

**Content Coding for Contextualization of Care
("4C")**

Training & Coding Manual

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Patient centered decision making is the process of answering the question: "What is the best next thing for *this* patient at *this* time?" 4C is a process for assessing provider performance at patient centered decision making.

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Introduction

Contextualizing Care

Patient-centered clinical decision making requires taking into account patient context – that is each patient’s environment and health care related behavior – when planning their care. Content Coding for Contextualization of Care, or “4C,” is a tool for assessing how effectively clinicians provide care that is contextualized, and therefore patient-centered. Whereas other instruments focus on the *process* of the interaction (“Did the doctor encourage questions?”), 4C focuses on specific events and behaviors (“Did the doctor ask why *this* patient recently missed two appointments?”). When inattention to patient context results in an inappropriate plan of care, the oversight is coded as a “contextual error.”

While the relevance of patient context should be considered in all care planning, not all care planning requires adapting care to context. For instance, consider the case of a well insured hypertensive patient with a history of excellent medication adherence on a single once a day pill that no longer is sufficient to control his blood pressure. Before starting the second medication, the clinician should consider any contextual factors, including patient anxiety about needing another drug, but in most cases – particularly if the second pill is also once daily and can be given at the same time as the first pill -- the patient’s environment and behavior are not likely to be obstacles. Any major issues affecting care planning are likely to be biomedical – such as side effects of the medication.

On the other hand, suppose the patient’s deteriorating blood pressure control is related to losing their job and their health insurance, or to worsening cognitive status and a loss of ability to keep track of the dosing regimen, or depression leading to apathy. Each of these variables would constitute the context in which the patient’s condition is getting worse. And the failure to address the context and mindlessly add a second medication would be inappropriate. It would be a contextual error.

Contextual issues can be spotted by the attentive clinician who is attuned to them, particularly if he/she has developed the habit of always considering them in the “differential” for a patient with a health care need. Sometimes there are obvious hints, such as a patient who seems to have stopped taking his medications saying “boy it’s been tough since I lost my job” (loss of health insurance) or sometimes it’s more subtle such as a patient appearing confused about his medication when asked (cognitive loss). In the absence of such hints – hints that we have termed “contextual red flags” – the clinician can simply ask a direct question: “I notice your blood pressure is no longer well controlled. This could be just the natural progression of your condition, but I want to be sure. Are you having any trouble taking your medication as prescribed? Can you tell me exactly how you take it and when? Did you miss any dosages today?”

Identifying Contextual Error

Just as health care providers can be trained to spot and address contextual issues essential to patient care, non-clinician coders can be trained to spot them as they do not require biomedical knowledge to recognize. When spotted, coders can then track the provider’s behavior to see if he/she has also identified the contextual issue and, if so, if the issues are addressed during the encounter to avoid a contextual error.

The following coding manual describes the process of assessing whether care plans, when appropriate, are contextualized. It is a process of classifying encounters into one of four patient presentations and clinician responses:

- A. The patient did not present any information suggesting contextual issues in care.
- B. The patient presented a contextual red flag, but the health care provider did not probe it.
- C. The patient presented a contextual red flag, and the health care provider probed it but did not incorporate the context into the plan of care.
- D. The patient presented a contextual red flag, and the health care provider probed it and incorporated the context into the plan of care.

Presentations in category A do not require contextualization of care. Presentations in category D represent contextualized care. Presentations in categories B and C represent contextual errors.

Brief Overview of 4C Process

4C may be conducted by as few as two individuals or as many as five, with the additional personnel required to verify inter-rater reliability, other sources of evidence for validity, or to track outcomes of successes or failures to contextualize care. Conceptually 4C consists of the following:

Subject Recruitment

Recruitment of clinicians and patients: Following an informed consent process for each participating health care provider (assuming 4C is utilized a part of research protocol. Informed consent is not required for QA purposes), patients in their practice are informed when they sign in for their appointment that a research assistant is available to speak with them about voluntarily assisting with a project to evaluate their care. This assent process precedes the consent process which follows. The consent process is structured to minimize self-selection bias, as patients are not given specifics about what aspects of the encounter will be assessed. Those who enroll (44% on average based on our experience across multiple settings) agree to carry a small digital audio-recorder into the encounter and return the device to the research assistant (RA) when they leave.

Coding

- 1) *Contextual red flag identification:* Following an encounter, the first step for coders is to determine if there were any contextual issues -- “contextual red flags” -- that the clinician would need to have explored to provide appropriate care. A contextual red flag is defined as anything a patient says or that was observed about their situation or behavior that suggests unaddressed contextual factors may be contributing to problems with their care. The search for contextual red flags begins with a structured chart review by a contextual red flag “screener” looking for evidence of missed appointments, non-adherence with medications or follow through on tests or labs, or preventable deterioration of a chronic condition, such as poor diabetes or blood pressure control. If the medical record is unrevealing, then the screener

listens to the audio-recording to determine if the patient made statements indicative of underlying contextual issues essential to their care.

Examples:

- a. Contextual red flag identified from chart review: Rising Hgb A1c in patient with diabetes which has been previously well controlled.
 - b. Contextual red flag identified from audio-recording: Visually impaired veteran with diabetes mentions that his daughter, who doses his insulin, is relocating to another city to maintain her employment.
- 2) *Coder(s) formulate an unambiguous direct probe of red flag:* The coder(s) compose an unambiguous health care provider probe to the identified contextual red flag, e.g. "I notice that your diabetes used to be well controlled but your sugars have been very high over the last couple of months. What do you think is going on in your life that might be a factor in this problem?" The probe is always in the form of a question by the clinician in response to a red flag. The purpose of this exercise is to clearly frame in the coder's mind what they should be listening for to indicate that the health care provider has noticed and is pursuing the contextual red flag.
 - 3) *Coder listens for clinician probe:* The coder then listens for whether the provider pursued the contextual red flag in a manner that substantively approximates their direct probe.
 - 4) *Coder listens for a patient reveal in response to a probe:* If the health care provider probed, the coder determines whether the patient revealed contextual information that is relevant to care, such as "I've been moved to the night shift and it's a lot more difficult for me to take my medication when I'm supposed to."
 - 5) *Coder formulates an unambiguous direct response to the patient reveal:* If the patient reveals contextual issues in response to the probe, the coder formulates an unambiguous response to the reveal that indicates the health care provider recognized the need to contextualize the care plan, e.g. "Let's talk about how you could adapt your medication schedule to fit your new work schedule."
 - 6) *Coder listens for contextualization of care plan:* The coder then listens for whether the provider recommends a plan of care that substantively approximates their direct probe.

These six steps are the framework for content coding for contextualization of care. The findings from steps 1 (Is there a contextual issue?), 3 (Did the health care provider explore it?), 4 (Did the patient reveal contextual issues that need to be addressed?), and 6 (Did the clinician avoid a contextual error?) are entered for each encounter into a database. If there is no contextual red flag, coding is aborted and the audio-recording is erased.

Coding can be quite nuanced. The nuances of 4C coding pertain to the variation in how clinicians demonstrate their attention to context. In the examples above, clinicians directly question patients about red flag issues. But what about instances in which health care providers demonstrate from their behaviors that they are attending to context, even if they never probe? Our coding instructions are designed to always give the clinician the benefit of the doubt (see “Awareness” and “Benefit of the Doubt” coding rules). The instructions are also designed to minimize uncertainty for well trained coders by providing multiple examples of how to code ambiguous situations. Inter-rater agreement has been nearly 90%.

Composition of Coding Team

As noted, 4C can be conducted by as few as 2 coders and as many as 5. This manual describes the most complex design with 5 coders, but the roles of these individuals can be collapsed into as few a number as available, with loss of certain non-essential measures to the coding process, such as inter-rater agreement or tracking of long term outcomes

In this manual, the 4C Team consists of the following 5 people (listed in the order that they review a recorded encounter):

1. *Chart coder* – identifies Levels 1-2 red flags from medical record, scores for outcomes
2. *Audio coding supervisor* – identifies level 3 red flags, breaks ties in coding when there is a discrepancy between audio coders 1 & 2
3. *Audio coder 1* – codes audio encounters, identifies possible level 4 red flags
4. *Audio coder 2* – codes audio encounters, identifies possible level 4 red flags
5. *Project director* – Second rater for level 3 red flags, oversees coding process

The 4C Analysis is divided into three phases: Identifying Red Flags, Coding the Encounters, and Scoring for Outcomes (optional). Each is described in the sections that follow. The last chapter, chapter 4, describes the step by step process of entering data into spreadsheets.

Chapter 1: Identifying Red Flags

Definition

The first step in 4C is screening for contextual red flags. A **contextual red flag** is defined as anything a patient says or that is observed about their situation or behavior that suggests unaddressed contextual factors may be contributing to problems with their care. Red flags can be found in the medical chart or by listening to issues brought up in the audio recording. Red flags are classified into 4 levels, with level 1 red flags identified first, then level 2, 3, and 4 sequentially.

Level 1 Red Flags

The chart coder begins the coding process by looking in patient's medical record for level 1 red flags, following an algorithm and adhering to a data extraction instrument. Level 1 red flags meet two criteria: (a) they can be identified based on predetermined criteria using chart extraction instruments and (b) they are sufficiently severe that the statistical significance of interventions to improve outcomes can be measured. For instance, addressing the underlying cause of a patient's missing 16 appointments in a year should result in a statistically measurable improvement.

The following protocol may be adapted based on the characteristics of the selected patient population. For instance, other medical conditions such as COPD or Asthma could be substituted for the chronic conditions below.

The chart coder checks first for an uncontrolled chronic condition:

1. Diabetes – To be considered as a red flag the patient's Hemoglobin A1c must be greater than 9.0
2. Hypertension – To be considered as a red flag, the patient's SBP must be greater than 160 OR the DBP must be greater than 100

Note that the chart coder is assigned to identify only one contextual red flag. In our protocol, he or she will always start by looking for a poorly controlled chronic condition, alternating between reviewing patient data in the medical record for diabetes or hypertension. If he/she does not find one of these uncontrolled chronic conditions, he/she will then review the record for documented missed appointments, missed tests and procedures and medication adherence, again alternating the order in which the screening of these occurs. Criteria for inclusion is as follows:

1. Missed Appointments – Patient must have 16 or more scheduled visits in the past 12 months. To count as a red flag, the patient's Return Visit Adherence (RVA) rate must be less than 75%. The RVA rate is calculated by dividing the number of missed appointments by the total number of appointments scheduled.
2. Tests and Procedures – Patient must have 4 or more scheduled lab orders in the past 12 months. To be considered a red flag, patient must have one or more labs pending 30 days after they were ordered. To count as a red flag, the patient's Test & Procedure Adherence (TPA) rate must be less than 75%. The TPA rate is calculated by dividing the number of missed Tests and Procedures by the total number scheduled.
3. Medication Adherence – Patient must have 4 or more prescribed medications in the past 12 months. To count as a level 1 red flag, the patients Medication Adherence (MA) rate must be less than 75%. The MA rate is calculated by dividing the number of missed medication fills/refills by the total number of medications prescribed.

Note: Diabetes and hypertension medications are excluded in this protocol as non-adherence to these medications would result in uncontrolled chronic conditions which have already been screened for as red flags above. Also, we recommend tracking generally only chronic medications where it is easier to ascertain that if a patient fails to renew their medications prescribed there is a significant adherence problem with clear implications for the patient's health care. We tracked the following classes of medications: mental health, anticoagulants, thyroid replacement, and asthma and allergy.

Level 2 Red Flags

If the chart coder finds nothing in the medical record that fits the criteria for a level 1 red flag, he/she will look for a level 2 red flag. Level 2 red flags consist of the following:

1. Diabetes - Patient's A1c is greater than 8
2. Hypertension - Patient's SBP greater than 140 OR the DBP greater than 90
3. Patient misses or cancels TWO or more appointments in the past 4 months
4. Patient misses ONE or more medication fill/refill in the past 4 months
5. Patient misses ONE or more lab tests or procedures in the past 4 months
6. Patient has TWO or more visits to the Urgent Care Clinic in the past 4 months
7. Patient has TWO or more visits to the Emergency Room in the past 4 months

Note: Level 2 red flags meet only the first of the two criteria listed above. For instance, addressing the underlying cause of missed appointments in a patient who has missed just two appointments in the last 4 months should result in no further missed appointments, but this effect is not statistically significant.

When the chart coder finds a level 1 or level 2 red flag, he/she adds the into a Master List of Coded Encounters (see below).

Level 3 Red Flags

If the chart coder finds neither a level 1 nor level 2 red flag the audio coding supervisor will LISTEN to the audio recording of the encounter for a level 3 red flag. A level 3 red flag has the characteristics of a level 2 red flag, except the information is revealed during the encounter rather than recorded in the record prior to the encounter. Examples of level 3 red flags are listed below.

1. It is revealed (by health care provider or patient) that patient's blood pressure is running high during visit.
2. It is revealed (by health care provider or patient) that patient has modified or stopped taking medications without consulting with health care provider.
3. It is revealed (by health care provider or patient) that patient has run out of medications or medication has expired.
4. Patient reveals a misunderstanding for general procedures in making appointments or labs.
5. Patient reveals a discrepancy such as getting good blood sugar or blood pressure readings at home but poor readings clinic (or vice-versa).

6. Patient refuses procedure such as a colonoscopy.
7. Patient refuses flu, pneumonia or tetanus vaccine.
8. Patient reveals there is a problem with following health care provider's orders (adhering to medications, exercise, diet, appointments, labs, etc.)
9. Other: any other issue revealed that would suggest there may be a contextual problem with patient's care (example: patient comments that they are having a hard time affording their medication which is a brand name product).

Reminder, a contextual red flag is anything a patient says or that is observed about their situation or behavior that suggests unaddressed remediable contextual factors may be contributing to problems with their care, including their self-care.

Note: A red flag must be related to a patient's health care. For instance, a patient's financial problems are not relevant if they come up incidentally and the patient is not having any trouble affording their care (e.g. because they remain well insured):

LEVEL 3 RED FLAG	NOT CONSIDERED A LEVEL 3 RED FLAG
Pt states he stopped taking his meds because he got laid off and lost his insurance	Pt states he got laid off (no other issues mentioned in encounter)

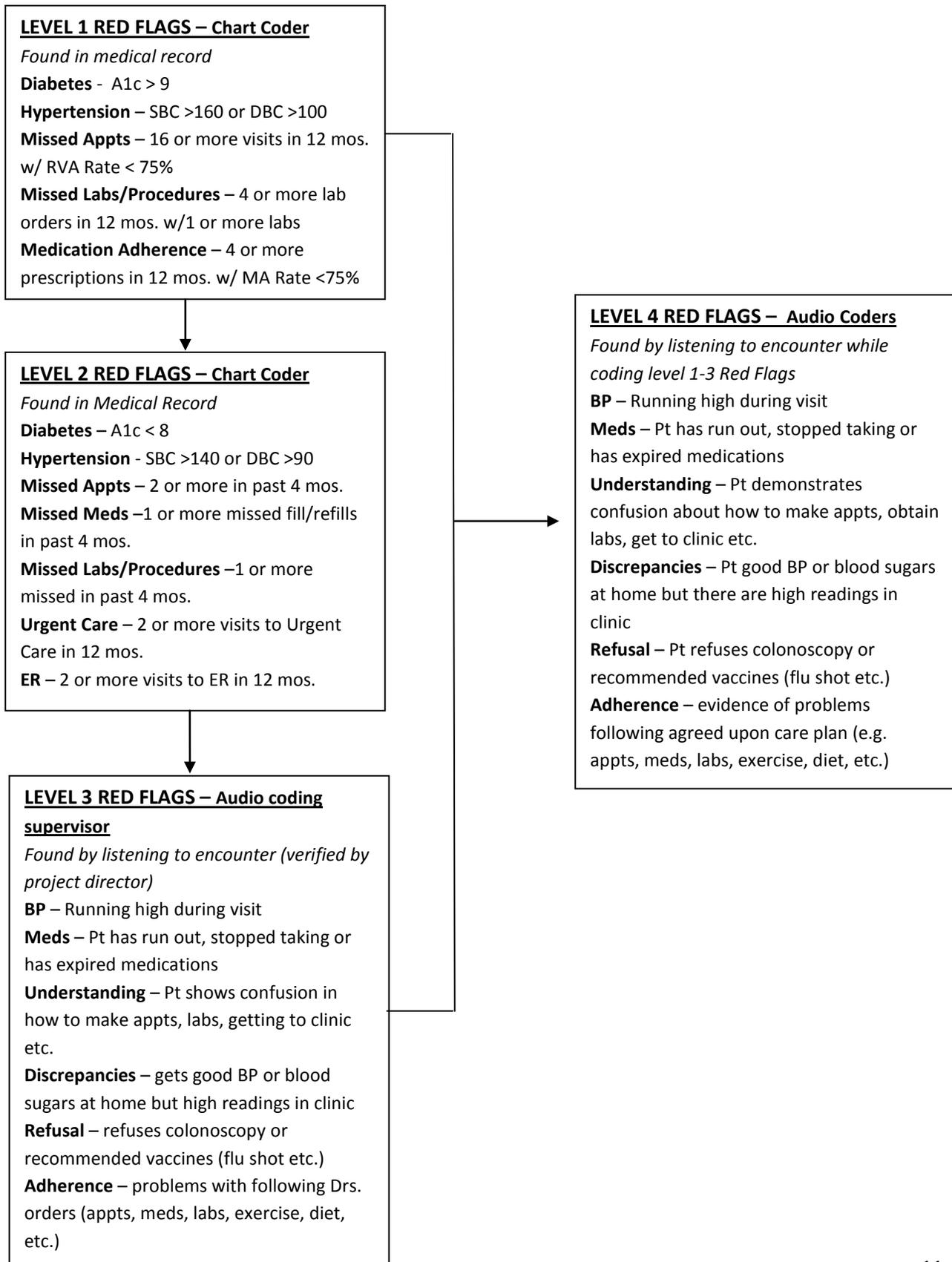
All level 3 red flags identified by the audio coding supervisor are reviewed by the project director and any disagreements are resolved by consensus. Once confirmed, the level 3 red flag is added to the Master List of Coded Encounters.

Level 4 Red Flags

Level 4 red flags are those identified by the audio coders incidentally when listening to the audio recording of an encounter during the second phase of the coding process, which is the assessment of the clinician's performance (detailed below). Both coders must independently find the same red flag in order for it to count but it does not require approval by the audio coding supervisor or project director. The fact that both coders came to the same conclusion independently is sufficient evidence for reliability. There may be multiple level 4 red flags in each encounter. These are included in the Master List of Coded Encounters.

Note: The rule of thumb for level 3 and level 4 red flags is that they have to be approved by two individuals. For level 3 red flags they are the audio coding supervisor & project director. For level 4 they are the two individual audio coders.

The following flow diagram illustrates the processes described above: **IDENTIFYING RED FLAGS**



Chapter 2: Coding Encounters

After a red flag is identified, the audio coding supervisor copies the encounter into the two individual coders' spreadsheets. The coders listen to the encounter and code for contextual probe, contextual problem and contextual plan of care (POC).

Definitions:

Contextual Probe

A **contextual probe** is defined as anything a health care provider says that indicates that he or she is investigating *contextual* reasons for problem(s) with a patient's care.

I see your blood pressure is out of control, why is that?

You've missed 7 out of 10 of your last appointments, how come?

You haven't refilled your asthma meds and the record shows they have expired. What's going on?

Contextual Problem

A **contextual problem** is the reason given by the patient as to why the red flag exists. It is the underlying reason why the patient's care plan is not or will not likely be effective until the problem is addressed. Our context is everything going on around us that is relevant to the situation of interest or concern. Most of the contextual issues that cause problems for care planning fall into one of the following ten domains of context: competing responsibilities, social support, access to care, economic situation, skills and abilities, emotional state, cultural attitude, spiritual beliefs, attitude towards illness and relationship with healthcare providers.

I'm confused when I should take my meds. (skills & abilities)

I live so far away from the clinic, it's hard to get here. (access to care)

I don't have insurance and can't afford them. (economic situation)

Domains of Context: A patient contextual problem will fall into one of 10 domains of context. When deciding if a contextual problem revealed in the encounter is contextual, coders can ask themselves, does it fall into one of the 10 specific domains? If not, the problem is not likely contextual. The 10 domains of context are:

1. **Competing Responsibilities** – "I take care of a sick relative" or "Can't get off work for appts."
2. **Social Support** – "My wife works & can't help me with my ..."
3. **Access to Care** – "I live in the countryside without a car"
4. **Economic Situation** – "I don't work and can't afford..."
5. **Skills & Abilities** – "I don't understand..." or "I have bad eyesight & can't see med bottle print."
6. **Emotional State** – "He is too distressed to consider his options now."
7. **Cultural Attitude** – "Where I come from, we just go to the doctor when we are sick. I don't like to get tested for things I don't have."
8. **Spiritual Beliefs** – "I don't need treatment, God will heal me if it is his will"
9. **Attitude Toward Illness** – "Diabetes is not that big of deal, I can eat what I want."
10. **Relationship with Health Care Providers** – "I don't trust doctors."

Contextualized Plan of Care

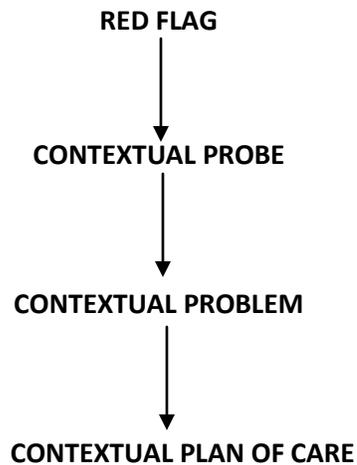
A **contextualized plan of care (POC)** takes into account a patient's contextual problems so as to resolve obstacles to their benefiting from the plan of care.

I'll write down each of your meds as well as when to take them. Put this on your refrigerator.

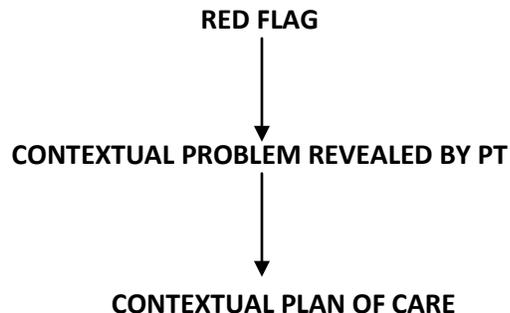
There is clinic closer to where you live, would you like to switch your care over there?

There is a generic available that is much cheaper. I will prescribe it for you.

Content coding requires that the coder is following the actual logic of the discussion: the contextual probe must be a question by the provider about the red flag. The contextual problem must be the information either uncovered by the contextual probe or incidentally revealed by the patient – see below.* And the contextual POC must be a logical way of addressing the contextual problem. Here is the sequence:



*Sometimes patients reveal a contextual problem before a health care provider has probed. In these cases, the coder skips over coding for a contextual probe, records the problems, and listens for a contextual POC. In these cases the sequence is as follows:



Coding Algorithm

The coding algorithm consists of a series of questions each coder asks themselves to identify the presence or absence of a contextual probe, a contextual problem and contextual POC. The algorithm always begins with the contextual red flag.

An essential task of the coder in steps 2 and 7 below, is generating an “overt probe” and an “overt plan of care.” These are, respectively, questions and statements that – if they were to come from the provider – would indicate indisputably that the provider is addressing the contextual problem. They serve as an anchor, or point of comparison, for the provider’s actual behaviors. We have found that this approach leads to high inter-rater agreement across multiple coders. In other words, coders independently agree on what would constitute an overt response to a red flag or a contextual problem.

Once an overt probe is generated, the coder listens for the provider’s response and then makes a judgment call about whether the provider’s response is close enough to the overt probe to count. Again, while this is a judgment call, we’ve found that trained coders tend to agree independently. This is because most people can agree on whether question B is basically an alternative to question A

Examples

Example of coding algorithm with contextual probe, problem & POC:			
	<i>Red Flag:</i>	<i>High A1c 9.1</i>	
	<i>Question</i>	<i>Response</i>	<i>Notes</i>
1	<i>Coder formulates an overt probe:</i>	<i>Why are your blood sugars out of control?</i>	An overt probe is simply a direct question about the red flag.
2	<i>Probe heard:</i>	<i>“Your A1c is really high, what’s happening?”</i>	
3	<i>Was it a contextual probe?</i>	Yes	
4	<i>Is it close enough to the overt probe to be credited?</i>	Yes	
5	<i>Contextual Problem revealed in response to probe:</i>	Pt has eye problems and can’t read the small numbers on his insulin syringe	
6	<i>Contextual problem revealed by pt. without specific probing by provider:</i>	Na	Not applicable here. See example below
7	<i>Coder formulates an overt contextual P.O.C.:</i>	<i>Find another method for pt to get his insulin</i>	An overt POC is any work-a-round the contextual issues that is getting in the way of the patient’s care.
8	<i>P.O.C. heard:</i>	<i>“I’ll have you meet with the pharmacist</i>	

		after your visit so you can get the pen; it is much easier to read.”	
9	<i>Was it contextual?</i>	Yes	
10	<i>Is it close enough to the overt P.O.C. to be credited?</i>	Yes	

Example of coding algorithm with contextual problem revealed by patient:			
	<i>Red Flag:</i>	<i>High A1c 9.1</i>	
	<i>Question</i>	<i>Response</i>	<i>Notes</i>
1	<i>Coder formulates an overt probe:</i>	<i>Why are your blood sugars out of control?</i>	
2	<i>Probe heard:</i>	None	The provider did not ask about the contextual issue
3	<i>Was it a contextual probe?</i>	Na	
4	<i>Is it close enough to the overt probe to be credited?</i>	Na	
5	<i>Contextual Problem revealed in response to probe:</i>	Na	
6	<i>Contextual problem revealed by pt. without specific probing by provider:</i>	Pt tells Dr. his eyes are “bad” and can’t read the small numbers on his insulin syringe	The patient bring up the issue anyway
7	<i>Coder formulates an overt contextual P.O.C.:</i>	<i>Find another method for pt to get his insulin</i>	
8	<i>P.O.C. heard:</i>	“I’ll have you meet with the pharmacist after your visit so you can get the pen; it is much easier to read.”	The physician picks up on the patients comment and addressed it appropriately
9	<i>Was it contextual?</i>	Yes	
10	<i>Is it close enough to the overt P.O.C. to be credited?</i>	Yes	

Example of coding algorithm with contextual probe made but NOT considered close enough to be counted:			
	<i>Red Flag:</i>	<i>High A1c 9.1</i>	
	<i>Question</i>	<i>Response</i>	<i>Notes</i>
1	<i>Coder formulates an overt probe:</i>	<i>Why are your blood sugars out of control?</i>	
2	<i>Probe heard:</i>	“So you live alone?”	The provider asks a contextual question

			but it's not about the red flag
3	<i>Was it a contextual probe?</i>	Yes	
4	<i>Is it close enough to the overt probe to be credited?</i>	No	Question was contextual but did not get at why the patient's sugars were high
5	<i>Contextual Problem revealed in response to probe:</i>	Na	
6	<i>Contextual problem revealed by pt. without specific probing by provider:</i>	No	
7	<i>Coder formulates an overt contextual P.O.C.:</i>	Na	Coder can't formulate an overt plan of care because underlying problem was never identified.
8	<i>P.O.C. heard:</i>	Na	na
9	<i>Was it contextual?</i>	Na	
10	<i>Is it close enough to the overt P.O.C. to be credited?</i>	Na	

Example of coding algorithm with a biomedical probe made:			
	<i>Red Flag:</i>	<i>High A1c 9.1</i>	
	<i>Question</i>	<i>Response</i>	<i>Notes</i>
1	<i>Coder formulates an overt probe:</i>	<i>Why are your blood sugars out of control?</i>	
2	<i>Probe heard:</i>	<i>"You take metformin and insulin for your diabetes?"</i>	Provider's question is biomedically focused. Does not consider contextual factors.
3	<i>Was it a contextual probe?</i>	No	
4	<i>Is it close enough to the overt probe to be credited?</i>	No	
5	<i>Contextual Problem revealed in response to probe:</i>	Na	
6	<i>Contextual problem revealed by pt. without specific probing by provider:</i>	None	
7	<i>Coder formulates an overt contextual P.O.C.:</i>	Na	Coder can't formulate an overt plan of care because underlying problem was never

			identified.
8	<i>P.O.C. heard:</i>	Na	
9	<i>Was it contextual?</i>	Na	
10	<i>Is it close enough to the overt P.O.C. to be credited?</i>	Na	

Example of coding algorithm contextual POC but NOT considered close enough to overt to count:			
	<i>Red Flag:</i>	<i>High A1c 9.1</i>	
	<i>Question</i>	<i>Response</i>	<i>Notes</i>
1	<i>Coder formulates an overt probe:</i>	<i>Why are your blood sugars out of control?</i>	
2	<i>Probe heard:</i>	<i>“Why are your sugars out of control?”</i>	
3	<i>Was it a contextual probe?</i>	Yes	
4	<i>Is it close enough to the overt probe to be credited?</i>	Yes	
5	<i>Contextual Problem revealed in response to probe:</i>	Patient has bad eyesight and can't read small numbers on his insulin syringe	
6	<i>Contextual problem revealed by pt. without specific probing by provider:</i>	Na	
7	<i>Coder formulates an overt contextual P.O.C.:</i>	<i>Find another method for patient to administer his insulin, such as pre-loaded syringes.</i>	
8	<i>P.O.C. heard:</i>	<i>“We’ll arrange for you to get travel reimbursement so you can come see me more regularly.”</i>	
9	<i>Was it contextual?</i>	Yes	
10	<i>Is it close enough to the overt P.O.C. to be credited?</i>	No	It doesn't address the contextual problem which is poor eyesight.

Example of coding algorithm with biomedical POC:			
	<i>Red Flag:</i>	<i>High A1c 9.1</i>	
	<i>Question</i>	<i>Response</i>	<i>Notes</i>
1	<i>Coder formulates an overt probe:</i>	<i>Why are your blood sugars out of control?</i>	
2	<i>Probe heard:</i>	<i>“Why are you sugars out of control?”</i>	
3	<i>Was it a contextual probe?</i>	Yes	

4	<i>Is it close enough to the overt probe to be credited?</i>	Yes	
5	<i>Contextual problem revealed in response to probe:</i>	Patient has bad eyesight and can't read insulin syringe	
6	<i>Contextual problem revealed by pt. without specific probing by provider:</i>	Na	
7	<i>Coder formulates an overt contextual P.O.C.:</i>	<i>Find another method for patient to get his insulin</i>	
8	<i>P.O.C. heard:</i>	Increase insulin dosage	The provider has missed the boat here. The patient indicated the contextual problem, but the provider ignored it in planning care.
9	<i>Was it contextual?</i>	No	
10	<i>Is it close enough to the overt P.O.C. to be credited?</i>	No	The contextual problem was mishandled as if it were just a biomedical problem.

Categorizing statements and questions by providers and patients is not always as straightforward as the example above. We have developed principles and guidelines for assisting with coding complex or ambiguous interactions.

Coding Principles:

Awareness

Sometimes it is ambiguous as to whether a provider's statement or question is in fact a probe in response to a contextual red flag. In such instances, the coder looks for evidence of awareness of the contextual issues that need to be explored based on the provider's subsequent comments and questions.

Awareness is demonstrated	Why does it count?	Awareness is NOT Demonstrated	Why doesn't it count?
RED FLAG: Missed appts. Unambiguous probe: "Looks like you've missed a lot of appts." <i>Followed by...</i> "Do you have any trouble	The two comments taken together indicate the provider is aware of the red flag issues and is looking specifically for underlying contextual causes.	RED FLAG: Missed appts. Dr. "Do you have any trouble getting to the VA? I want you to come back next week and get your BP rechecked with the nurse."	Health care provider starts out with a question that sounds like a probe in response to the contextual red flag, but the subsequent comment indicates he/she is not aware.

getting to the VA?"			
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Benefit of the Doubt

Coders should give the health care provider the benefit of the doubt in cases where it is difficult to determine whether or not awareness is demonstrated.

Benefit of the doubt is given	Why does it count?	Benefit of the doubt is NOT given	Why doesn't it count?
RED FLAG: Missed appts. Dr. "I haven't seen you in over a year. Can you come back next month?"	It's not clear whether the provider's question represents awareness of possible obstacles to returning or whether he/she is framing a request as a polite question? Coder gives credit for the former.	RED FLAG: Missed Labs Dr. "I want you to come back next week and get your BP rechecked with the nurse. Can you make it in then?"	Healthcare provider is referring to a different issue (pt's BP) when asking about pt's transportation issues. Also, this appears to be a routine inquiry about patient's future schedule, not their past missed appts. The provider shows no awareness to RED FLAG so in this case Benefit of Doubt would not be given.

Simon's Rule

If the health care provider makes a statement (rather than asking an overt question) that demonstrates awareness of the red flag and the patient responds by revealing a contextual problem relating to the red flag, the health care provider would be given credit for a contextual probe. Awareness MUST be present for the health care provider to be given credit for a probe under Simon's Rule. The purpose of Simon's rule is to credit a provider who may prefer to make an observation as a way of prompting discussion about a contextual issue rather than ask a question, and whose approach yields the relevant information (it is named after Simon Auster, MD who observed that an indirect or unconventional approach should be credited if it has the desired effect. It may reflect the provider's subtle appreciation of how to interact).

Simon's Rule is applied.	Why does it count?	Simon's Rule is NOT applied.	Why doesn't it count?

<p>RED FLAG: High A1c</p> <p>Dr: “Your A1c is out of control.”</p> <p>Pt: “I ran out of insulin! That new phone refill system is plain confusing.”</p>	<p>Pt responded with possible contextual reason to health care provider’s comment. Health care provider’s comment also demonstrated awareness of RED FLAG.</p>	<p>RED FLAG: High A1c</p> <p>Dr: “Your A1c is out of control.”</p> <p>Pt: “Yeah I know.”</p>	<p>Pt did not respond with a contextual reason. Health care provider’s statement in and of itself is <u>not</u> considered a contextual probe.</p>
<p>RED FLAG: High BP</p> <p>Dr. “Have a seat. So, it says here your BP is high today.”</p> <p>Pt: “My wife is going through chemo & I don’t have time to worry about taking my pills when caring for her.”</p>	<p>Pt responded with possible contextual reason to health care provider’s comment. Health care provider’s comment also demonstrated awareness of RED FLAG.</p>	<p>RED FLAG: High BP</p> <p>Dr. “Have a seat. What can we do for you today?”</p> <p>Pt: “Well, it’s tough right now, my wife is going through chemo and I keep forgetting to take my BP meds.”</p>	<p>Health care provider’s comment did not demonstrate awareness. In this case, pt’s comment would be a PT REVEAL.</p>

Probing Guidelines:

“Why” and the “Implied Why”

The word “why” is the stem of many if not most overt probes. If a health care provider asks “why” or another open ended probe such as “how come” he or she is almost always given credit for a contextual probe.

Why counts as Contextual:	Why is it considered a contextual probe?
<p>RED FLAG: High A1c</p> <p>Dr. “Your A1c indicates your sugars are out of control. Why are your sugars so high?”</p>	<p>The health care provider is probing for a possible contextual issue of why the patient’s sugars are high.</p>

Exception to the rule: If the red flag is ER or urgent care visits, the health care provider would not get credit for a contextual probe for asking why the patient was in the ER. In this case it would depend on what the patient’s answer was and would require an additional probe.

Why counts as Contextual:	Why is it considered a contextual probe?	“Why” doesn’t count:	Why doesn’t it count?

<p>RED FLAG: 2 ER Visits in 4 months.</p> <p>Dr: "Why were you in the ER?"</p> <p>Pt: "I had to get my meds refilled."</p> <p>Dr: "Why didn't you come to the clinic for that?"</p>	<p>Health care provider continued to probe for a possible contextual issue.</p>	<p>RED FLAG: 2 ER Visits in 4 months</p> <p>Dr: "Why were you in the ER?"</p> <p>Pt: "I had chest pains."</p>	<p>In this case "why" would be considered a biomedical question.</p>
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The Implied Why:

Often a health care provider might not be asking a direct question but it is clear from the inflection of their voice that they are probing. To get credit, the health care provider must demonstrate an awareness of red flag.

Why counts as An "Implied Why":	Why is it considered a contextual probe?	NOT an "Implied Why":	Why doesn't it count?
<p>RED FLAG: Missed appts.</p> <p>Dr. "You didn't go to the cardiologist?"</p>	<p>The health care provider is asking a question that probes a possible contextual issue and is aware pt has missed appt.</p>	<p>RED FLAG: Missed appts.</p> <p>Dr. "When is your next cardiology appt?"</p>	<p>Health care provider is talking about appts. but does not demonstrate awareness that pt has missed prior appointments. Also, question does not probe for context.</p>
<p>RED FLAG: Dr. notices pt missed his colonoscopy</p> <p>Dr.: "Are you <i>willing</i> to get a colonoscopy?"</p>	<p>The word <i>willing</i> indicates that Dr. is probing for context.</p>	<p>RED FLAG: Dr. notices pt missed his colonoscopy</p> <p>Dr.: "You are due for a colonoscopy, can we schedule one?"</p>	<p>Dr. asking, "can we schedule one" is a routine question that would require an additional probe, if pt. said no.</p>
<p>RED FLAG: High BP</p> <p>Dr. "Do you think your BP is high because you are in pain <i>or...</i>"</p>	<p>The open-endedness of this question indicates that health care provider is open to any response and is aware he/she can't assume the patient just needs a higher dosage of medication.</p>		

Contextual vs. Conversational Probes

In many cases health care providers ask contextual questions such as where a patient lives/works, who a patient is living with etc. These questions are not counted unless they can be clearly linked to the red flag.

Contextual:	Why is it considered	Conversational:	Why is it considered conversational?
<p>RED FLAG: Missed appts:</p> <p>Dr: "How are you today?"</p> <p>Pt: "Lousy, it's really tough to get here at this time of day."</p> <p>Dr. "Are you working?"</p>	<p>Health care provider's question can be linked to the red flag. "Are you working" can be considered a probe for a pt's competing responsibilities.</p>	<p>RED FLAG: Missed appts.</p> <p>Dr: "How are you today?"</p> <p>Pt: "Things are great."</p> <p>Dr: "Are you working?"</p>	<p>This probe is considered conversational because it is not linked to red flag.</p>
<p>RED FLAG: High A1c</p> <p>Dr. "How are you today? I see your sugars are high."</p> <p>Pt. "Yeah, I know."</p> <p>Dr: "Are you still living with your daughter?"</p>	<p>Health care provider's question indicates that he is exploring contextual reasons for red flag. "Are you still living with your daughter" could be considered a probe for issues with pt's social support.</p>	<p>RED FLAG: High A1C</p> <p>Dr: "How are you today? Nice weather, huh?"</p> <p>Pt: "Yes, I didn't have to wear my coat."</p> <p>Dr: "Are you still living with your daughter?"</p>	<p>This probe is considered conversational because it is not linked to red flag.</p>

Contextual vs. Biomedical Probes

In some cases coders must determine if the line of questioning from health care provider is contextual or biomedical.

Contextual:	Why is it considered contextual?	Biomedical:	Why is it considered biomedical?
<p>RED FLAG: High A1c</p> <p>Dr: "Are you taking your meds like you are supposed to?"</p>	<p>Health care provider is considering a possible contextual issue (skills & abilities) as to why patient's A1c is high.</p>	<p>RED FLAG: High A1c</p> <p>Dr: "Are you taking your meds -- any bad reactions?"</p>	<p>Question is structured to elicit a response about drug reactions not adherence.</p>
<p>RED FLAG: High BP</p> <p>Dr: "Who does the cooking at your house?"</p>	<p>Health care provider is considering a possible contextual issue (patient has lack of control over diet).</p>	<p>RED FLAG: High BP</p> <p>Dr: "Are you eating a lot of salty foods?"</p>	<p>Health care provider is not exploring possible contextual ("outside of the skin") issues. Question is a narrow biomedically based inquiry about a possible cause of high BP.</p>

Contextual vs. Standard Practice Probe

In some cases a probe made by a health care provider that could be contextual is actually a standard question that is intended to elicit biomedical information, and is utilized regardless of the patient’s context.

To be considered contextual, in such cases, a contextual problem must be revealed for the health care provider’s question to count as a contextual probe.

Contextual:	Why is it considered contextual?	Good Practice:	Why is it considered standard practice?
<p>RED FLAG: High BP</p> <p>Dr. “Do you check your BP at home?”</p> <p>Pt: “Naaa”</p> <p>Dr. “Why not?”</p>	<p>Dr. took the extra step of probing for a contextual reason that could be account for the red flag.</p>	<p>RED FLAG: High BP</p> <p>Dr: “Do check your BP at home?”</p> <p>Pt: “Everyday”</p> <p>Dr: “What are the readings you are getting?”</p>	<p>The question in and of itself “Do you check your BP at home?” is standard for determining whether elevated BP reading is representative of average BP or reflects “white coat hypertension.”</p>

Depression and Stress

Depression and stress are considered biomedical problems unless they are part of the context of another problem. If a patient tells a doctor “I am here because I am feeling down” or “anxious,” the presentation is biomedical (e.g. depression is a medical condition). These conditions should be considered contextual ONLY if they are part of the context of another problem. Examples:

Contextual:	Why is it considered contextual?	Biomedical:	Why is it considered biomedical?
<p>RED FLAG: High A1c</p> <p>Pt: “I’ve been so depressed lately.”</p> <p>Dr: “Are you motivated to still take your meds every day?”</p>	<p>Health care provider is considering the depression as a possible contextual factor relevant to why patient’s A1c is high.</p>	<p>RED FLAG: High A1c</p> <p>Pt. “I’ve been so depressed lately.”</p> <p>Dr. “Do you think you would like to try anti-depressants?”</p>	<p>Health care provider is not showing awareness that patient’s depression is a reason his A1c is high. He/she is just treating the depression.</p>
<p>RED FLAG: High BP</p> <p>Dr: “Your BP is high today?”</p> <p>Pt: “Yeah I’ve been feeling stressed lately.”</p> <p>Dr: “So stressed that you</p>	<p>Health care provider is considering the depression as a possible contextual issue as to why patients BP is high.</p>	<p>RED FLAG: High BP</p> <p>Dr: “Your BP is high today?”</p> <p>Pt: “Yeah I’ve been stressed lately”</p> <p>Dr: “Yeah, that can affect</p>	<p>Health care provider is only considering the direct biomedical effect of stress on BP, not the contextual impact of stress on behavior (e.g. not taking medication).</p>

aren't taking your medication?"		your blood pressure."	
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Contextual problems directly impact health care, not health:

This subtle distinction comes up frequently when a patient has depression or anxiety. Depression and anxiety are atypical among biomedical conditions in that they are often triggered by and resolve with changes in life circumstances, such as the loss of and the regain of employment. Hence losing a job can adversely impact a patient's health. That does not make it a contextual issue, but rather a direct cause of a health problem. In contrast contextual problems are considered contextual because they impact on *health care* (outside the skin) not directly on *health* (under the skin). Their adverse impact on health is mediated through their adverse impact on health care.

Example:

Contextual	Why is it considered contextual?	<u>Not Contextual:</u>	Why it is not considered contextual?
RED FLAG: High A1c Pt. "I'm so depressed, I lost my job." Dr. "Can you afford your medication?"	Dr. is probing for impact on pt's health care. Economic situation effecting pt's abilities to afford medication.	RED FLAG: High A1c Pt. "I'm so depressed, I lost my job." Dr. "Are you looking for work?"	The Dr's question is not linked to the contextual red flag. Rather he/she is focused on the cause of the patient's depression.

Poor Contextual Probes

Coders do not judge the quality of the probe made by the health care provider. If the probe is contextual and related to the red flag, the health care provider is given credit for a contextual probe even if the probe may not be considered overt.

Poor Contextual Probe	Why it counts	Poor Probe Not Contextual:	Why doesn't it count.
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<p>RED FLAG: Pt recently had foot amputated due to frostbite</p> <p>Dr. "Do you have a place to live?" Asked during a frigid winter season.</p>	<p>Dr. is considering a contextual reason (homelessness) for why pt got frostbite. – Overt probe would be "WHY were you out in the cold so long?"</p>	<p>RED FLAG: Pt recently had foot amputated due to frostbite</p> <p>Dr. "Are your sugars now better controlled?"</p>	<p>Dr's question not relevant to frostbite. Is focused on another condition.</p>
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Probing contextual red flags doesn't always turn up underlying contextual problems:

Not all contextual red flags have underlying contextual problems. For instance, a patient with poor medication adherence may say, "Boy, it's been tough since I lost my job" (a contextual red flag). The provider might probe with "How is it tough? Are having trouble affording your medication?" (an overt probe) and the patient may reply "No, I'm on my wife's insurance. I just meant that I spend a lot of time trying to find work." In these cases the health care provider gets credit for the probe but there will be no opportunity to assess contextualized planning of care.

Sometimes contextual red flags are indicators not of contextual factors but of patient's preferences. We consider a patient's preferences to be a reflection of their personal values. They are not a "problem" to be overcome. Example:

Contextual Probe w/Non-Contextual Problem	Why?	Contextual Probe w/Contextual Problem	Why not?
<p>RED FLAG: Pt refuses to get a colonoscopy</p> <p>Dr: "Why don't you want to get a colonoscopy"</p> <p>Pt:"I've decided, given my other medical issues, I wouldn't do anything anyway if they found a cancer."</p>	<p>This is a case of patient preference. Preferences are to be respected, not regarded as problems to be circumvented.</p>	<p>RED FLAG: Pt refuses to get a colonoscopy</p> <p>Dr: "Why don't you want to get a colonoscopy?"</p> <p>Pt: "I was dropped from my wife's insurance & can't afford it."</p>	<p>Pt has a contextual reason (economic) as to why he is not getting a colonoscopy.</p>

NOTE: A good habit when considering if a problem is contextual, is to review the 10 domains of context. If the problem fits into one of those domains, then it is a contextual problem. If it does not, it is most likely not contextual.

Guidelines for Coding Plan of Care:

Contextual POC without a Contextual Probe

Sometimes clinicians recognize contextual issues and how to address them simply based on a patient's comment or behavior, and don't need to ask questions. Hence we credit providers for contextualizing

care as long as the plan of care is contextualized, regardless of whether the issue of concern was discussed. For example:

Contextual:	Why is it considered contextual?
<p>Pt. Reveal: “My meds stopped coming so I haven’t been taking them.”</p> <p>Dr. “That often happens when people don’t call or come in when they run out of refills. I’ll put in a new order with refills & you can pick them up at the pharmacy. Remember to call if you start running low so we know to renew your medications.”</p>	<p>Dr. did not probe for a contextual issue, however his plan of care addresses patient’s skills & abilities for getting refills. Dr. is addressing contextual issue with the plan of care.</p>

Contextual vs. Biomedical POC

Coders must determine if the plan of care is really contextual rather than just biomedical. Again, consider whether the plan of care addresses one or more of the ten domains of context.

Contextual:	Why is it considered contextual?	Biomedical:	Why is it considered biomedical?
<p>RED FLAG: High A1c</p> <p>Dr: “I am going to make you an appt with the pharmacist who can help you learn how to take your meds properly. “</p>	<p>Dr. is considering contextual issue (skills & abilities) when making the plan of care.</p>	<p>RED FLAG: High A1c</p> <p>Dr: “I’m going to increase your insulin.”</p>	<p>No contextual issues (domains of context) are being considered in this plan of care.</p>

Contextual vs. Standard Practice POC

In some cases coders must determine if the plan of care addresses contextual issues, or whether it simply reflects standard practice regardless of the patient’s context.

Contextual:	Why is it considered contextual?	Standard Practice:	Why is it considered standard practice?
<p>RED FLAG: Missed Labs</p> <p>Probe revealed patient thinks he needs at laboratory.</p> <p>Dr: “Once I reschedule your labs, just show up,</p>	<p>Dr. is considering contextual issue (skills & abilities) when making plan of care.</p>	<p>RED FLAG: Missed Labs</p> <p>Probe revealed patient thinks he needs at laboratory.</p> <p>Dr: “I’ll reschedule your labs and don’t eat for 12</p>	<p>Dr. is not addressing contextual issue. Rescheduling missed labs is standard practice.</p>

you don't have to have an appt."*		hours before."	
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*Note that a care plan may be contextualized with a straightforward comment to a patient if it resolves the underlying contextual problems. In this example the comment "just show up, you don't have to have an appointment" is itself a facet of the plan of care. Hence, the comment itself, by addressing the misunderstanding that led to the patient missing labs, represents contextualized care planning.

Plan of Care must be related to Contextual Problem in order to count.

If health care provider makes what could be considered a contextual plan of care but it IS NOT related to the previously identified contextual problem, then the health care provider is NOT given credit for a contextual plan of care.

Plan of care that would count	Why does it count?	Plan of care that would NOT Count	Why doesn't it count?
<p>RED FLAG: High A1c</p> <p>Probe reveals that pt has not been receiving his meds in the mail.</p> <p>Dr. "Let's make sure we have your correct address & phone number in the system so we can get you your meds."</p>	<p>Plan of care is appropriate to the contextual problem revealed.</p>	<p>RED FLAG: High A1c</p> <p>Probe reveals that pt doesn't know how to take his insulin.</p> <p>Dr. "Let's make sure we have your correct address & phone number in the system so we can get you your meds."</p>	<p>Plan of care does not correlate with contextual problem revealed.</p>
<p>RED FLAG: Missed Appts.</p> <p>Probe reveals that pt has transportation issues getting to the VA.</p> <p>Dr. "You can go to the transportation desk and get a travel voucher."</p>	<p>Plan of care is appropriate to the contextual problem revealed.</p>	<p>RED FLAG: Missed Appts.</p> <p>Probe reveals that pt has transportation issues getting to the VA.</p> <p>Dr. "If you need to cancel and reschedule your appt. call this number."</p>	<p>Plan of care does not correlate with contextual problem</p>

Distinguishing a Patient Reveal of a Contextual Problem vs. a New (Level 4)

Occasionally the audio coders will hear a patient comment that could either be the reveal of a contextual problem underlying an identified red flag (level 1-3), or a new red flag (level 4).

Pt Reveal for established red flag	Why is it considered a pt reveal?	Level 4 red flag	Why is it considered a level 4 red flag
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<p>RED FLAG: patient not refilling a costly medication, but taking all others.</p> <p>Reveal: "Boy its tough not having a job."</p>	<p>The mention of job loss reveals the contextual problem underlying the red flag.</p>	<p>Physician mentions to patient that he is going to need an MRI.</p> <p>Pt replies: "Boy its tough not having a job."</p>	<p>The mention of job loss is a red flag that the patient cannot afford needed care when it's a response to a proposal to get a costly exam.</p>
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Recording Coded Data:

After the two coders have scored the encounter on their individual spreadsheets, the audio coding supervisor will copy their results into a Master List of Coded Encounters. If a discrepancy occurs between coders, the audio coding supervisor will review each coder's algorithm, listen to the encounter and decide which coder he/she agrees with. He/she puts his/her final decision in the Master List of Coded Encounters and notates that there was a conflict in coding.

Chapter 3: Scoring for Outcomes

Why Track Outcomes?

The underlying premise of 4C is that it differentiates appropriate (contextualized) from inappropriate (contextual error) approaches to care that matter in terms of some meaningful outcome. For instance, the failure to recognize that a patient’s diabetes is out of control because of untreated depression and poor medication adherence is likely to lead to a poor outcome as the treatment (simply increasing their medication) is not appropriate. Conversely, recognizing and treating the depression is likely to have a better outcome as the patient’s mental state improves and he begins to take his medication again.

It is not necessary to track the outcomes of encounters coded as contextualized or as contextual error, but it is possible. This section provides a protocol for determining whether contextualization of care, based on 4C, predicts relevant patient outcomes.

Protocol Good vs. Poor Outcomes:

Four months after the encounter, the chart coder will review the patient’s medical record to code for “Good” or “Poor” outcomes and note these outcomes in the Master List of Coded Encounters. The criteria for a good or poor outcome are prospectively determined to avoid any bias resulting from knowledge of how the encounter gets coded. A good outcome marks an improvement in the patient’s condition as related to the red flag. A poor outcome indicates no improvement or condition is worse.

OUTCOMES TABLE listing red flags & good vs. poor outcomes

LEVEL 1 RED FLAGS	GOOD OUTCOME	POOR OUTCOME
Diabetes - A1c > 9	Improvement in pt’s A1c by < 1 point	No improvement or A1c is worse
Hypertension – SBP >160 or DBP >100	Improvement in pt’s SBP to <140 or DBP < 90	No improvement or BP is worse
Missed Appts. – 16 or more visits in 12 mos. w/ RVA Rate < 75%	Any improvement in RVA % Rate	No improvement or RVA % Rate is worse
Missed Labs/Procedures – 4 or more lab orders in 12 mos. w/TPA Rate < 75%	Any improvement in TPA % Rate	No improvement or TPA % Rate is worse
Medication adherence 4 or more prescriptions in 12 mos. w/MA Rate < 75%	Any Improvement in MA % Rate	No improvement or MA % Rate is worse
LEVEL 2 RED FLAGS	GOOD OUTCOME	POOR OUTCOME
Diabetes – A1c > 8	Any improvement in A1c	No improvement or A1c is worse
Hypertension – SBC > 140 or DBC > 90	Any improvement in SBC or DBC	No improvement or BP is worse

Missed Appts. – 2 or more in past 4 mos.	Pt. makes it to next scheduled appt	Pt. misses next scheduled appt
Missed Meds –1 or more missed fill/refills in past 4 mos.	Pt. gets medications filled or refilled	Pt. does not get medication filled or refilled
Missed Labs/Procedures –1 or more missed in past 4 mos.	Pt. gets lab tests or recommended procedures	Pt. does not get lab tests or recommended procedures
Urgent Care – 2 or more visits to Urgent Care in 12 mos.	Pt. has fewer visits to Urgent Care	Pt. has the same or more visits to urgent care
ER – 2 or more visits to ER in 12 mos.	Pt. has fewer visits to the ER	Pt. has the same or more visits to the ER
LEVEL 3-4 RED FLAGS	GOOD OUTCOME	POOR OUTCOME
BP – Running high during visit	Any improvement in pt.'s BP	No improvement or BP is worse
Meds – Pt. has run out, stopped taking or has expired medications	Pt. is compliant with their medications	Pt. is non-compliant with their medications
Understanding – Pt. shows confusion in how to make appts, labs, getting to clinic etc.	Pt. schedules appt., lab, returns to clinic	Pt. does not schedule appt., lab or return to clinic
Discrepancies – gets different BP or blood sugars than at clinic	Pt.'s home readings correlate with readings at the clinic	Pt.'s home readings do not correlate with readings at the clinic
Refusal – refuses colonoscopy or recommended vaccines (flu shot etc.)	Patient gets recommended vaccines or procedures	Patient does not get recommended vaccines or procedures.
Adherence – problems with following Drs. orders (appts., meds, labs, exercise, diet, etc)	Pt adheres to Dr.'s orders	Pt does not adhere to Drs. orders.
Other		

In some cases, specifically for level 3 and level 4 red flags, there may be insufficient information to determine a good or poor outcome based on what is in the medical record alone. In such cases the chart coder notates "Outcome Not Available" in the Master List of Coded Encounters.

Chapter 4 – Recording Data – The Master Spreadsheet

Below you will find a step by step guide on how to record 4C data for analysis. We have also included a formatted Master List of Coded Encounters spreadsheet as well as the Individual Coder Spreadsheet. These spreadsheets can be simplified or expanded as needed.

General Information and Assigning Provider/Patient ID's

The first five columns of the Master List of Coded Encounters are provided to record identifying information on the encounter. Whenever 4C is conducted for research purposes it is necessary to de-identify provider and patient information. In the following example there are columns for a “Provider ID,” “Patient ID,” and an “Audio Name”. A column is also provided for “Audio Coded by:” which is helpful if you are using more than one audio coder to listen to the encounter.

Date of Appt	Provider ID	Patient ID	Audio Name	Audio Coded by:
6/5/12	A101	B202	C303	Larry

Red Flag Recording

1. The chart coder looks in the medical record for **level 1 red flags** and records it in the **Level 1-3 Red Flag Description** cell in the Master List of Coded Encounters spreadsheet. The chart coder will also indicate a level 1 red flag in the cell **Red Flag Type**.

RED FLAG description	RED FLAG Type 1= Level 1 2= Level 2 3= Level 3 (Level 4 scroll right)
Poorly controlled chronic condition A1C - 10.6	1

2. If the chart coder finds no level 1 red flags he/she will look in the medical record to identify **level 2 red flags** and records it in the **Level 1-3 Red Flag Description** cell. The chart coder will also indicate a level 2 red flag in the cell **Red Flag Type**.

RED FLAG description	RED FLAG Type 1= Level 1 2= Level 2 3= Level 3 (Level 4 scroll right)
Patient missed 2 appts. in past 4 months	2

- If the chart coder finds no level 1 or 2 red flags, the audio coding supervisor is notified to look for **level 3 red flags** by *listening* to audio recording of the health care provider-patient encounter. If the audio coding supervisor identifies a level 3 red flag, she will notify the project director who will review and confirm or challenge the decision (resolved through consensus). When approved audio coding supervisor will add the level 3 red flag to **Level 1-3 RED FLAG Description** cell. He/she will also indicate a level 3 red flag in the cell **Red Flag Type**.

RED FLAG description	RED FLAG Type 1= Level 1 2= Level 2 3= Level 3 (Level 4 scroll right)
Patient refuses to get colonoscopy	3

Coding Levels 1-3 RED FLAGS

- After levels 1-3 red flags are identified they are sent to audio coder(s) for coding. Audio coder(s) listens to the encounter and fills out the cell **Coding Algorithm for Level 1-3 Red Flags**. *The results are kept in a separate coding spreadsheet. See Individual Coder Spreadsheet.*

Coding Algorithm for Levels 1-3 RED FLAGS

RED FLAG: Poorly controlled chronic condition A1C - 10.6

- 1. Coder Formulated Overt Probe: **Your A1C indicates your blood sugars are out of control. Why are they so high?***
- 2. Probe heard: **Why are your sugars so bad?***
- 3. Was it contextual probe? **yes***
- 4. Is it close enough to the overt probe to be credited? **yes***
- 5. Contextual Problem revealed in response to probe: **Pt said he doesn't understand how to take his insulin***
- 6. Contextual problem revealed by pt. without specific probing by provider: **na***
- 7. Coder Formulated overt contextual P.O.C.: **Educate pt on proper way to get his insulin***
- 8. P.O.C. heard: **Provider told pt he would get him appt w/pharmacist so he can learn how take his insulin***
- 9. Was it contextual? **yes***
- 10. Is it close enough to the overt P.O.C. to be credited? **yes, skills & abilities***

- If health care provider probes for contextual issue relating to red flag, audio coder(s) places an X in the **Contextual Issues Relating to Level 1-3 RED FLAG PROBED by provider** cell.
- If there is no probe but the patient reveals a contextual issue, audio coder(s) place an X in the cell indicated **Level 1-3 RED FLAG: Contextual Issues REVEALED by patient.**
- If there was a contextual problem identified (either by probing by healthcare provider or revealed by the patient), audio coder(s) places an X in the **cell Level 1-3 RED FLAG: Contextual Problem IDENTIFIED.**
- If no contextual problem was identified, audio coder(s) is finished recording for the encounters level 1-3 red flags.
- If a contextual problem was identified and audio coder(s) hears a Contextual POC made by provider, he/she places an X in **Level 1-3 RED FLAG: Contextual POC MADE.**
- Audio coder(s) then codes for 10 domains of context in cell **DOMAIN OF CONTEXT**, indicating in which domain the contextual problem belongs (e.g. if the problem was that pt's BP was out of control because he couldn't afford his meds would be 4. *Economic Situation*).

Level 1-3 RED FLAG: Contextual Issues <u>PROBED</u> by provider	Level 1-3 RED FLAG: Contextual Issues <u>REVEALED</u> by patient	Level 1-3 RED FLAG: Contextual Problem <u>IDENTIFIED</u>	Level 1-3 RED FLAG: Contextual <u>POC MADE</u>	DOMAIN OF CONTEXT: 1. <i>Competing Responsibility</i> 2. <i>Social Support</i> 3. <i>Access to Care</i> 4. <i>Economic Situation</i> 5. <i>Skills and Abilities</i> 6. <i>Emotional State</i> 7. <i>Cultural Attitude</i> 8. <i>Spiritual Beliefs</i> 9. <i>Attitude Toward Illness</i> 10. <i>Relationship with Healthcare Providers</i>
X		X	X	5

Level 4 Red Flag Recording and Coding

1. While listening to encounter if the audio coder(s) hears a level 4 red flag he/she adds red Flag to **LEVEL 4 RED FLAG description** cell then fills in the **Coding Algorithm for Level 4 Red Flag**. Note there can be zero to multiple level 4 red flags in any given encounter.

LEVEL 4 RED FLAG description:	Coding Algorithm for Level 4 RED FLAG
Pt w/COPD says he is not taking his asthma meds	<p>RED FLAG: Pt says he’s not taking asthma medication despite problems with COPD.</p> <ol style="list-style-type: none"> 1. Coder Formulated Overt Probe: Why aren’t you taking your medications? 2. Probe heard: none 3. Was it a contextual probe? na 4. Is it close enough to the overt probe to be credited? na 5. Contextual Problem revealed in response to probe: na 6. Contextual problem revealed by pt. without specific probing by provider: Pt said he lost his job and can’t afford meds anymore 7. Coder Formulated overt contextual P.O.C.: Find pt a way to get his medication that is less expensive 8. P.O.C. heard: Switched pt to a generic asthma med 9. Was it contextual? yes 10. Is it close enough to the idea P.O.C. to be credited? yes, Economic Situation

2. Audio coder(s) proceeds coding as he/she did with the levels 1-3 red flags, however, marking the results in cells indicated for level 4 red flags.

Level 4 RED FLAG: Contextual Issues <u>PROBED</u> by Provider	Level 4 RED FLAG: Contextual Issues <u>REVEALED</u> by patient	Level 4 RED FLAG: Contextual Issues <u>IDENTIFIED</u>	Level 4 RED FLAG: Contextual <u>POC MADE</u>	DOMAIN OF CONTEXT: 1. <i>Competing Responsibility</i> 2. <i>Social Support</i> 3. <i>Access to Care</i> 4. <i>Economic Situation</i> 5. <i>Skills and Abilities</i> 6. <i>Emotional State</i> 7. <i>Cultural Attitude</i> 8. <i>Spiritual Beliefs</i> 9. <i>Attitude Toward Illness</i> 10. <i>Relationship with Healthcare Providers</i>
	X	X	X	4

Resolving Coder Discrepancies

1. **If using two audio coders:** The audio coding supervisor reviews audio coders' coding documents. If there is a discrepancy in coding he/she will then listen to the audio recording and code it using the rules above.
2. Once the audio coding supervisor agrees with either one coder or the other, he/she moves the final data for that encounter to Master List of Coded Encounters.

Outcome Tracking

1. If there is a plan to track outcomes, the chart coder must – at the time when he /she is attempting to identify red flags – also fill out the cell **Levels 1-3 Possible Outcomes**. If level 4 red flags are subsequently identified by the audio coders, they must enter the possible outcomes in the cell **Level 4 Possible Outcomes** in the Master List of Coded Encounters. (*See outcomes table in chapter 3*).
2. In 4 months from the date of the initial encounter, the chart coder will look in the medical record for updated information on the RED FLAG.

3. The chart coder will then review the medical record and look for outcomes regarding the levels 1-3 and level 4 red flags. He/she will indicate if the outcome was 1 = good, 2 = poor or 3 =not available and indicate it in the **Level 1-3 RED FLAG: Outcome** and **Level 4 RED FLAG: Outcome** cells.
4. The chart coder will then describe actual Outcome in **Level 1-3 RED FLAG Outcome Description** and **Level 4 Outcome Description** cells.

Level 1-3 RED FLAG: Possible Outcomes	Level 1-3 RED FLAG: Return Visit Date	Level 1-3 RED FLAG: Outcome 1=Good 2=Poor 3=n/a	Level 1-3 RED FLAG: Outcome description	Level 4 RED FLAG: Possible Outcomes	Level 4 RED FLAG: Return Visit Date	Level 4 RED FLAG: Outcome 1=Good 2=Poor 3=n/a	Level 4 RED FLAG: Outcome description
Good=A1c improves > 1 point Poor=A1c is same or worse	10/12/12	1	Pt's A1C was 8.9 (an improvement from 10.6)	Good =Pt is now taking asthma meds. Poor=Pt still not taking asthma meds	10/12/12	3	Could not find in record if pt was now taking asthma medication

[Link to downloadable Master List of Coded Encounters](#)

[Link to downloadable Individual Coder Spreadsheet](#)

Glossary

Context Factor: Factors that are expressed outside of the body but are relevant to the patient's health care

Biomedical Factors: Factors that occur inside or on the body (including the skin)

Contextual Red Flag: Anything a patient says or that is observed about their situation or behavior that suggests unaddressed contextual factors may be contributing to problems with their care

Level 1-3 Red Flag: A contextual red flag identified by a chart coder from the patient's medical record or identified by audio coding supervisor and project director from the audio

Level 4 Red Flag: A contextual red flag not previously noted that is first identified by more than 1 audio coder independently during coding process

Contextual Probe: Anything a health care provider asks or states that indicates that he or she is investigating contextual factors as responsible for problem(s) with a patient's care

Contextual Problem: The contextual factor uncovered during the encounter that is responsible for the problem with the patient's health care. A contextual problem can be classified into one or more of the 10 domains of context

Domains of Context: Ten identified areas where contextual problems most generally occur. The ten domains include: Competing Responsibilities, Social Support, Access to Care, Economic Situation, Skills & Abilities, Emotional State, Cultural Attitude, Spiritual Beliefs, Attitude towards Illness and Relationship with Health Care Providers.

Contextualized Plan of Care: A plan initiated by a health care provider to address contextual issues related to identified contextual problem

Context Revealed by Patient/Not Prompted by Health care provider: Anything a patient says that is not prompted by a health care provider probe that reveals contextual problems adversely impacting patient's care

Coding Algorithm for Level 1-3 Red Flag: Strategy coder uses to identify whether or not contextual probes & contextual planning of care occurred in response to an identified contextual red flag

Coding Algorithm for Level 4 Red Flag: Strategy coder uses to identify whether or not contextual probes & contextual plans of care occurred in response to a level 4 red flag

Awareness: Line of questioning that indicates health care provider is aware of the contextual red flag

Benefit of the Doubt: Practice of coders to give the health care provider the benefit of the doubt in cases where it is difficult to determine whether or not awareness is demonstrated

Simon's Rule: Rule of coding that states if health care provider makes a statement (rather than ask a question) that demonstrates awareness of red flag and patient responds with revealing a contextual problem relating to the red flag, health care provider gives credit for a contextual probe