

“I’m just not quite sure, so I’ll admit them”: Junior and middle grade doctor’s perceptions of how they tolerate the uncertainty associated with admission and discharge decisions in the Emergency Department.

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Study Summary

Rationale

Sometimes, liberal approaches to admission and testing are taken by Emergency Department (ED) doctors as a result of uncertainty increasing fear associated with potential poor patient outcomes. Physicians who have lower tolerance of uncertainty can also have higher levels of burnout, work-related stress, depression, anxiety and reduced job satisfaction and engagement. This is more prevalent amongst junior staff populations and this is a result of junior doctors showing lower tolerance to uncertainty than their more experienced colleagues.

To reduce the negative manifestations of uncertainty amongst junior and middle grade doctors, it is necessary to explore how doctors respond to uncertainty, the factors which inhibit effective uncertainty management and identify how doctors can be better supported to clinically reason in the face of uncertainty.

Aim

To explore how junior doctors and registrars experience uncertainty in EDs, focusing on how uncertain admission and discharge decisions are responded to and the factors which doctors perceive to influence how they manage such cases. The findings will support the development of an intervention to enhance uncertainty tolerance (UT) surrounding patient management decisions.

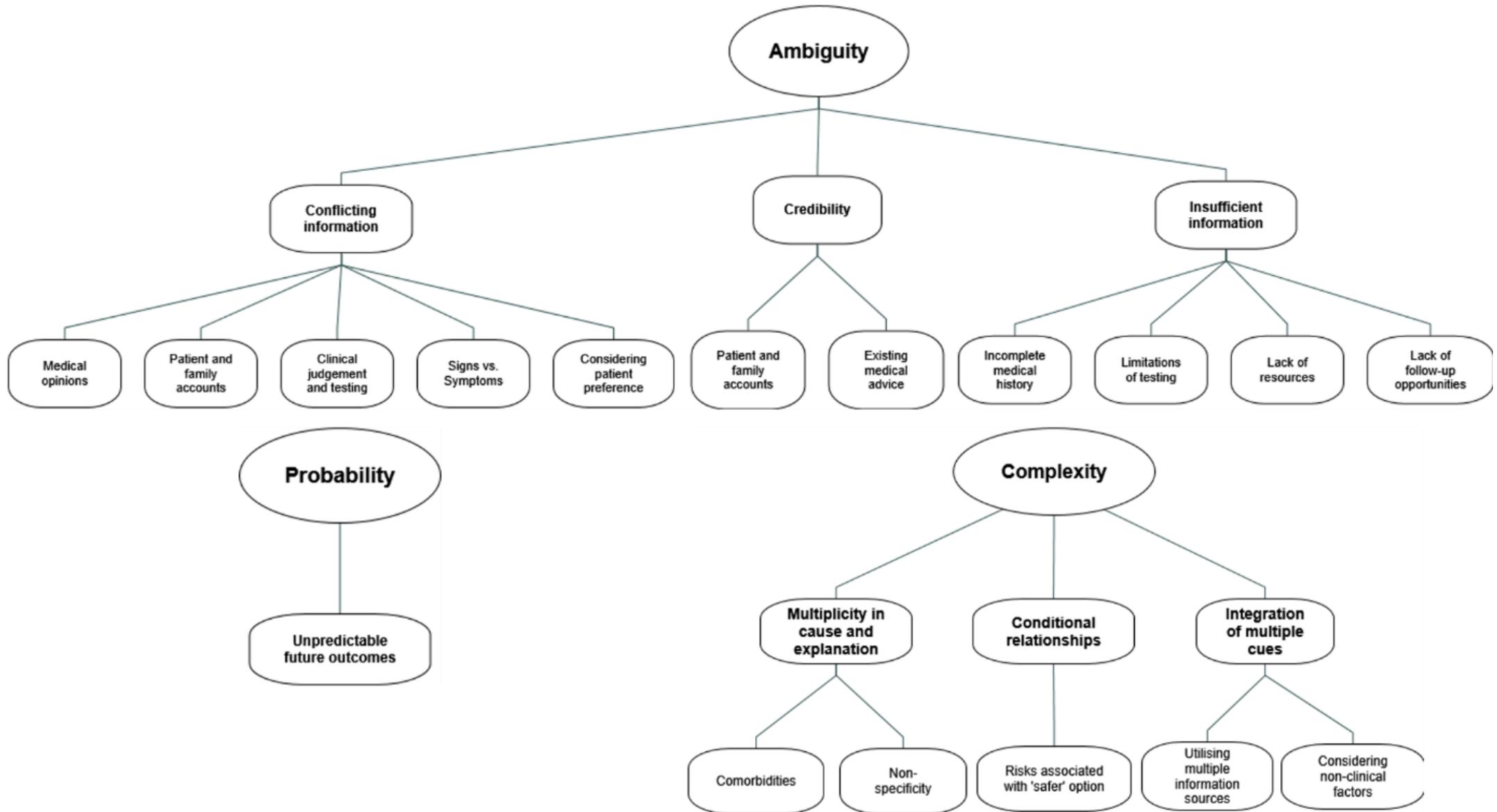
Theoretical framework informing study

The study was informed by an existing model of uncertainty tolerance (Hillen et al., 2017) which is referenced at the bottom of this summary. The authors of this model define UT as, ‘*a set of negative and positive psychological responses – cognitive, emotional and behavioural – provoked by the conscious awareness of ignorance*’ (p.70). Such responses are a consequence of stimuli perceived to be unknown as a result of probability or risk (e.g. when future events are indeterminable), ambiguity (e.g. a lack of reliability, adequacy or credibility) and complexity (features of the stimulus which make it hard to comprehend, such as multiple causal factors). The model also proposes UT is influenced by ‘moderators.’

Findings in relation to research questions

- 1) What are the *sources* of uncertainty experienced by doctors when making admission and discharge decisions in the ED?

The cases participants discussed involved uncertainty due to probability, ambiguity and complexity. These three sources of uncertainty are further categorised, representing inadequacies in the information available to them doctor's perceived to exist, specifically when making admission and discharge decisions (see figure below).



2) How do junior and middle grade doctors experience and *respond* to uncertain admission and discharge decisions in the ED?

ED doctors discussed cognitive appraisals, emotional responses and behavioural responses to uncertain admission and discharge decisions. The following tables summarise each of these in turn. Behavioural responses are split into source-focused (where the intention is to reduce uncertainty) and consequence-focused responses (where the intention is to mitigate any consequences associated with uncertainty).

Despite the categorisation of responses to uncertainty according to cognition, emotion and behaviours, these reactions were not always distinct and interacted with each other to promote certain responses. Behaviours including admission, shared decision-making with patients, speaking to colleagues and safety netting were carried out to mitigate negative emotions such as worry. Cognitive appraisals were also influenced following certain behavioural responses. For example, decisions were perceived to have less doubt and more confidence surrounding them after consequence-focused responses had taken place, particularly discussion with trusted, senior colleagues. In circumstances where consequence-focused responses such as safety netting could not be enacted, admission generally occurred. Consequence-focused behavioural responses were perceived to reduce the negative thoughts and feelings associated with an uncertain discharge. Should these behaviours not be performed, the uncertainty surrounding a discharge was too high, with negative manifestations such as worry, doubt and discomfort surrounding it.

Table 1. Cognitive appraisals of uncertainty perceived by doctors and associated outcomes, perceived positively or negatively.

Cognitive appraisal	Positive outcome	Negative outcome
Acceptance of inevitable uncertainty	External attribution of uncertainty (rather than viewing uncertainty as an indication of weakness in ones abilities, acknowledgement that due to various factors in the ED, certainty cannot always be reached). Empowered to ask for help. Empowered to disclose uncertainty with patients. Less anxiety experienced.	Belief that something could always be missed creating more uncertainty.
Viewing uncertain situations as an opportunity to learn	Reflection when given advice which conflicts doctor's own judgement. Feedback sought from colleagues.	
Confidence	Empowered to communicate transparently with patients. Less doubt experienced. Less admission for decision deferral purposes.	Less attempts to reduce ambiguity could potentially lead to missed diagnoses.
Deliberation of risks and benefits of admission and discharge	Where risks of admission outweighed benefits, unnecessary admission was avoided.	Risks of admission were usually considered higher for both the patient and doctor due to a perception of hospitals as safe places.
Dwelling on worst case scenario Doubt	Focus on ruling out life threatening diagnoses. Initiated conscious perception of uncertainty, triggering use of management strategies.	Heightened anxiety. Defensive practice. Usually experienced in hindsight and initiates worry.
Considering anticipated emotions	Serves protective purpose for doctors.	Learned responses based on how previous discharge decisions have made doctors feel are more likely to drive admission decisions than discharge if doctor already has low UT.

Table 2. Emotional responses to uncertainty and the perceived causes

Emotion	Perceived explanation and/or outcomes
Worry	<p>Generally experienced after discharging a patient due to fear of having made a mistake or missed something significant.</p> <p>Worry about symptom progression was also perceived by doctors as a driver for admission decisions.</p>
Fear	<p>An emotional response of fear was exclusively a result of the unpredictable patient outcomes often faced when discharging a patient. Fear was also a response to making decisions based on ambiguous information.</p>
Discomfort	<p>Discomfort was primarily perceived to be a result of a patient self-discharging in a situation where doctors felt a risk of symptom progression existed and believed admission was required. Similar to worry, feelings of discomfort were perceived by doctors to drive admission decisions.</p>
Absence of emotional response to admission	<p>When considering patients they had admitted but later thought discharge would have been appropriate, doctors did not perceive emotive responses to the uncertainty, even when patients were discharged shortly after by specialist wards.</p>

Table 3. Behavioural responses to uncertainty and mechanisms of reducing uncertainty or the associated consequences.

Behavioural response	Mechanism of impact
Source-focused	
Decision-making (admission)	Allows access to specialist opinion or further testing. Allows time for symptom progression. Allows time for patient and family preference to be established for long-term care plan.
Decision-making (discharge)	If life threatening diagnoses have been ruled out, discharge allows time for non-urgent symptoms to manifest.
Information seeking (medical history and clinical testing)	Provides clinical information which informs decision and reduces uncertainty.
Information seeking (discussion with colleagues)	Reduces uncertainty associated with own judgement should colleagues provide supporting advice.
Information seeking (consulting guidelines, scoring systems etc.).	Provides standardised guidance which reduces uncertainty and need for clinical judgement.
Information seeking (Following patient record up)	Checking on patient after decision reduces the uncertainty experienced in hindsight of a decision. Learning informs future uncertainty management.
Consequence-focused	
Admission	Reduced worry associated with unpredictable future outcomes for patient (e.g. symptom progression) and doctor (e.g. litigation issues). Preventative measure for symptom progression. Avoids discharge considered 'unsafe.'
Conferring with seniors and specialists	Can be documented and strengthens defensibility of discharge decision should an adverse event occur or decision be questioned.
Safety netting	Reduced worry associated with unpredictable future outcomes for patient following discharge (e.g. symptom progression) and doctor (e.g. litigation issues). Partially removes responsibility of uncertainty from doctor by allowing patient to take ownership of future contact with the health service.
Use of scoring systems and guidelines	Strengthens defensibility of decision and partially removes responsibility of uncertainty from doctor.

Shared decision-making with patients and families

Partially removes responsibility of uncertainty from doctor.

3) What *factors* do junior and middle grade doctors perceive to influence their response to uncertain admission and discharge decisions in the ED?

A number of interrelated factors were perceived by doctors to contribute to how they responded to and tolerated uncertainty, some enhancing and others hindering UT. These factors ranged from an individual level, pertaining to the doctor and patient themselves, to a wider organisational and system level.

Table 4. Factors influencing the response to uncertain admission and discharge decisions in the ED.

Factor type	Factor	Influence on UT
Patient characteristics	Patient preference	When clearly expressed, <i>patient preference</i> facilitates shared responsibility with patient.
	Decision-making capacity	If patient has borderline <i>capacity</i> or no capacity, there is a barrier to shared responsibility. Family involvement can help.
	Risk factors	Uncertainty is harder to tolerate with the presence of <i>risk factors</i> . More information seeking is carried out.
	Social care and safeguarding considerations	<i>Social care and safeguarding needs</i> create an increased need for safety netting. When this is not possible the complexity drives admission due to uncertainty about the patient's welfare being too high to tolerate.
	Signs and symptoms (interaction of severity and risk)	When <i>signs and symptoms</i> are ambiguous, more information seeking is carried out. Considering the potential for severe consequences drives admission and discharge decisions.

Situational characteristics	Time of day	Reduced access to specialists, ED seniors and community support at <i>night time</i> make consequence-focused responses difficult, resulting in admission.
	Workload	High <i>workload</i> means less opportunity to seek sufficient information to be comfortable about discharge, increasing chance of admission. There is also less time to be transparent with patients about decision-making process.
	Bed capacity	More discussion with seniors and more consideration of risks of admission when hospital is reaching maximum <i>bed capacity</i> to avoid admission This results in more uncertain discharges taking place increasing the need to engage in consequence-focused responses.
	Covid-19	<i>Covid-19</i> was perceived to have the same impact on UT as hospital reaching capacity.
	Staffing level	Where <i>staffing level</i> is low, less opportunity exists for discussion with seniors to share ownership of decision.
Cultural factors	Culture within the team	A positive <i>culture within the ED team</i> and good leadership promotes psychological safety and facilitates an awareness that decisions can be made as a team. This also reduces negative emotions associated with acknowledging uncertainty and asking for support. Where teams don't give positive feedback, this hinders the growth in confidence associated with uncertainty.
	Inter-departmental culture	Where ward doctors were perceived to be accessible and supportive and <i>inter-departmental culture</i> was positive, this promoted information

seeking from specialists and allowed responsibility to be shared.

	Culture of medicine	The <i>culture of medical</i> practice promoting the perception that doctors should know everything hindered acknowledgement of, and disclosure of uncertainty to colleagues and patients. The perception that modern medicine promotes over-investigation.
Social factors	Perception of colleagues	<i>Perception of colleagues</i> practice influenced who doctors asked for help. Colleagues perceived to have high UT were consulted for patients whom the doctor thought could be discharged and conversely, colleagues perceived to have low UT for patients with more uncertainty present.
	Relationships within the team	Generally, stronger <i>relationships with the team</i> promoted asking for help and shared responsibility.
Organisational factors	Limited time and resources	<i>Restricted time</i> to arrange follow-up care and <i>limited information</i> to rule-out serious diagnoses means uncertainty associated with discharge is not managed and can result in admission.
	Lack of follow-up opportunities	<i>Less opportunity to seek follow-up information</i> after discharge can drive an admission decision for uncertain cases. This also hinders the opportunity to learn to tolerate uncertainty surrounding discharge.
	Decision-making pathways	<i>Guidance on decision-making</i> for complex patients exists making discussion with seniors when discharging mandatory. This empowers juniors to ask for help and promotes shared responsibility.

	Rotation system	Frequent <i>rotations</i> mean new trusts can seem unfamiliar. Less knowledge of safety netting structures available and less psychological safety with team members can hinder consequence-focused responses. ED rotations in FY2 are the first time doctors are exposed to triaging patients and making discharge decisions. This sudden increase in responsibility was perceived to be associated to low UT.
Individual characteristics of the doctor	Personal experience	UT is lower for patient presentations which the doctor has <i>personal experience</i> with, such as losing a family member who had similar symptoms. This manifested in negative emotions and perceived defensive practice.
	Communication skills	The ability to <i>communicate</i> uncertainty effectively facilitated safety netting and involving patients and families in decision-making.
	Personality traits	Doctors perceived <i>personality traits</i> such as preference for team working to facilitate satisfaction with ED career and increased UT.
	Perception of the safety of hospitals	The general <i>perception that hospitals are safe</i> places drove admission decisions and increased UT surrounding uncertain admissions. Doctors who did not have this perception engaged in more conversations with patients and families to avoid admission.
	Belief in patients to take ownership of health	<i>Beliefs about the power dynamic in patient-doctor relationships</i> impacted responses to uncertainty. Where doctors held the belief that disclosure of uncertainty would reduce the trust patients had in them, communication

was hindered. Where doctors thought decisions and responsibility should be shared, more trust was held in safety netting.

Clinical experience and knowledge

Increased *experience and clinical knowledge* influenced the amount of uncertainty experienced and the ability to manage it. This sustained increase in UT is discussed in a short video on the website page.

Conclusion

This study suggests value in ensuring ED doctors can engage in consequence-focused behaviours when patients are deemed safe for discharge and a need for clinical education to address uncertainty directly.

Hillen, M. A., Gutheil, C. M., Strout, T. D., Smets, E. M., & Han, P. K. (2017). Tolerance of uncertainty: Conceptual analysis, integrative model, and implications for healthcare. *Social Science & Medicine*, 180, 62-75.

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