

Interactions between metacognitive disposition and clinical knowledge use in novice nurses' clinical problem-solving: Some case studies

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Background

- The study investigates the relationships between aspects of pre-service nurses' metacognitive dispositions and their approaches to the management of a series of simulated clinical problems.
- The study is grounded in a model of learning that emphasises the role of dispositional factors (such as approach to learning and preferred mode of strategy control) in driving the clinical decision-making processes of nurses when confronted with an uncertain and complex clinical problem.
- This underlying model was outlined in the Cantwell & Cholowski paper.

Background

- The study sought think-aloud evidence of effective clinical decision-making amongst novice nurses in the context of hypothetical clinical problems.
- Participants chosen to reflect combinations of approach to learning (Biggs, 1987) and dispositions towards strategic control (Cantwell & Moore, 1996)

Background

- Approaches to learning refer to tendencies of students to conceptualise learning tasks in one of two ways:
 - **Deep Approach** which focuses on learning as a personalised process of meaning construction. Associates with more sophisticated epistemologies, and with the use of higher-level learning strategies
 - **Surface Approach** which is more limited in its conceptualisation of task to the literal or reproducible, and consequently associates with a more constrained epistemology and the use of lower-level and a more limited array of learning strategies

Background

- Strategic control (Cantwell & Moore, 1996) refers to a tendency towards different modes of control over self-regulatory activity in learning:
 - **Adaptive control** – willingness to reflect on optimal strategy choices
 - **Inflexible control** – preference for the use of habitual strategic behaviours
 - **Irresolute control** – difficulty in orchestrating coherent strategic responses to complex problems

Background

- Approach to Learning and Strategy Control provide complementary accounts of aspects of metacognitive knowledge – decisions of how to approach and manage complex and ill-structured clinical problems will in part reflect how problems are generally conceptualised and how the strategic management of these problems needs to be orchestrated.
- In this study we look at the responses of five metacognitive types:
 - **Irresolute control** – as this self-regulatory disposition makes no assumption about the underlying epistemology of the domain, it can be examined independently of the approaches to learning
 - **Surface Inflexible and Deep Inflexible**: within the constraints of the habitual strategic decision making, the approach to learning may differentiate depth and or breadth of clinical concerns
 - **Surface Adaptive and Deep Adaptive**: the flexibility of strategy choice is argued to be mediated by the underlying epistemological boundaries set by the approach to learning

“Mr Thomas”

- Your community team has just been in contact with 70 year-old Mr Thomas. Mr Thomas has been recently experiencing difficulty in walking, and in particular has problems in negotiating the front steps. He is becoming more housebound and is feeling quite lonely and isolated. He has a history of arthritis and has just discovered a lesion on his foot. He doesn't want to trouble the doctor with it. What are the things you would think about in solving this problem? How would you solve this problem?

“Mrs Walker”

- Thirty-six year-old Mrs Walker was admitted to your ward three days ago complaining of chest pains. She has become quite anxious, convinced she is dying. On examination, her pulse rate is measured at 88, and her B/P at 140/90. Mrs Walker has a history of rashes and of recurrent skin rashes on her hands. Both the asthma and the rashes have worsened over the past 24 hours. What are the things you would think about in solving this problem? How would you solve this problem?

“Emergency Ward”

- You are a nurse in an emergency ward. Late one evening, a male outpatient, approximately 20 years of age, is left on the ward by a group of males who subsequently leave the hospital. There is an apparent injury to his forehead and some evidence of injury to his body. He is very loud and aggressive, and is clearly intoxicated. There also may be other drugs involved. What are the things you would think about in solving this problem? How would you solve this problem?

“Records”

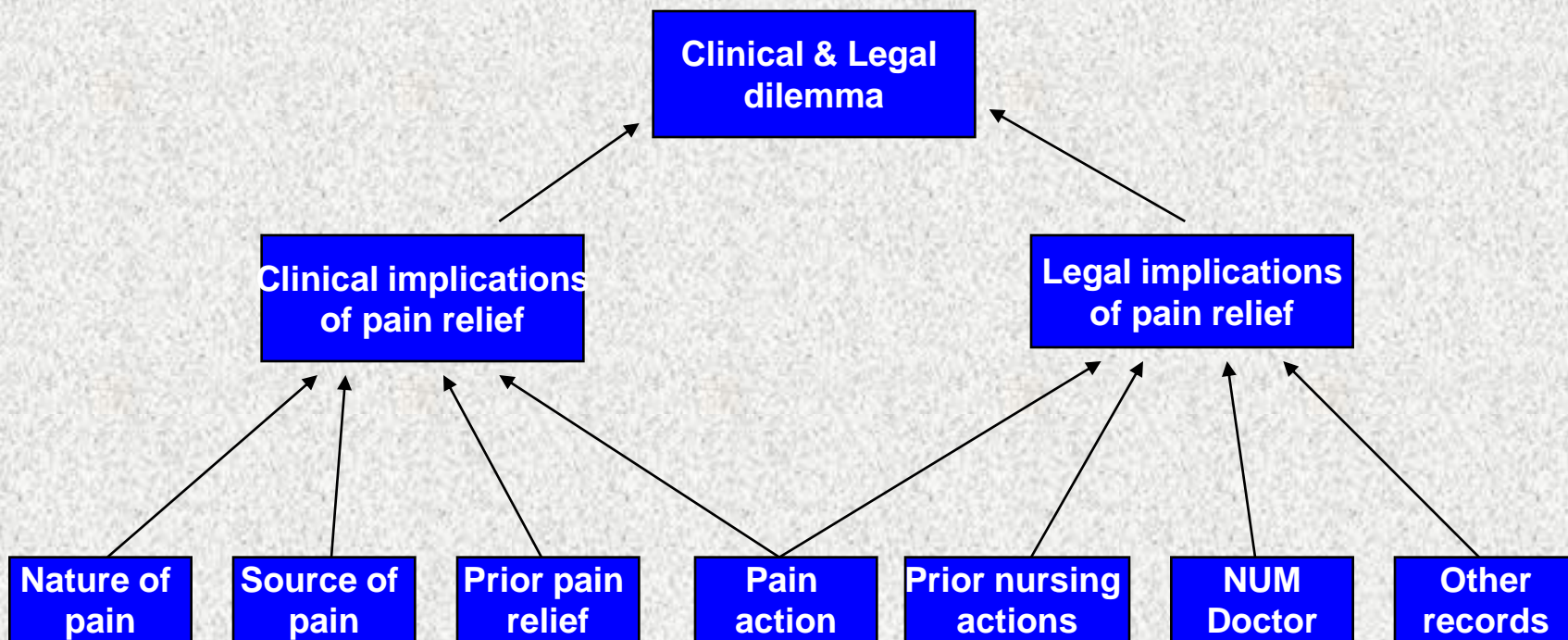
- You are a ward nurse in a general hospital. This is your first shift on this ward. Shortly after beginning your shift, you notice one of the patients, a young boy who has recently had a steel pin placed in his arm, appears to be in some pain. You check the records to find out when his last medications were given, and in what dosage. You discover that the nurse on the previous shift has failed to complete the record sheet at the end of the bed. What are the things you would think about in solving this problem? How would you solve this problem?

We report only on the “Records” case.

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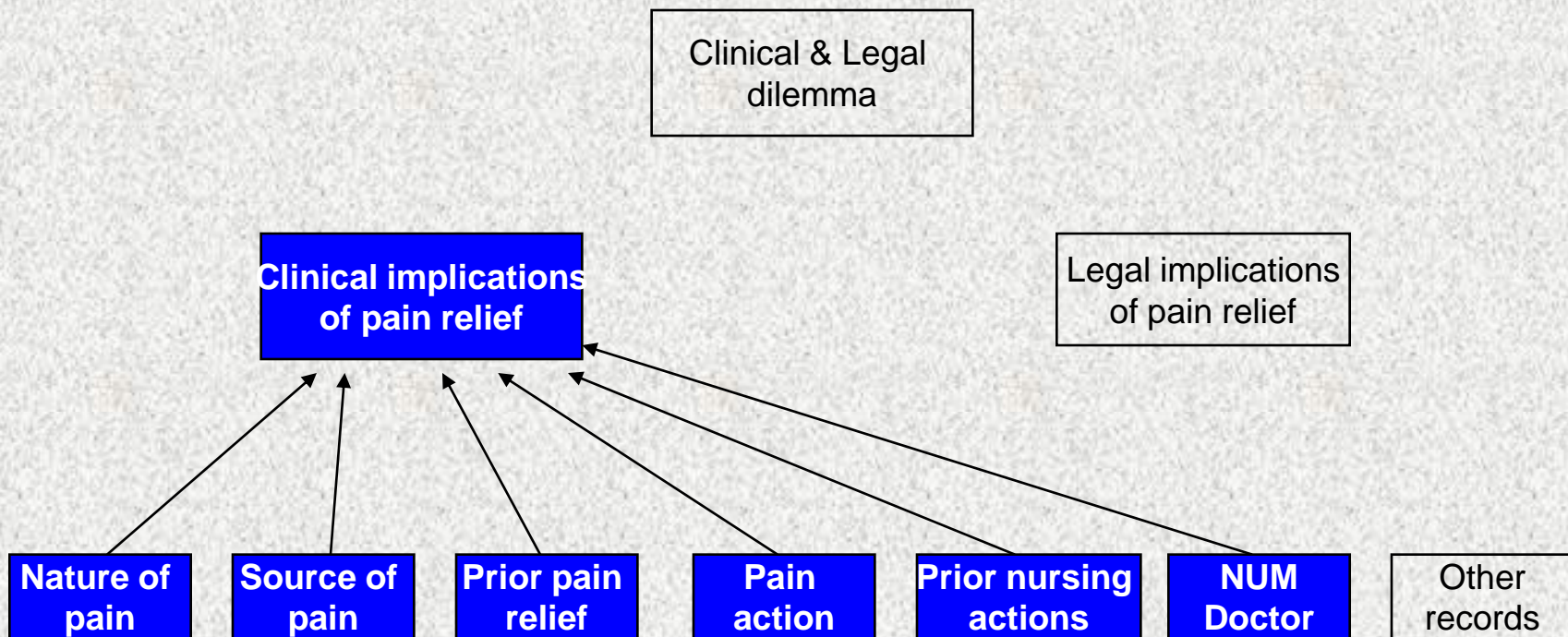




RECORDS clinical vignette with propositional content as defined by panel of experts

Irresolute Student response:

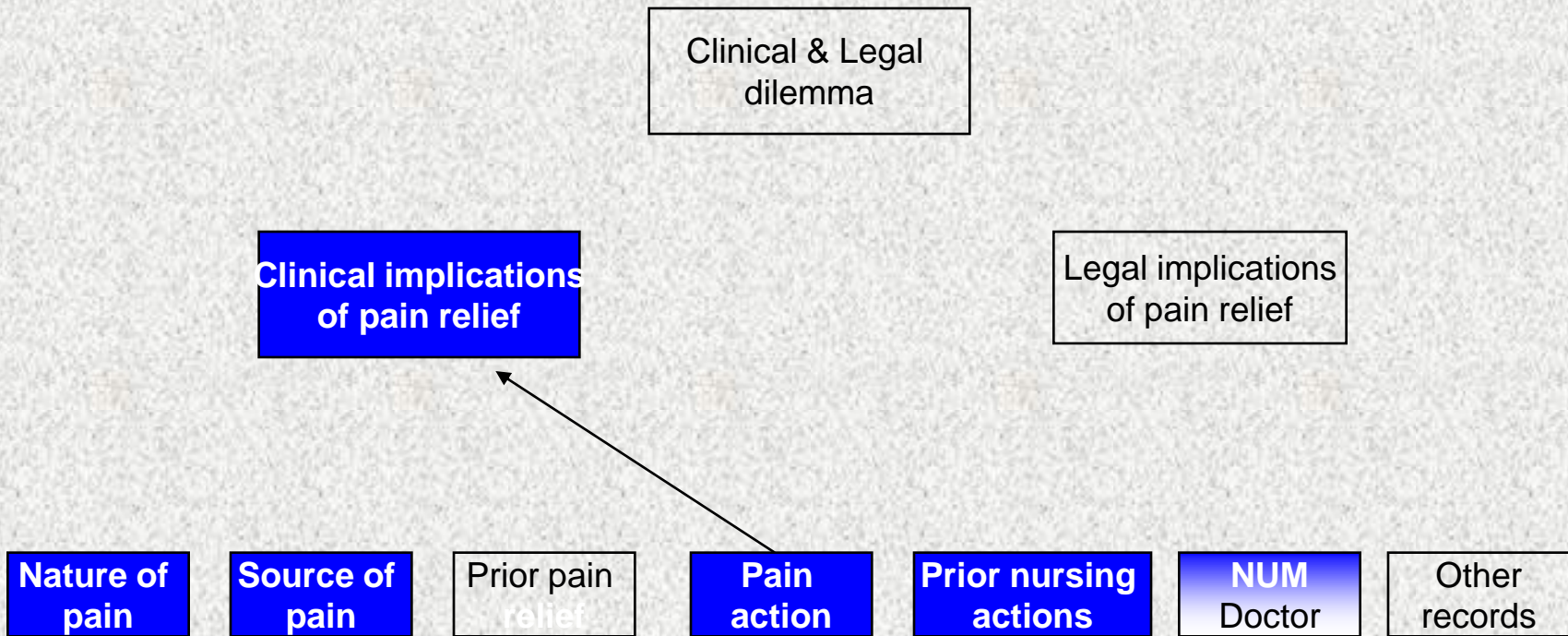
- I'd contact the nurse as soon as possible to find out if she gave any pain relief. I'd ring her at home, or if I can't get in contact with her I'd contact the doctor and see what he'd filled in – should we give more medication. because he's in pain, you have got to do something. Maybe like It mightn't just be something normal to do with the pin, it might be something has gone wrong. Maybe he was given medication, but, you now, something has gone wrong and it's creating more pain. So I'd call the nurse. If I couldn't find her I'd then call the doctor and get him to come in.



RECORDS clinical vignette: Response of Irresolute participant

Surface Inflexible Student response:

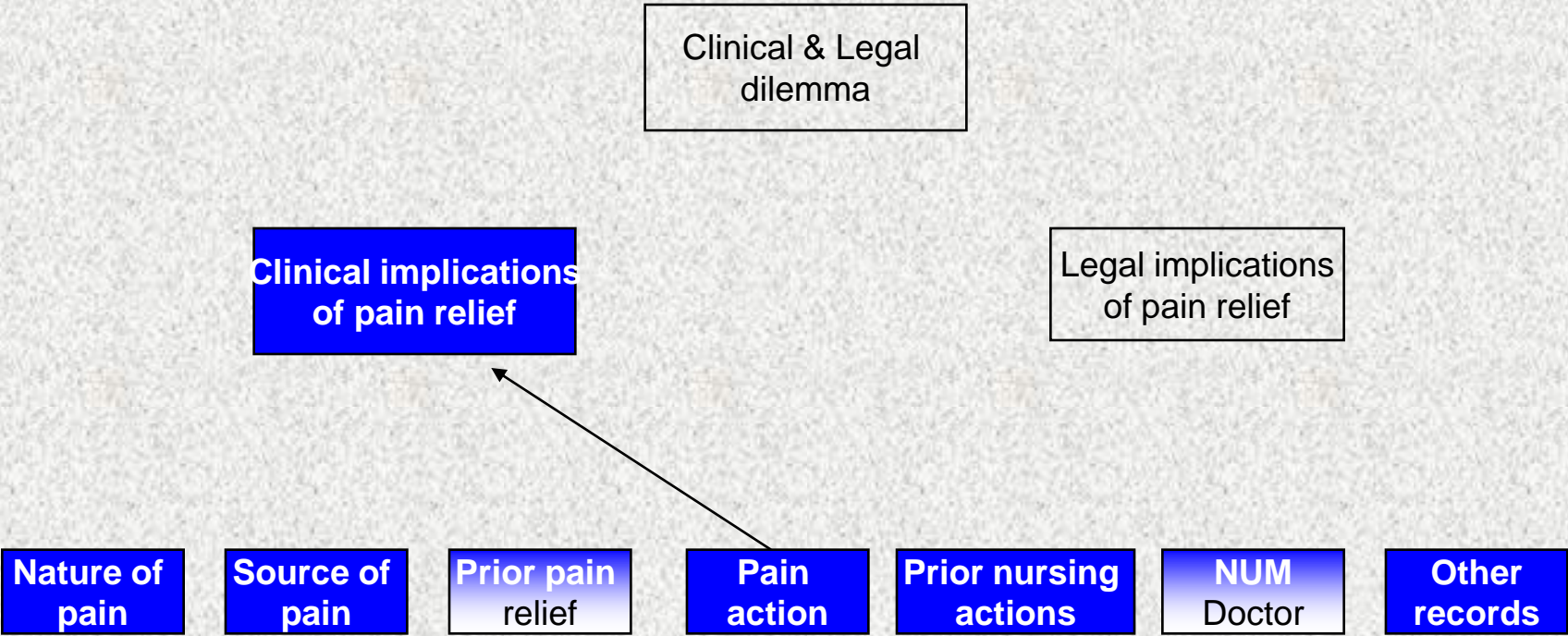
- I'd first go and see the nurse in charge of the ward and show her that the medication wasn't given. I'd see the young boy who was in pain. See if it was the arm that was in pain. Was the nurse on the previous shift? Perhaps if she's still there ... she might be there for some reason. If she is, get in contact with her ... if not, give her a ring at home. See if it was given ... see if the dose was given and she didn't fill out the form or that she didn't give the dosage and then give out the medication. Give the boy just ... I'm not sure ... panadol or something, something minor that might help him ... the pain. Mosty just ... I'd say get in contact with the nurse before. Find out exactly what did happen



RECORDS clinical vignette: Response of Surface Inflexible participant

Deep Inflexible Student response:

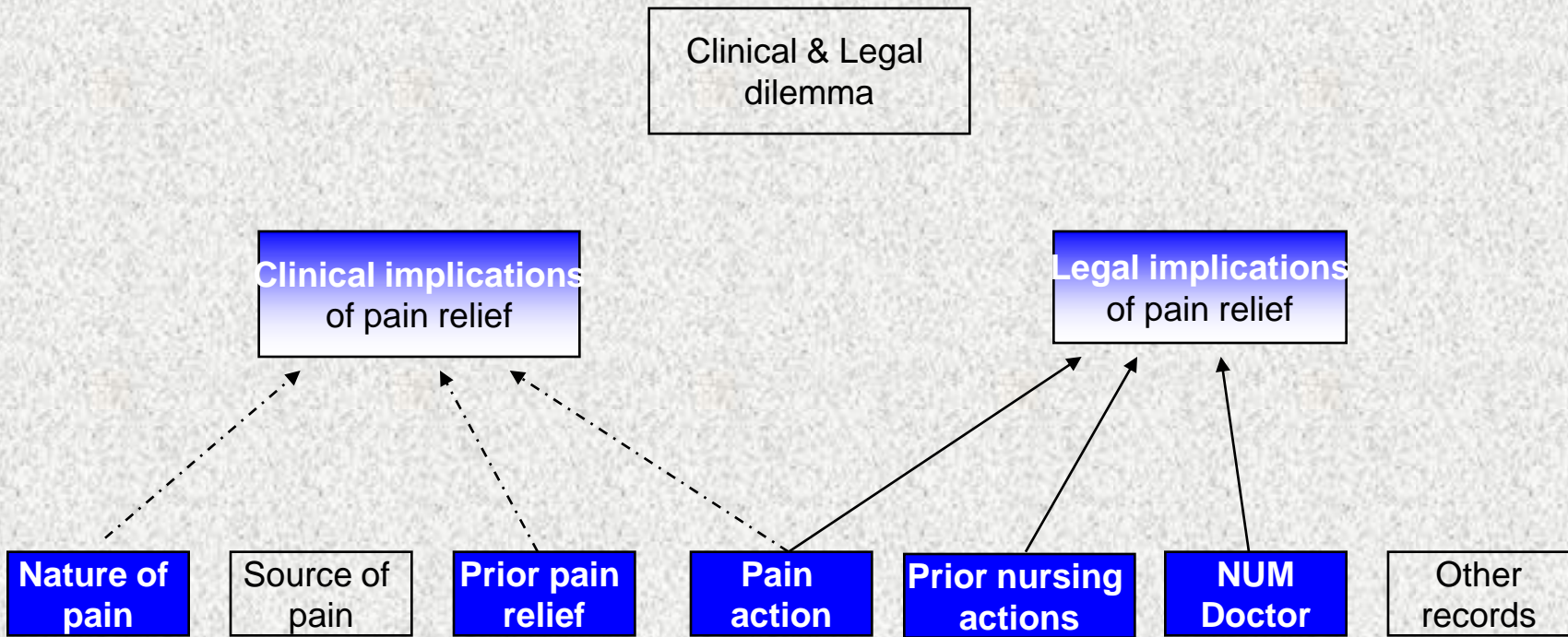
- I'd find out In fact I'd get in touch with the MO ... and I'd have a great deal of difficulty in solving this. I'd find out whether the medication had been charted somewhere else, whether they'd been signed for, and if someone had signed for them ... find out if they had actually been given. Maybe get in touch with the nurse from the previous shift, or the charge sister. The young boy needs pain medication, and if possible give it to him if his four or six hours or whatever is charted for him are up, and point out that whoever should have hasn't signed the charts.



RECORDS clinical vignette: Response of Deep Inflexible participant

Surface Adaptive Student response:

- I'd find out who it was, but I wouldn't dob her in or anything. I'd find out if you could give her more medication. Leave the space where she would mark it , and then write your own entry if you have to give more, if it was time, but not to fill in hers because it's not your shift and you didn't give it. If something went wrong then you'd pay for it, so that's your cover - even though that sounds mean. Just check out how much pain he's in. I'd do an assessment of him. Then if you feel that maybe the pain is strong enough, and if he was just given something very closely to when you came on, maybe he should be upgraded in medication or dosage. Then I'd just ring a doctor or something and just talk about it, and see how it goes.



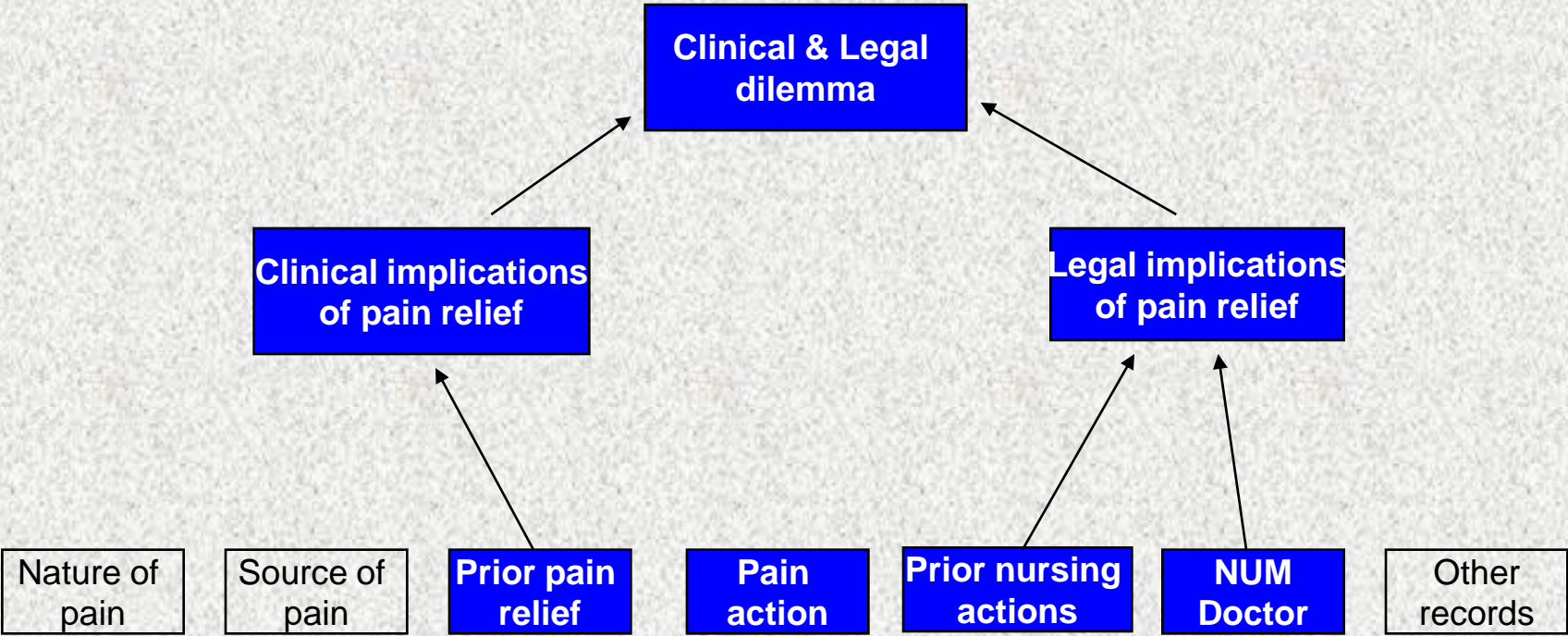
RECORDS clinical vignette: Response of Surface Adaptive participant

Deep Adaptive Student response:

- Well she may have not completed it either because she didn't give the drug, or she may have just given the drug but not completed the form, which means you're in a dilemma. ... But you're not supposed to just re-administer drugs after anyway, because they may have already had them and you'll overdose them. So you'd have to ... you'd have to keep in contact with that nurse and ask her whether she has or not. And then you're still in a legal predicament because she hasn't signed the form, so it's not fair to just go running in and giving it to him. ... But if he was in pain then you've got to give him the stuff, because you can't leave him in bed in agony. You'd have to get a doctor probably, if anything were to be legally right, and get him to re-chart something or chart more so that he can have that, because otherwise you put yourself in strife. Because if he ... if you give him something else and he overdoses then you'd be responsible because ... I don't know whether she'd be .. We'd both probably be responsible

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RECORDS clinical vignette: Response of Deep Adaptive participant

What was the influence of strategic disposition on clinical decision-making?

- How an individual conceptualises the need for regulating strategic choices does appear to impact on the structural quality of the clinical decision-making process.
- Given the complex and open-ended nature of most non-trivial clinical decisions, awareness of, and openness to the use of, more complex strategy options appears as an attribute of more successful clinical processing.
- Whether this is an attribute that influences the progression to greater expertise, or is an attribute that reflects such a progression is not able to be determined from the data. However, it is clear that both inflexibility and irresoluteness in strategic decision-making diminish the quality of representation of the clinical problem.

Is strategic decision-making moderated by Approach to Learning?

- An approach to learning implies a particular motive – strategy relationship that may be taken as indicative of the dispositional epistemology underlying the decision-making process.
- Deep learning implies a more complex, open-ended sense of clinical problems, and therefore of the processes underlying its expression.
 - In conjunction with an Adaptive approach to self-regulation, the deep student created a more complex representation of this problem when compared to the surface adaptive student. This suggests that effective self-regulation may not, on its own, predict depth of processing
 - In conjunction with an Inflexible approach to self-regulation, the deep student represented the clinical problem in greater breadth, but not depth, when compared to the response of the surface inflexible student. This suggests that inappropriate self-regulation may dampen the depth of processing achieved.

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