Appendix 1 (as supplied by the authors): Interview questions for surgeons who perform breast and/or colorectal cancer, or lung cancer surgeries

Note: All questions should be asked to all surgeons, except the scenario-based questions which should be asked according to what type(s) of surgery the surgeon performs. Also, specific references to disease sites and types of therapy should be modified according to the type(s) of surgery the surgeon performs.

Interview Scope

- Decisions related to referring patients for adjuvant therapies.
- Patients who have received potentially curative surgery or who are candidates for curative-intent surgery. By using the term 'adjuvant therapy' I am really talking about *any treatment in addition to surgery* that is provided to decrease the risk of recurrence and/or increase the chance of long-term survival.
- Standard systemic and/or radiation therapies, not experimental therapies

Regular practice

1. What is your regular practice with respect to referring [*breast/colon/rectal/lung*] cancer patients for an oncology consultation regarding adjuvant therapy?
   How often do you have a discussion with the patient about adjuvant therapy? What types of issues influence whether you have a discussion with the patient and his/her family? What things do you bring up during those discussions?

   What proportion of resected patients do you believe you refer?

2. Take me through how you typically decide to refer someone to the cancer centre for a discussion on adjuvant therapies.
   Do you ever consult with another surgeon (or health care provider) when making a decision?
   Do you ever consult practice guidelines or some other source of practice recommendations? *[If participant indicates 'yes', inquire about which guidelines they access]*
   How does the patient's knowledge and understanding factor into your decision? Do you think that certain patient groups are more likely to want an oncology consultation?

3. Do you generally refer to the same oncologist(s)? Do you refer to a team of oncologists? If given the choice, would you prefer being able to specify who your patient is referred to?
   If so, why? What is your relationship like with him/her?
   If not, why not?

Patient, surgeon, institutional, and health system factors that influence decisions to refer

4. [*General, not specific, though realize that you may not refer unless there are certain pathologic features that make the tumor high risk – e.g., nodal status, tumor size, etc.*]

   Let's say you have a typical 60-year-old patient who has just had uncomplicated surgery for [*breast, colon, lung*] cancer and has no extenuating comorbidities, no problems with transportation, finances, et cetera. Relative to surgery alone, what would be the minimal overall survival benefit you would want to see for standard therapy with average risk of toxicity to <u>initiate a discussion with the patient</u> about adjuvant therapy and referral for an oncology consultation?

Appendix to: Urquhart R, Kendell C, Buduhan G, et al. Decision-making by surgeons about referral for adjuvant therapy for patients with non–small-cell lung, breast or colorectal cancer: a qualitative study. *CMAJ Open* 2016. DOI:10.9778/cmajo.20150030.

What would be the minimal absolute overall survival benefit you would want to see to initiate a discussion with the patient about adjuvant therapy and referral for an oncology consultation?

[May need to provide examples of relative and absolute benefit: e.g. if surgery alone has a 50% overall survival, which increases to 60% with adjuvant therapy, that is a 20% relative overall survival benefit. If surgery alone has a 50% overall survival, which increases to 60% with adjuvant therapy, that is a 10% absolute overall survival benefit.]

5. What specific issues do you consider when you decide to refer, or not to refer, a patient for an oncology consultation?
   Probes:
   Disease site, stage
   Risk of recurrence (based on nodal status, resection margins, patho-histological characteristics)
   Magnitude of treatment benefit
   Side effects, other patient 'risks'
   (Evolving) nature of the therapies
   Degree of simplicity/complexity of therapies [*e.g., breast therapies may be more complicated to explain and provide, etc., than CRC or lung therapies*]
   Patient characteristics (age, comorbid conditions, performance status, social/family support, ability or reluctance to travel to cancer centre/stay away from home for prolonged period)
   Patient/family preferences and knowledge
   Relationship with patient/family
   Comprehensive oncologic care
   Knowledge of ongoing clinical trials for certain pt populations

6. Are there any other issues you consider when you decide to refer a patient for an oncology consultation – for example, issues that have to do with accessing cancer services?
   Probes:
   Practice guidelines / hospital protocols
   Access to tumour boards
   Wait times to see an oncologist or receive treatment
   Availability of cancer system resources
   Travel
   Time off work, away from home, etc.
   Satellite oncology clinics (chemo administration)

7. Which of the things you talked about have greater 'weight' in terms of making a decision? How so? Which of these things you talked about are most common?

8. Scenario Questions

A. Colorectal Cancer

Let's say you are seeing a 53-year-old female in the outpatient surgery clinic. Three weeks ago, she underwent a right hemicolectomy for a cecal cancer, which had been identified within the

provincial screening program. Her surgery was uncomplicated, and she has made an uneventful recovery with a six day length of stay in hospital. Her only co-morbidities include medication controlled hypertension. She is an active woman, a legal secretary, and she lives within a fifteen minute drive to the nearest cancer centre. Pathology from her resection reveals a moderately differentiated T3, N1 (one of seventeen positive lymph nodes) adenocarcinoma. A staging CT scan of her chest, abdomen and pelvis showed no evidence of metastatic disease preoperatively.

Based on this information, how would you approach thinking about referral for consideration of adjuvant chemotherapy?

How would your thoughts differ if:

i. All seventeen lymph nodes are in fact negative?
ii. She is a 78-year-old woman with medication controlled hypertension?
iii. She is a 53-year-old women with known coronary and peripheral vascular disease?
iv. She expresses a strong aversion to chemotherapy based on significant toxicity experienced by a family member with breast cancer 3 years previously?
v. She expresses a strong desire for any treatment that has potential for benefit and has little concern about risks?
vi. She lives in a rural setting, 2 ½ hours from the nearest facility to deliver intravenous chemotherapy?
vii. The oncologist to whom you are considering referring is one you know and with whom you have a very good, established, and frequent clinical relationship?

Are there any other big issues that would make you think differently with respect to this scenario?

B. Breast Cancer

Let's say you are seeing a 53-year-old female in the outpatient surgery clinic. Three weeks ago, she underwent a right lumpectomy and sentinel node biopsy for a breast cancer, which had been identified within the provincial screening program. Her surgery was uncomplicated, and she has made an uneventful recovery from outpatient surgery. Her only co-morbidities include medication controlled hypertension. She is an active woman, a legal secretary, and she lives within a fifteen minute drive to the nearest cancer centre. Pathology from her resection reveals a 2.2 cm invasive ductal carcinoma, grade 2, estrogen positive, with one of 3 positive sentinel nodes. She will undergo postoperative whole breast radiation and accepts from you that she will require hormonal therapy.

Based on this information, how would you approach thinking about referral for consideration of adjuvant systemic therapy?

How would your thoughts differ if:

i. All sentinel lymph nodes are in fact negative?
ii. She is a 78-year-old woman with medication controlled hypertension?
iii. She is a 53-year-old woman with known coronary and peripheral vascular disease?

iv. She expresses a strong aversion to chemotherapy based on significant toxicity experienced by a family member with breast cancer 3 years previously?
v. She expresses a strong desire for any treatment that has potential for benefit and has little concern about risks?
vi. She lives in a rural setting, 2 ½ hours from the nearest facility to deliver intravenous chemotherapy?
vii. The oncologist to whom you are considering referring is one you know and with whom you have a very good, established, and frequent clinical relationship?

Are there any other big issues that would make you think differently with respect to this scenario?

C. Lung Cancer

Let's say you are seeing a 53-year-old female in the outpatient surgery clinic. Three weeks ago, she underwent a right upper lobectomy for primary adenocarcinama of the lung, which had been identified incidentally on a CT scan done for another reason. Her surgery was uncomplicated, and she has made an uneventful recovery with a 5 day length of stay in hospital. Her only co-morbidities include medication controlled hypertension. She is an active woman, a legal secretary, and she lives within a fifteen minute drive to the nearest cancer centre. Pathology from her resection reveals a moderately differentiated T1b (2.4 cm), N1 (one of 9 positive lymph nodes, a station 12 node) adenocarcinoma. Metastatic workup showed no evidence of metastatic disease preoperatively.

Based on this information, how would you approach thinking about referral for consideration of adjuvant chemotherapy?

How would your thoughts differ if:

i. The tumour size is in fact 4.2 cm?
ii. She is a 78-year-old woman with medication controlled hypertension?
iii. She is a 53-year-old woman with known coronary and peripheral vascular disease?
iv. She expresses a strong aversion to chemotherapy based on significant toxicity experienced by a family member with breast cancer 3 years previously?
v. She expresses a strong desire for any treatment that has potential for benefit and has little concern about risks?
vi. She lives in a rural setting, 2 ½ hours from the nearest facility to deliver intravenous chemotherapy?
vii. The oncologist to whom you are considering referring is one you know and with whom you have a very good, established, and frequent clinical relationship?

Are there any other big issues that would make you think differently with respect to this scenario?

Strategies to promote referral to oncology services

9. From your perspective, are there any barriers or challenges you experience when referring patients to the cancer centres for a consultation? If so, what are they?

10. Would you like to have more supports available to make decisions about adjuvant therapies or to improve patients' access to oncologists?
    If no, what types of 'supports' do you use now (if any)? If yes, what types of things might realistically help?
    Probes:
    Access to tumor boards, CME
    Access to consultations via telemedicine
    Community-based cancer care
    Opportunities to collaborate with oncologists
    Opportunities for mentoring
    Provincial guidelines
    Performance feedback
    Patient decision aids
    Mechanisms to support patients' travel, lodging, and other costs associated with seeing an oncologist / receiving treatment

11. Are there any other issues related to referring patients for an oncology consultation that you would like to comment on? If so, what are they?