**Phase 1 Instructions**

Thank you again for participating in the development of OncQA!

You are now beginning Phase 1. Please determine whether there is enough information to provide an initial response, and if not provide what additional information from the patient’s medical record is needed. Then, provide a response to the best of your ability, similarly to how you would respond to a patient’s electronic medical record inbox message. You should type your answers where indicated below each question. Each question will be followed by a 2-question survey.

*It is important that you do not change the order of any of the samples in this document.*

*Please do not discuss or show the samples to anyone, including other participants.*

Please email us if you have any questions.

We are so appreciative of your help with this project.

Shan Chen: schen73@bwh.harvard.edu

Danielle Bitterman: dbitterman@bwh.harvard.edu

=================== New example 1======================

Input: EHR Context:

Age: 47 years

Gender: Female

Cancer diagnosis: Stage II invasive ductal carcinoma of the breast

PMH: asthma, obesity

Prior cancer treatments: lumpectomy (completed 2 months ago)

Current cancer treatments: adjuvant doxorubicin/cyclophosphamide (started 1 month ago)

Current medication list: albuterol, montelukast, metformin, aspirin, atorvastatin, vitamin D

Summary of most recent oncology visit (3 weeks ago): 47-year-old female with a history of stage II breast cancer s/p lumpectomy. She is on adjuvant doxorubicin/cyclophosphamide and tolerating treatment well. Will continue treatment as planned.

Patient message:

I've noticed that my hair has started falling out more than usual. Is this a side effect of my treatment? What can I do to minimize hair loss?

Type response here:

*Since you are currently undergoing chemotherapy, it is normal for you to experience hair loss. This is a very common side-effect, which will resolve after the chemotherapy has been stopped. There are some ways to try and minimize hair loss, including cooling of the scalp. This is something which you might want to discuss with your medical oncologist who is treating you, prescribing the chemotherapy.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
| x |  |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
| x |  |  |  |  |

=================== New example 2======================

Input: EHR Context:

Age: 68 years

Gender: Male

Cancer diagnosis: Stage IV colorectal cancer with liver metastases

PMH: coronary artery disease, type 2 diabetes

Prior cancer treatments: None

Current cancer treatments: FOLFIRI + bevacizumab (started 2 months ago)

Current medication list: metformin, aspirin, atorvastatin, metoprolol, lisinopril

Summary of most recent oncology visit (6 weeks ago): 68-year-old male with newly diagnosed stage IV colorectal cancer with liver metastases. He is on first-line FOLFIRI + bevacizumab and tolerating treatment well. Will continue treatment as planned.

Patient message:

I've been experiencing severe diarrhea for the past three days. I've tried over-the-counter medications, but they don't seem to help. What should I do?

Type response here:

*Diarrhea is a common side-effect of the chemotherapy agents that you are currently receiving. If the over-the-counter medications do not help, there is a risk of dehydration and weight loss, both of which can cause severe symptoms if left untreated. My advice for now is to drink plenty of fluids. I will have a nurse from the department call you today as well to check on the type and frequency of medication that you have been using and provide you with further advice. If things become worse you should contact an Urgent Care Clinic close to your home for an assessment.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

=================== New example 3======================

Input: EHR Context:

Age: 72 years

Gender: Female

Cancer diagnosis: Stage III ovarian cancer

PMH: osteoporosis, hypothyroidism

Prior cancer treatments: debulking surgery (completed 3 months ago)

Current cancer treatments: paclitaxel/carboplatin (started 2 months ago)

Current medication list: levothyroxine, alendronate, calcium, vitamin D

Summary of most recent oncology visit (4 weeks ago): 72-year-old female with stage III ovarian cancer s/p debulking surgery. She is on adjuvant paclitaxel/carboplatin and tolerating treatment well. Will continue treatment as planned.

Patient message:

I've been experiencing persistent abdominal bloating and discomfort for the past week. Is this a side effect of my treatment, or should I be concerned about something else?

Type response here:

*Bloating and discomfort can be caused by the chemotherapy you are currently undergoing. It may be a consequence of constipation as a result of the chemotherapy. Has the frequency and consistency of your stools changed over the past 2 weeks? Do you also experience nausea or vomiting? And how is your appetite? I will ask the nurse to give you a call later today to clarify these questions in order to give you the correct recommendations.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

=================== New example 4======================

Input: EHR Context:

Age: 58 years

Gender: Female

Cancer diagnosis: Stage IV pancreatic adenocarcinoma

PMH: hypertension, type 2 diabetes

Prior cancer treatments: None

Current cancer treatments: FOLFIRINOX (started 1 month ago)

Current medication list: metformin, lisinopril, amlodipine, aspirin

Summary of most recent oncology visit (2 weeks ago): 58-year-old female with newly diagnosed stage IV pancreatic adenocarcinoma. She is on first-line FOLFIRINOX and tolerating treatment well. Will continue treatment as planned.

Patient message:

I've been experiencing severe nausea and vomiting for the past two days. I've tried over-the-counter medications, but they don't seem to help. What should I do?

Type response here:

*These symptoms might be due to the chemotherapy that you have been prescribed and need proper treatment to prevent dehydration. I will ask the nurse to call you today to get a better understanding of your situation, to hear which medication and what dosages you have been using and to provide you with advice on how to handle it. Depending on the nurse’s evaluation, you might need to come to the hospital to be seen by one of the physicians for a check including your vital signs and a blood test.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

=================== New example 5======================

Input: EHR Context:

Age: 70 years

Gender: Female

Cancer diagnosis: Stage IV diffuse large B-cell lymphoma

PMH: hypertension, type 2 diabetes

Prior cancer treatments: None

Current cancer treatments: R-CHOP (started 1 month ago)

Current medication list: metformin, lisinopril, amlodipine, aspirin

Summary of most recent oncology visit (2 weeks ago): 70-year-old female with newly diagnosed stage IV diffuse large B-cell lymphoma. She is on R-CHOP and tolerating treatment well. Will continue treatment as planned.

Patient message:

I've been experiencing persistent fevers and chills for the past three days. Is this a side effect of my treatment, or should I be concerned about something else?

Type response here:

*This is likely a side-effect of the chemotherapy, which happens quite often. We should draw some blood to check your white blood count. These white blood cells are involved in preventing infections. If the cell count goes down due to the chemotherapy, you are more vulnerable to severe infections. This would require treatment with antibiotics and or other measures.*

*It can also be caused by a rapid response of the tumor to the chemotherapy. To distinguish between these causes, we will need to plan a visit to the clinic, measure your temperature and other vital signs and do the blood test. I will have the nurse call you today to arrange this so you can come in later today..*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

=================== New example 6======================

Input: EHR Context:

Age: 63 years

Gender: Male

Cancer diagnosis: Stage III diffuse large B-cell lymphoma

PMH: hypertension, hyperlipidemia

Prior cancer treatments: None

Current cancer treatments: R-CHOP (started 1 month ago)

Current medication list: lisinopril, amlodipine, simvastatin, aspirin

Summary of most recent oncology visit (2 weeks ago): 63-year-old male with newly diagnosed stage III diffuse large B-cell lymphoma. He is on R-CHOP and tolerating treatment well. Will continue treatment as planned.

Patient message:

I've been experiencing persistent fatigue and weakness for the past week. Is this a side effect of my treatment, or should I be concerned about something else?

Type response here:

*Fatigue and general weakness are common symptoms in cancer, but these can also be aggravated by anti-cancer treatments, like the chemotherapy that you are receiving at the moment. There is no need to be concerned about this.*

*Especially fatigue is a very well-known symptom in this regard. How much are you affected by these? Is it forcing you to refrain from normal activities? The best thing to do is try and stay active, but if you really feel tired you may want to take some rest.*

*Is your weakness a general sense of loss of strength? Or is this restricted to e.g. 1 arm or 1 leg? If the latter is the case, you should contact my nurse or another health care provider immediately.*

*I can see that you will come for the next scheduled appointment in 2 weeks. At that time I will make sure to check on these complaints again and we will do some blood tests to further look into this. However, if your complaints progress and get worse, do not hesitate to contact me again.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

=================== New example 7======================

Input: EHR Context:

Age: 65 years

Gender: Female

Cancer diagnosis: Stage IIIB non-small cell lung cancer (NSCLC)

PMH: chronic obstructive pulmonary disease, hypertension

Prior cancer treatments: concurrent carboplatin/pemetrexed and radiotherapy

Current cancer treatments: durvalumab (started 3 months ago)

Current medication list: tiotropium, albuterol, lisinopril, amlodipine, aspirin

Summary of most recent oncology visit (4 weeks ago): 65-year-old female with unresectable stage IIIB NSCLC. She is on consolidation durvalumab and tolerating treatment well. Will continue treatment as planned.

Patient message:

I've been experiencing shortness of breath and a persistent cough for the past week. Is this a side effect of my treatment, or should I be concerned about something else?

Type response here:

*The type of medication that you are currently receiving (durvalumab) may cause symptoms like shortness of breath and cough. It could also be related to your lung cancer. In order to find out what the explanation is in your situation, I would like you to come to my clinic tomorrow at 11 am. I will then examine you, have an X-ray performed and possibly also ask for a new pulmonary function test. I will ask the nurse to call you later today to confirm the appointment by telephone. See you tomorrow.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

=================== New example 8======================

Input: EHR Context:

Age: 54 years

Gender: Female

Cancer diagnosis: Stage II triple-negative breast cancer

PMH: none

Prior cancer treatments: lumpectomy, adjuvant chemotherapy and radiation therapy (completed 10 years ago)

Current cancer treatments: chemotherapy and targeted therapy (started 1 month ago)

Current medication list: metformin, pregabalin

Summary of most recent oncology visit (2 weeks ago): 54 year old female with a history of breast cancer s/p lumpectomy, adjuvant chemotherapy, and radiation therapy, now on neoadjuvant chemotherapy and targeted therapy. She is tolerating the treatment well with no significant side effects. Will continue treatment as planned.

Patient message:

I noticed a new lump in my breast while showering yesterday. Should I be concerned? Should I schedule an appointment or wait until my next oncology visit?

Type response here:

*Without a physical examination it is very difficult to tell what the cause is of the lump that you have described. My advice would be to come to the next clinic appointment (which is scheduled in 2 weeks as I can see in your record) and do the assessment. If you feel the lump starts to grow in size, you can contact me again. In that case we will schedule an earlier appointment.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

=================== New example 9======================

Input: EHR Context:

Age: 55 years

Gender: Female

Cancer diagnosis: Stage IV gastric adenocarcinoma

PMH: GERD, anemia

Prior cancer treatments: none

Current cancer treatments: chemotherapy and targeted therapy (started 2 months ago)

Current medication list: omeprazole, iron supplement

Summary of most recent oncology visit (4 weeks ago): 55 year old female with a new diagnosis of metastatic gastric cancer. She is on first-line systemic therapy. Mild nausea and fatigue noted, but overall tolerating treatment.

Patient message:

I've been experiencing persistent heartburn and acid reflux despite taking the omeprazole. Should I change my dosage?

Type response here:

*I can see in the health record that you are currently on 20 mg of omeprazole. If that is correct, you can indeed change the dose to 40 mg. It can take up to 2-3 weeks to appreciate an improvement in symptoms. By that time we will see each other again in the clinic, as I can see an appointment scheduled in 2 weeks from today.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
| x |  |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

=================== New example 10======================

Input: EHR Context:

Age: 64 years

Gender: Male

Cancer diagnosis: Stage III melanoma

PMH: hypertension, hyperlipidemia

Prior cancer treatments: wide excision and sentinel lymph node biopsy (completed 3 months ago)

Current cancer treatments: immunotherapy (started 5 months ago)

Current medication list: lisinopril, atorvastatin, aspirin

Summary of most recent oncology visit (2 weeks ago): 64 year old male with a history of melanoma s/p surgery, now on adjuvant immunotherapy. Overall tolerating treatment.

Patient message:

I've been experiencing joint pain in my knees and shoulders. Is this expected? Do I need to be evaluated?

Type response here:

*One of the side-effects of your treatment with immunotherapy can be joint pain. It usually presents in several joints at the same time, like you are describing. It is an arthritis-like condition, which can respond to medication. If you haven’t used any medication yet , I would recommend starting with ibuprofen 3x400 mg, which you can buy over-the-counter. In many patients this will result in an improvement in pain. There is no need to plan an early clinic appointment unless your pain is no longer manageable, or unless you start to experience much difficulties with moving during the day. In those situations, please contact us again to schedule an earlier appointment.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

=================== New example 11======================

Input: EHR Context:

Age: 68 years

Gender: Female

Cancer diagnosis: Glioblastoma

PMH: hypertension, diabetes, osteoporosis

Prior cancer treatments: gross total resection, radiotherapy with concurrent temozolomide

Current cancer treatments: adjuvant temozolomide

Current medication list: levetiracetam, lisinopril, metformin, ativan, alendronate, calcium with vitamin D

Summary of most recent oncology visit (4 weeks ago): 68 year old female with glioblastoma multiforme, on adjuvant temozolomide. Treatment has been complicated by mild nausea and cytopenias. Will continue treatment as planned.

Patient message:

I had a seizure this morning, it was similar to the seizure I had when I was first diagnosed. I took ativan and it stopped. What should I do?

Type response here:

*This must have been frightening for you. How severe was the seizure? How long did it last? Which parts of the body were affected? Did you (almost) lose consciousness? Was there anyone with you to observe it while it happened? Have you had this before in the recent past (except for the very first episode at diagnosis)? In the health record, I can not see which dose of levetiracetam you are currently taking. We might need to increase it. I will ask my resident to give you a call later today to clarify the questions above. After this we will decide whether you need to be seen in the outpatient clinic and whether we should plan further investigations like imaging (MRI-scan).*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

=================== New example 12======================

Input: EHR Context:

Age: 55 years

Gender: Male

Cancer diagnosis: Metastatic prostate adenocarcinoma

PMH: benign prostatic hyperplasia (BPH), hypertension

Prior cancer treatments: hormone therapy and radiation therapy (completed 8 months ago)

Current cancer treatments: androgen deprivation therapy (started 1 month ago)

Current medication list: tamsulosin, finasteride, amlodipine, lisinopril, atorvastatin

Summary of most recent oncology visit (3 weeks ago): 55 year old male with a history of prostate cancer s/p definitive treatment, now with metastatic disease involving the bones He is on androgen deprivation therapy. Mild fatigue and hot flashes noted, but overall tolerating treatment.

Patient message:

I am having worsening pain in my right upper arm. There has been dull pain there for a few months, but this week it got a lot worse suddenly. What can I do to manage this?

Type response here:

*Have you started using any pain medication yet? If not, I would advise to start on Tylenol at a dose of 3 times 500 mg tablets per day for example. Furthermore, please try to prevent intense activities with that arm for now. I will ask my secretary to plan an additional appointment at my clinic within the next 4-5 days for an evaluation. At that time, I will probably also ask for an X-ray of your arm.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

=================== New example 13======================

Input: EHR Context:

Age: 47 years

Gender: Male

Cancer diagnosis: Stage III esophageal adenocarcinoma

PMH: gastroesophageal reflux disease (GERD), obesity

Prior cancer treatments: neoadjuvant chemoradiation and esophagectomy (completed 4 months ago)

Current cancer treatments: immunotherapy (started 4 months ago)

Current medication list: omeprazole, pantoprazole, metformin, ibuprofen

Summary of most recent oncology visit (6 weeks ago): 47 year old male with a history of esophageal cancer s/p chemoradiation per CROSS, esophagectomy, now on neoadjuvant chemotherapy and targeted therapy. He is doing well with no major issues.

Patient message:

I am noticing some new shortness of breath and chest pain. I thought it might be my GERD, but tried increasing acid reflux medications and it didn’t help. Should I be concerned about these new symptoms?

Type response here:

*I would need to have some more information to be able to inform you what is causing this. How long has this been ongoing? How severe are the complaints? Are you still able to walk or climb stairs? Do you experience shortness of breath while at rest? Is there also coughing? Is there any mucus production? If yes, is there blood in the mucus? Where is your chest pain located? Is it associated with your breathing? Are you able to sleep? Do you also have a fever? I will ask my resident to give you a call to go over these questions and afterwards we will plan an appointment in the outpatient clinic within the next few days. Based on those days’ findings, we can then decide to do some additional tests*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

=================== New example 14======================

Input: EHR Context:

Age: 67 years

Gender: Female

Cancer diagnosis: Stage IV colorectal adenocarcinoma

PMH: hypertension, hyperlipidemia

Prior cancer treatments: surgery, adjuvant chemotherapy (completed 3 years ago)

Current cancer treatments: chemotherapy only (started 2 months ago)

Current medication list: amlodipine, atorvastatin, aspirin

Summary of most recent oncology visit (6 weeks ago): 67 year old female with a history of colorectal cancer s/p surgery and adjuvant chemotherapy, now with local and distant recurrence. She has started is tolerating chemotherapy well with mild fatigue.

Patient message:

I've been experiencing severe constipation for the past week. I've tried over-the-counter remedies, but nothing seems to be working. What should I do to find relief?

Type response here:

*It is difficult to assess the reason for the constipation without further information and without actually seeing you in the clinic. So here are a few additional questions: Do you have any other medications beyond the amlodipine, atorvastatin, aspirin? Which medications have you been using along with the chemotherapy? Do you take anything to reduce nausea caused by the chemotherapy? When was your last bowel movement? How was the aspect of your stools during your last bowel movement? Does it appear normal in color? Did you see blood? Was it very solid and hard? And difficult to release? Do you have any abdominal pain or discomfort at the moment? I will ask my resident to go over these questions with you by phone. After that, we will decide when it would be best to see you in the clinic.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

=================== New example 15======================

Input: EHR Context:

Age: 61 years

Gender: Male

Cancer diagnosis: Stage IV colorectal adenocarcinoma

PMH: hypertension, hyperlipidemia

Prior cancer treatments: none

Current cancer treatments: chemotherapy and targeted therapy (started 2 months ago)

Current medication list: amlodipine, atorvastatin, aspirin

Summary of most recent oncology visit (5 weeks ago): 61 year old male with metastatic colorectal cancer involving the liver, lungs, and lymph nodes, on started first-line systemics. He is doing very well with treatment, labs today showed mild AKI. Blood counts are lower limit of normal. Will continue to monitor.

Patient message:

I've been experiencing frequent episodes of diarrhea and it's affecting my daily routine. There is some blood mixed in. Can I do anything to manage it?

Type response here:

*While you are on active treatment with chemotherapy and targeted therapy, diarrhea with blood can sometimes develop as a side-effect of this treatment. It is something that we will need to look into carefully. How often do you have diarrhea? What color is the mixed-in blood? Is it bright red or more brownish/black? Is there any nausea? Do you have any fevers? How do you feel otherwise? Are you tired? Do you need to rest during the day? I will ask my nurse to call you and go over these questions by phone. And she will also inform you about when to come to the clinic for a visit. We will perform a physical examination, including your vital signs and perform some lab testing. For now, the most important thing would be to stay hydrated and drink lots of fluids.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

=================== New example 16======================

Input: EHR Context:

Age: 42 years

Gender: Feale

Cancer diagnosis: Stage IV cervical cancer

PMH: none

Prior cancer treatments: Cisplatin/paclitaxel/bevacizumab

Current cancer treatments: docetaxel (started 2 months ago)

Current medication list: aspirin, prochlorperazine

Summary of most recent oncology visit (1 week ago): 42 year old woman with metastatic cervical cancer, currently on second-line docetaxel She is extremely fatigued and having trouble keeping her weight up. She will come in again in 2 weeks for a symptom check, at which point we will re-evaluate her treatment plan.

Patient message:

I noticed quite a bit of blood in the toilet this morning and I feel even more weak than I did when I saw you last week. What should I do?

Type response here:

*That must have scared you, I presume. I have some further questions to better understand what is going on: Do you know what was the source of the bleeding? Was it from your vagina? Or did it come while urinating? Or while having a bowel movement? How weak are you? Can you still walk around at home? Or do you need to lie down during the day? Given your information I would like to see you later today. I will have you called by the nurse to inform you about the exact time and she will also go over these questions with you together. When you come to the office, I will try to locate the source of the bleeding by physical examination and do some further tests, including vitals and a blood test to check the level of your blood cells and other parameters.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  |  | x |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

=================== New example 17======================

Input:

EHR Context:

Age: 52 years

Gender: Male

Cancer diagnosis: Stage IIIB lung adenocarcinoma

PMH: Hypertension, chronic obstructive pulmonary disease (COPD)

Prior cancer treatments: Chemotherapy with cisplatin and pemetrexed (completed 6 months ago)

Current cancer treatments: None

Current medication list: Lisinopril, albuterol, tiotropium, simvastatin, aspirin

Summary of most recent oncology visit (3 months ago): 52-year-old male with a history of Stage IIIB lung cancer s/p cisplatin and pemetrexed chemotherapy presents for follow-up. Patient reports improvement in his symptoms and is clinically stable. Will continue ongoing surveillance.

Patient message:

I have been experiencing shortness of breath and wheezing, worse than normal for me. I increased my oxygen from 2L to 4L which helped. What should I do?

Type response here:

*In the EHR I can see you will have a next appointment in 1 month from now. However, I believe it would be wise to come to my clinic early, somewhere in the next 2-3 days to see what is going on. To find out, I have some more questions for you: When did it start? Does this feel like an exacerbation of the COPD to you? Have you already tried to increase the inhalers that you are taking? Is there a cough present? Do you produce any mucus? Do you feel ill? Do you have any fever? How bad is the shortness of breath? Are you still mobile? How is your appetite? Did you notice any weight change over the past weeks? I will ask the nurse to call you and go over these questions together with you. And he will also provide you with the details for the upcoming appointment. I will see you then, do some tests and will also request an X-ray of your chest and lungs.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

=================== New example 18======================

Input:

EHR Context:

Age: 63 years

Gender: Male

Cancer diagnosis: Stage II gastric adenocarcinoma

PMH: Hypertension, hyperlipidemia

Prior cancer treatments: Per-operative chemotherapy and gastrectomy (completed 8 months ago)

Current cancer treatments: None

Current medication list: Amlodipine, atorvastatin, aspirin

Summary of most recent oncology visit (4 months ago): 63-year-old male with a history of Stage II gastric cancer s/p perioperative chemotherapy and surgery and presents for follow-up. Imaging shows no evidence of disease.

Patient message:

I've been experiencing persistent indigestion and heartburn. What should I take to feel better?

Type response here:

*These symptoms often occur after surgical treatment for gastric cancer. It can be caused by the anatomic alterations after removal of the stomach with changes in the digestive functions. From the medication list that I can see here in the hospital, I can tell that you do not use any medication to reduce the production of acid. Is that correct? If so, you can try omeprazole medication 20 mg once daily. It may take up to 2 weeks to provide relief of symptoms. If your complaints haven’t improved by then, please contact me again.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

=================== New example 19======================

Input:

EHR Context:

Age: 60 years

Gender: Male

Cancer diagnosis: Stage II bladder urothelial carcinoma

PMH: Benign prostatic hyperplasia (BPH), diabetes

Prior cancer treatments: Transurethral resection of bladder tumor followed by intravesical chemotherapy (completed 9 months ago)

Current cancer treatments: None

Current medication list: Tamsulosin, metformin, lisinopril, aspirin

Summary of most recent oncology visit (4 months ago): 60-year-old male with a history of Stage IIB bladder cancer s/p surgery and intravesical chemotherapy presents for follow-up. Patient is clinically without evidence of recurrence. Will continue ongoing surveillance.

Patient message:

I've been experiencing blood in my urine again. Should I be concerned about a recurrence of my bladder cancer?

Type response here:

*It is hard to tell whether you should be concerned for cancer recurrence for now. But it is something we indeed would like to rule out. I will give you a call tomorrow morning to get some more information from you about when it started, how often it has happened and how severe it is. Then we can decide to plan a new cystoscopy procedure, at which we will have the possibility to look on the inside of the bladder and assess the inner bladder wall. If we are able to track the source of the bleeding, a biopsy may be taken from that area to further investigate.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

=================== New example 20======================

Input:

EHR Context:

Age: 67 years

Gender: Female

Cancer diagnosis: Stage III rectal adenocarcinoma

PMH: Hypertension, osteoporosis

Prior cancer treatments: Chemoradiation therapy with 5-fluorouracil followed by low anterior resection (completed 12 years8 months ago)

Current cancer treatments: None

Current medication list: Amlodipine, alendronate, aspirin

Summary of most recent oncology visit (4 months ago): 67-year-old female with a history of locally advanced rectal cancer s/p chemoradiation and surgery seen in long-term follow-up. He is doing well but has struggled with frequent loose stools since his surgery. Patient is clinically without evidence of recurrence.

Patient message:

I noticed blood in my stool yesterday. What should I do?

Type response here:

*To get some more insight into your complaint, I would like to ask a few additional questions: Was this the very first time that you had blood in your stool? Was it IN or ON your stool? What was the color of the blood? Was it bright red in color? Or more brownish? Did you notice any other changes with respect to your bowel movement pattern, e.g. in terms of frequency? I will plan a consultation by phone for this Friday at 11 am and we will go over these questions then together. Afterwards, I will be able to make further recommendations on what to do. Talk to you on Friday!*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

=================== New example 21======================

Input:

EHR Context:

Age: 64 years

Gender: Male

Cancer diagnosis: resectable pancreatic adenocarcinoma

PMH: Hypertension, diabetes

Prior cancer treatments: Whipple procedure followed by adjuvant gemcitabine/capecitabine and chemoradiotherapy(completed 2 years ago)

Current cancer treatments: None

Current medication list: Amlodipine, metformin, insulin

Summary of most recent oncology visit (3 months ago): 64-year-old male with a history of resectable pancreatic cancer s/p surgery, gemcitabine/capecitabine, and chemoradiotherapy presents for follow-up. Patient remains without evidence of disease recurrence.

Patient message:

I've been experiencing weight loss lately. Could this be related to my pancreatic cancer?

Type response here:

*It is difficult for me to tell what the cause of this might be without more information. It can be related to pancreatic cancer but there are also many other causes. Can you tell me a little bit more about your weight loss? How much weight did you lose in how much time? Have you been on a diet lately? Have you altered your eating habits in the recent past? How is your appetite in general? Has it changed recently? I will ask the secretary's office to plan a telephone consultation with you for tomorrow regarding these questions and you can answer them by phone. After that I will have a better understanding and I will provide you with some proper advice on potential next steps.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

=================== New example 22======================

Input: EHR Context:

Age: 48 years

Gender: Female

Cancer diagnosis: Stage IIA breast cancer

PMH: hypothyroidism, anxiety

Prior cancer treatments: lumpectomy and radiation therapy (completed 6 months ago)

Current cancer treatments: None

Current medication list: levothyroxine, sertraline, multivitamin

Summary of most recent oncology visit (3 months ago): 48-year-old female with a history of Stage IIA breast cancer s/p lumpectomy and radiation therapy presents for follow-up 6 months post-treatment. She is clinically and radiographically without evidence of recurrence. Will continue ongoing surveillance.

Patient message:

I noticed some swelling and redness in my arm on the same side as my surgery. It's been like this for a few days now. Is this something I should be worried about? Should I come in for a check-up?

Type response here:

*It is difficult to judge what the redness and swelling are caused by, just from reading this email and text, without seeing it myself. However, the skin and the tissues of the arm on the affected side can be more vulnerable to this after the surgery and radiation. Which part of the arm is affected? Is it the upper arm or the lower arm? It might resolve by itself over the course of 1-2 weeks. In order to follow this up, I will schedule a consultation by telephone in 2 weeks time. I will have the appointment mailed to you.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

=================== New example 23======================

Input: EHR Context:

Age: 52 years

Gender: Female

Cancer diagnosis: Stage IIIC ovarian cancer

PMH: hypertension, depression

Prior cancer treatments: surgery and chemotherapy (completed 1 year ago)

Current cancer treatments: None

Current medication list: amlodipine, fluoxetine, ibuprofen

Summary of most recent oncology visit (3 months ago): 52-year-old female with a history of Stage IIIC ovarian cancer s/p surgery and chemotherapy presents for follow-up 1 year post-treatment. She is clinically and radiographically without evidence of recurrence. Will continue ongoing surveillance.

Patient message:

I've been feeling very fatigued and have had a low-grade fever for the past few days. I'm worried that my cancer might be coming back. Should I schedule an appointment to discuss my symptoms?

Type response here:

*There can be several different causes for your complaints, including many not-cancer related reasons that might cause fatigue and fever, e.g. flu or other infections. Do you have any other symptoms, e.g. coughing, sore throat, muscle aches, or digestive complaints like diarrhea? These might point towards infectious causes. My advice would be to go and see your primary healthcare provider (PCP) first, especially if the complaints persist longer than 1 week or if things get worse. If the PCP thinks you should be seen here in the clinic, we can arrange a consultation on short notice for further evaluation.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

=================== New example 24======================

Input: EHR Context:

Age: 50 years

Gender: Female

Cancer diagnosis: Stage IIB melanoma

PMH: hypothyroidism, seasonal allergies

Prior cancer treatments: wide local excision and sentinel lymph node biopsy (completed 6 months ago)

Current cancer treatments: None

Current medication list: levothyroxine, cetirizine, ibuprofen

Summary of most recent oncology visit (3 months ago): 50-year-old female with a history of Stage IIB melanoma s/p wide local excision and sentinel lymph node biopsy presents for follow-up 6 months post-treatment. She is clinically and radiographically without evidence of recurrence. Will continue ongoing surveillance.

Patient message:

I noticed a new mole on my arm that has been changing in size and color over the past month. I'm concerned that it might be another melanoma. Should I schedule an appointment to have it checked out?

Type response here:

*A new skin lesion that is changing in appearance is a good reason to be seen in a clinic indeed. I will ask my secretary to send you a new appointment for a consultation within 1 week from now.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

=================== New example 25======================

Input: Sample Given 1:

EHR Context:

Age: 54 years

Gender: Male

Cancer diagnosis: Stage II colon adenocarcinoma

PMH: hypertension, gastroesophageal reflux disease (GERD)

Prior cancer treatments: Laparoscopic colectomy (completed 3 months ago)

Current cancer treatments: Adjuvant CAPEOX chemotherapy (initiated 1 month ago)

Current medication list: amlodipine, omeprazole, acetaminophen, ASA, oxaliplatin, capecitabine

Summary of most recent oncology visit (1 month ago): 54 year old male with a history of Stage II colon adenocarcinoma s/p laparoscopic colectomy. Post-operative pathology showed clear margins and no nodal involvement. Initiated adjuvant CAPEOX chemotherapy to minimize risk of recurrence. Will continue follow-up every 2 weeks with a focus on monitoring toxicity and tolerability.

Patient message:

Hi doctor, I'm feeling extremely fatigued lately, and I've also developed a rash on my hands and feet. Is it a side effect of chemotherapy? What can I do to manage these symptoms? Should I be worried about it?

Type response here:

*Fatigue is a very common side-effect during treatment with chemotherapy. The rash you are describing also fits with one of the side-effects of your chemotherapy. There is no need to wrry. For the rash I usually provide the advice to keep the hands and feet clean and dry, avoid harsh soap and too hot water, the use of a mild skin moisturizer might also help. For your feet, wear shoes that fit well without causing friction. Avoid trauma, e.g. by using gloves for your hands while doing manual labor as small wounds might get infected. Regarding fatigue, it is important to rest at times when really tired to conserve energy and at the same time stay physically active, performing light exercises. From the health record I can see that your next appointment is in 2 weeks from now. At that time, I will evaluate your symptoms again. If the rash gets worse, you can contact me again before that time.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

=================== New example 26======================

Input: Age: 47 years

Gender: Female

Cancer diagnosis: Stage IV malignant melanoma with lung metastases

PMH: no significant history

Prior cancer treatments: Excisional biopsy (2 years ago), targeted therapy (discontinued)

Current cancer treatments: Pembrolizumab (initiated 4 months ago)

Current medication list: loratadine, ibuprofen, acetaminophen, vitamin D

Summary of most recent oncology visit (1 month ago): 47 year old female with Stage IV malignant melanoma presents for immunotherapy management. Prior targeted therapy discontinued due to limited response. Maintaining on pembrolizumab. Imaging last month showed stable disease with no new metastases.

Patient message:

I woke up today with joint pain in my knees and wrists. It's making it difficult for me to do everyday tasks, and I am worried about it. Is this related to my ongoing pembrolizumab treatment? What can I do to alleviate the pain? Should I stop the immunotherapy?

Type response here:

*Joint pains can be caused by the pembrolizumab immunotherapy that you are currently treated with. It is a side-effect that can cause problems while moving, but in most patients these can be treated with painkillers. I would recommend starting with nonsteroidal anti-inflammatory drugs (NSAIDs), e.g. ibuprofen, 3x daily 400 mg. This will reduce the pain within 1-2 days in most patients. If that is also the case in your situation, there is no need to stop the immunotherapy. I will plan a consultation by telephone with you for early next week. At that time I will be able to evaluate the reduction in your symptoms and decide on the next steps.*

**How challenging was it to respond to this message?**

| Very trivial | Trivial | Neutral | Challenging | Very challenging |
| --- | --- | --- | --- | --- |
|  |  | x |  |  |

**Do you believe this patient is experiencing a severe medical event?**

| Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
| --- | --- | --- | --- | --- |
|  | x |  |  |  |