration risk in older people living in long-term care: a systematic review. J Am Med Dir Assoc 2015; 16(2):101-13

Pressure injury

- Undertake daily risk assessment (skin, mobility, nutrition, hydration)
- Use pressure reduction mattresses
- Undertake 2-hourly repositioning and 30° tilted side lying position
- Elevate heels with pillows along calves
- Reduce skin exposure to moisture (continence, spills, drying after bath)
- Use skin cleanser, moisturiser, barrier creams
- Minimise friction and sheer stress when repositioning patients or changing bed sheets

Source: Soban LM, Hempel S, Munjas BA, Miles J, Rubenstein LV. Preventing pressure ulcer injuries in hospitals: a systematic review of nurse-focused quality improvement interventions. Joint Commission J Qual Patient Safety/Joint Commission Resour 2011; 37 (6), 245–252.

Multiple syndromes

Eat, Walk, Engage

- EAT: Enhance nutrition
  - Provide high-protein high-energy diet (nutrition/food services)
  - Provide mid meals (nutrition/food services)
  - Ensure patients sitting out ready to eat (nurses)
  - Provide encouragement and assistance (nurses/all staff/families)
  - Minimize clinical activity during meal times (all staff)
  - Weekly shared morning tea in patient lounge with tempting food and drinks (senior allied health

– professionals)

- WALK: Enhance mobility/functional recovery
  - Encourage and assist sitting out of bed (nursing)
  - Provide graded exercise program (physiotherapy)
  - Encourage and assist mobilizing (all staff/families)
  - Encourage, assist independence in ADLs (nurses, occupational therapist)
  - Provide walking destination (e.g., table/chairs at the end of hallway) (nurse unit manager)
  - Improve patient lounge (nurse unit manager)
  - Provide activity diary and exercise booklet (physiotherapy/nurses/junior medical officer)
  - Provide ward maps and signs (physiotherapist/nurse unit manager)

- ENGAGE: Prevent delirium/enhance recovery
  - Weekly activity session in patient lounge (senior allied health professionals)
  - Provide daily newspaper (end of hallway) (unclear)
  - Provide magazines in patient areas (end of hallway) (nursing assistant)
  - Provide crosswords/Sudoku (nursing assistant)
  - Update orientation boards daily (nurses)
  - Provide access to television/radio/DVDs (unclear)
  - Facilitate hand massages delivered by volunteers (nursing assistant)

Source: Mudge A, McRae P, Cruickshank M. Eat walk engage: an interdisciplinary collaborative model to improve care of hospitalized elders. Am J Med Qual 2015; 30(1): 5–13.

Appendix 5. Prediction rules commonly encountered in general medicine

1. Modified Well's score for predicting risk of pulmonary thromboembolism

Reference: ***Wells PS et al. Derivation of a simple clinical model to categorize patients' probability of pulmonary embolism: increasing the model's utility with the SimpliRED D-dimer. Thromb Haemost. 2000:83 (3): 416–20.***

Variable	Points
Clinical signs and symptoms of deep venous thrombosis	3
Alternative diagnosis less likely	3
Heart rate >100/min	1.5
Immobilisation	1.5
Previous pulmonary embolism or deep venous thrombosis	1.5
Haemoptysis	1.0
Malignancy (receiving treatment, treated within last 6 months or palliative)	1.0

Interpretation: Using a cut-point for Modified Wells score (mWS) of ≤4 = low risk patients, >4 = high risk patients

2. CHA2DS2-VASc Score for predicting risk of thromboembolic stroke in patients with atrial fibrillation

Reference: Lip GY et al. Refining clinical risk stratification for predicting stroke and thromboembolism in atrial fibrillation using a novel risk factor-based approach: the euro heart survey on atrial fibrillation. Chest 2010;137(2):263-72.

Variable	Points
Congestive heart failure Signs/symptoms of heart failure confirmed with objective evidence of cardiac dysfunction	1
Hypertension Resting BP > 140/90 mmHg on at least 2 occasions or current antihypertensive pharmacologic treatment	1
Age 75 years or older	2
Diabetes mellitus Fasting glucose > 125 mg/dL or treatment with oral hypoglycemic agent and/or insulin	1
Stroke, TIA, or TE Includes any history of cerebral ischemia	2
Vascular disease Prior MI, peripheral arterial disease, or aortic plaque	1
Age 65 to 74 years	1
Sex category (female) Female gender confers higher risk	1

Interpretation: Score 0-0% annual stroke risk; 1-1.3%; 2-2.2%; 3-3.2%; 4-4.0%; 5-6.7%; 6-9.8%; 7-9.6%; 8-12.5%; 9-15.2%.

3. CURB-65 Score for predicting risk of death in community-acquired pneumonia

Reference: ***Lim WS et al. Defining community acquired pneumonia severity on presentation to hospital: an international derivation and validation study". Thorax 2003; 58 (5): 377–82.***

Variable	Points
Confusion of new onset (defined as an abbreviated mental state score ≤8)	1
Blood **U**rea nitrogen greater than 7 mmol/l	1
Respiratory rate ≥30	1
Systolic **B**lood pressure <90mmHg, Diastolic **B**lood pressure ≤60mmHg	1

Interpretation: The risk of death at 30 days increases as the score increases: 0—0.6%; 1—2.7%; 2—6.8%; 3—14.0%; 4—27.8%; and 5—27.8%.

4. HAS—BLED score for predicting risk of major bleeding* in patients receiving anticoagulation

Reference: ***Pisters R et al. A novel user-friendly score (HAS-BLED) to assess 1-year risk of major bleeding in patients with atrial fibrillation. Chest 2010; 138 (5): 1093–100.***

Variable	Points
Hypertension: (uncontrolled, >160 mmHg systolic)	1
Abnormal renal function: Dialysis, transplant, Cr >200 µmol/L **A**bnormal liver function: Cirrhosis or bilirubin >2x Normal or AST/ALT/AP >3x normal	1
Stroke: prior history of stroke	1
Bleeding: prior major bleeding or predisposition to bleeding	1
Labile INR: unstable/high INR or INR time in therapeutic range <60%	1
Elderly: age >65 years	1
Drugs: Prior alcohol use (≥8 standard drinks/week or drug use predisposing to bleeding: (antiplatelet agents, non-steroidal anti-inflammatory drugs)	1

***defined as intracranial bleeds, hospitalization, haemoglobin decrease > 20 g/L, and/or transfusion**

Interpretation: score of ≥3 indicates "high risk"

Appendix 6. Essential steps in advance care planning

- Assess understanding of disease and its prognosis
- Assess receptivity to ACP and preferences for information-sharing and decision-making
- Identify surrogate decision makers
- Explain the rationale for ACP
- Define patient's concerns, goals of care, acceptable levels of function (intolerable states)
- Reframe unrealistic goals
- Summarise and link goals with care needs
- Respond to issues elicited
- Acknowledge response
  - Legitimise reaction
  - Empathise
  - Explore concerns
  - Clarify
  - Calibrate surrogates
- Reinforce commitment to care

Source: Scott IA et al. Difficult but necessary conversations — the case for advance care planning. Med J Aust 2013; 199: 662-666

Appendix 7. An approach to deprescribing: the CEASE protocol

Key step	Detailed processes
1. Ascertain all **C**urrent medicines the patient is taking and the reasons for each one	Ask patients (and carers) to bring all medicines (prescribed, complementary, over the counter) and medicine delivery aids to consultation or home visit. Ask patients in a non-judgemental way) about any regularly prescribed medicines not being taken and if so why not (too expensive, side-effects, etc).
2. Consider overall Risk of drug-induced harm in individual patients in determining the required intensity of deprescribing intervention	Ascertain and assess risk according to: • *Medicine factors:* number of medicines (single most important predictor), use of 'high risk' medicines (see text), past or current toxicity • *Patient factors*: age >80 years, cognitive impairment, multiple co-morbidities, substance abuse, multiple prescribers, past or current non-adherence
3. Assess each medicine for its Eligibility to be discontinued	
• No valid indication	• Identify medicines being prescribed: – for a diagnosis that is in doubt i.e. not confirmed; highly atypical presentations – for a confirmed diagnosis but where evidence of efficacy is non-existent (e.g. ivabradine being prescribed for stable angina despite randomised trials showing no benefit) – which confer no additional benefit after a certain period of continuous use (such as bisphosphonates taken for more than 5 years) or after a certain age (such as hormonal replacement therapy in patients over 70 years of age)
• Part of a prescribing cascade	• Identify medicines prescribed to counteract maleffects of other medicines (e.g. potassium supplements to counteract effects of diuretics prescribed for ankle swelling secondary to calcium channel blockers) • Re-consider the indications for the initial culprit medicine or its substitution by an alternative medicine with superior tolerability
• Actual or potential harm of a medicine clearly outweighs any potential benefit	• Identify 'medicines to avoid' in older patients (see text) • Identify medicines contraindicated in particular patients (e.g. beta-blockers in an asthmatic patient) • Identify medicines causing well known side effects (e.g. constipation with calcium antagonists; postural symptoms with alpha-blockers)

• Disease/symptom control medicine is ineffective or symptoms have completely resolved	• Ask patient: 'Since you started this medicine, has it made such a difference to how you feel that you would prefer to stay on it?' → consider ceasing the medicine if the response is no or probably not • Ask: 'Are you still experiencing any troublesome symptoms (cough, headache, dyspepsia, etc)? Do you feel the medicine is still required?' – Consider ceasing the medicine if the target condition is self-limiting, mild, intermittent or very amenable to non-drug interventions (e.g. change in diet, alcohol use, etc)
• Preventive medicine is very unlikely to confer any patient-important benefit over the patient's remaining lifespan	• Estimate patient's life expectancy using risk prediction tools or asking surprise' question (see text) • Determine the patient's expectations and preferences – is present-day quality of life more important than prolonging life or preventing future morbid events? • Identify medicines unlikely to confer benefit (and may cause harm) over the patients remaining lifespan
• Medicines are imposing unacceptable treatment burden	• Ask the patient: 'Apart from side effects, are there any other concerns you have with your medicines?' Identify medicines that are particularly burdensome (e.g. difficulty swallowing large tablets, out-of-pocket expense, monitoring requirements [such as warfarin])
4. Prioritise (Sort) medicines for discontinuation	• Deciding the order of discontinuation of medicines may depend on integrating three pragmatic criteria: – 1) those with the highest harm and lowest benefit; – 2) those easiest to cease i.e. lowest likelihood of withdrawal reactions or disease rebound; – 3) those the patient is most willing to cease first (to gain buy-in to deprescribing other medicines) • Suggested approach is to rank medicines from high harm/low benefit to low harm/high benefit and cease the former in sequential order (see figure).
5. Implement and monitor medicine discontinuation (Elimination) regimen	• Explain and agree with patient on management plan • Cease one medicine at a time so that harms (withdrawal reactions or return of disease) and benefits (resolution of adverse medicine effects) can be attributed to specific medicines and rectified (if necessary) • Wean patients off drugs more likely to cause adverse withdrawal effects, instruct patient (or carer) on what to look for and report in the event of such effects occurring, and what actions they can self-initiate if these were to occur • Communicate plan and contingencies to all health professionals and other relevant parties (carers, family) involved in patient's care • Fully document the reasons for, and outcomes of, deprescribing

Source: Scott IA et al. Reducing inappropriate polypharmacy – the process of deprescribing. JAMA Intern Med 2015; 175: 827-834.

Appendix 8. Strategies for improving efficiency and reducing wait times for outpatient clinics*

Resource alignment

1. limit the number of referrals to clinics either absolutely or through the use of incentives to limit referrals
    - Concerted effort by both primary and secondary care stakeholders to manage care for patients by integrated care pathways, better communication between care providers and encouraging patient participation in the management of their health
2. audit wait list re patients' ongoing needs and the accuracy of waiting times and demand for services
3. discharge patients into GP care as soon as appropriate
    - Structured discharge criteria, management plan for GP, arrangements for gaining further access to specialist care in the future as required
4. triage patients by another health care professional rather than simply process administratively
    - Team-based approaches which extend scope of practice of non-medical health professionals with the proper training and where collaboration with senior consultant s in setting onward referral guidelines

Operational efficiency

1. start clinics promptly
2. improve allocation of appointment slots
3. avoid large blocks of patients (congestion)
4. give advance access to prioritised patients
    - same-day appointments in rapid access ['hot'] clinics
5. have a single queue for all patients and a one-stop diagnostic clinic
6. allocate time appropriately for new and follow-up patients
7. implement strategies that align supply with demand for services
8. regularly monitor performance

Process improvement

1. align processes with organisational priorities, assessment and benchmarking
2. ensure capacity planning, new resources and efficient use of existing resources
3. control and reduce variation in demand and capacity
4. use no-show modelling and computer simulations to predict doctor idle time, day-dependent no-show predictions, patient arrival time to match demand and capacity
5. implement appointment scheduling of patients (to predict routine vs urgent patients; scheduled and unscheduled patients)
6. increase efficiency and productivity of clinics by decreasing variation in quality of referrals from general practitioners by using Clinical Prioritisation Criteria
7. eliminate waste related to delays, repeated encounters and errors
    - setting targets for waiting time delays, lead times, times for booking and referral management with linked process control and policy deployment
8. implement preparation times and referral management

9. optimise booking procedures, consumer engagement, and overbooking
10. automate scheduling times where possible
11. use eReferrals, eConsults and telehealth where possible
12. use patient text messaging as reminders for clinic appointments

***Adapted from Naiker U, FitzGerald G, Dulhunty JM, Rosemann M. Time to wait: a systematic review of strategies that affect out-patient waiting times. Aust Health Rev published online 30 March 2017; http://dx.doi.org/10.1071/AH16275**

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