

HIMSS Oregon Chapter
Population Health Event - Shared Decision Making: Using Technology
to Guide Informed Decision Making

In Office Shared Decision Making

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IT mechanics of SDM tool embedded in EMR

Take data out
of electronic
medical record



Use published
algorithms to
calculate
individual risk
score
+
calculate
individual risks
and benefits
of treatment



Create
patient-friendly
graphics



Send graphics
and data back
to EMR

SDM embedded in the EMR

A good in-office SDM tool should

- Be available in real time
- Be easy to find
- Help make conversation easier for clinician
- Save time for the clinician or at least no make it longer
- Have simple but sophisticated graphics for patients
- Use images that are evidence-based for describing absolute benefits and risks to patients
- Make tools that clinicians are requesting

Implementation team

“It’s a team effort”

- Tool development – vendor, self
- Internal web developer
- Cache programmer
- Epic application coordinator
- IT project manager
- IT business manager
- Physician leader
- Data analyst
- Clinicians – “SDM groupies”
- Patient advisors

SDM Landing Page

Chart Review
SnapShot
Results Review
Launch RRS
PST - PATIENT
Shared Decisi...
Synopsis
Graphs
Review Flows...
Launch EKG
Demographics
Letters
Activity Rx/For...
Problem List
MAR
Flowsheets
Immunizations

KPNW Shared Decision Making Tools

Shared Decision Making Tools

- Atrial Fibrillation Tool by HealthDecision
- Lumpectomy vs. Mastectomy Tool
- Lung Cancer Screening Tool by HealthDecision
- Statin Tool

Lung Cancer Screening Tool

Eligibility

Pt. Data

Pt. Risk

Values

Decision

Pt. Summary

Prov. Summary

Credits

HealthDecision - Chest CT for Lung Cancer

Before you start, consider 4 tool eligibility questions:

Do you have a history of lung cancer?

No

Yes

UNK

Do you have any symptoms of lung cancer?

No

Yes

UNK

Do you have conditions that lower your life expectancy?

No

Yes

UNK

Would you reject surgery if recommended to treat a cancer?

No

Yes

UNK

Choose "No" for all and continue

No For All

[Frequently Asked Questions](#)

Continue

Helps you know
who is
appropriate for
screening

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HealthDecision - Chest CT for Lung Cancer

Before you start, consider 4 tool eligibility questions:

Do you have a history of lung cancer?

No Yes UNK

Do you have any symptoms of lung cancer?

No Yes UNK

Do you have conditions that lower your life expectancy?

No Yes UNK

Would you reject surgery if recommended to treat a cancer?

No Yes UNK

Choose "No" for all and continue

No For All

If the answer to any of these questions is yes, this tool (and CT screening) is probably not appropriate for this patient.

- Previous lung cancer puts patients into a different risk category than initial screening. These patients were excluded from the NLST study.
- Hemoptysis, unexplained weight loss, progressive cough and repeat pneumonias may need a diagnostic CT scan instead of screening.
- Cancer screening gives lower benefit to patients expected to live less than 10 years.
- Surgery is often needed in combination with CT scans to save death from a cancer. Refusing surgery means screening will be less helpful.

The tool will not continue in the setting of a "yes" answer.

Helps you know who is not appropriate for screening

Eligibility

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Patient Data

Enter the patient's information below. When finished, click on "Assessment" above or "Continue" below.

Age now (55-80 years) *

Gender INFO *

Race / Ethnicity

Education level

Family history of lung Ca?

Height

Weight (lbs) *

BMI (calculated)

▸ Caveats

History of COPD?

History of any previous cancer?

Smoking status

Age Year Yrs Ago

When smoking started (fill any box)

Packs Cigarettes Pack years

Average per day (1 pack=20)

Continue

Lame! No data filled in. You have to type it all in. Ugggh!

This is what it would look like if it was not embedded in EMR

Enter the patient's information below. When finished, click on "Assessment" above or "Continue" below.

Cool! All the data automatically filled itself in. I don't have to do any typing. Yahoo!

Age now (55-80 years)	<input type="text" value="55"/>	History of COPD?	<input type="radio"/> No	<input checked="" type="radio"/> Yes	<input type="radio"/> UNK
Gender	<input type="radio"/> Male <input checked="" type="radio"/> Female	History of any previous cancer?	<input checked="" type="radio"/> No	<input type="radio"/> Yes	<input type="radio"/> Unknown
Race / Ethnicity	<input type="button" value="White"/>	Smoking status	<input type="radio"/> Current	<input checked="" type="radio"/> Former	<input type="radio"/> Never <input type="radio"/> Unknown
Education level	<input type="button" value="Graduated College"/>	When smoking started (fill any box)	<input type="text" value="16"/>	<input type="text" value="1978"/>	<input type="text" value="39"/>
Family history of lung Ca?	<input checked="" type="radio"/> No <input type="radio"/> Yes <input type="radio"/> UNK	When did you quit? (fill any box)	<input type="text" value="50"/>	<input type="text" value="2012"/>	<input type="text" value="5"/>
Height	<input type="text" value="5"/> ft <input type="text" value="7"/> in	Average per day (1 pack=20)	<input type="text" value="2"/>	<input type="text" value="40"/>	<input type="text" value="68"/>
Weight (lbs)	<input type="text" value="140"/>				

Highly recommended you make sure the information is right, especially the smoking data.

Continue

Eligibility

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Age now (55-80 years)

50

Screening CT scans are only shown to be valuable for ages 55 to 80.

Gender

INFO

Male

Female

Race / Ethnicity

White



Education level

Graduated

College



Family history of lung Ca?

No

Yes

UNK

Height

5



ft

7



in

Weight (lbs)

140

BMI (calculated)

22

History of COPD?

No

Yes

UNK

History of any previous cancer?

No

Yes

Unknown

Smoking status

Current

Former

Never

Unknown

Age

Year

Yrs Ago

When smoking started (fill any box)

16

1983

34

When did you quit? (fill any box)

49

2016

1

Packs

Cigarettes

Pack years

Average per day (1 pack=20)

2

40

66

This patient is 50 year old and is not eligible for screening.

Eligibility

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Lung Cancer Risks and Recommendations

Risk of having lung cancer diagnosed in next 6 years is: **5.1 %** [INFO](#)

By comparison, lung cancer risk in 'never-smokers' is: 0.08 %

USPSTF 2015 Recommendations:

This patient **does qualify** for screening CT scans for lung cancer. A shared decision-making conversation is expected.

Kaiser National Guideline Recommendations:

This patient **does qualify** for screening CT scans for lung cancer. [INFO](#)

Calculated using the algorithm from Selection Criteria for Lung-Cancer Screening. NEJM 2013;368(8):728-36

Able to tell you if your own or other guidelines say 'yes screen' or 'no screen'

Continue

Eligibility

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Lung cancer screening has benefits and harms. Consider both for decision:

With no screening, 3 results are possible:



No lung cancer: Lung cancer is not diagnosed.



Survive lung cancer: Lung cancer is diagnosed and the patient survives.



Die of lung cancer: Lung cancer is diagnosed and causes the patient's death.

With screening, 5 more results are possible. An oval  is placed around icons that were changed by screening.

Possible benefit:



->



Avoid death: These patients would have died, but survive lung cancer because of screening and treatment.

Possible harms:



->



Over-Diagnosis: The CT finds lung cancer that gets treated, but would not have been harmful.



->



False alarm: The CT finds a "nodule," requiring more tests. Most (96%) of these nodules are not cancer.



->



Invasive procedure: Some nodules need a biopsy to study the tissue, even if not cancer.



->



Major complication: A few invasive procedures cause major complications.

Radiation risk: The risk of an added fatal cancer from a single CT is too low to see on the graphics (below 1 in 10,000).

What does it mean for me?
What decision do we need to make?

Continue

Eligibility

Pt. Data

Pt. Risk

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Prov. Summary

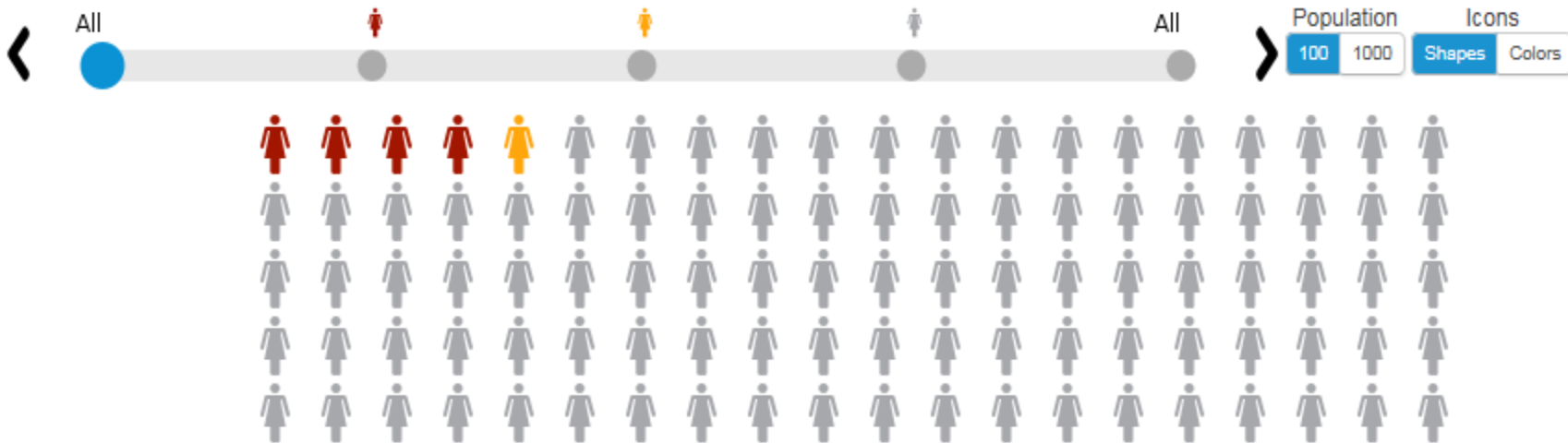
Credits

Your decision to make: get annual screening CT scans, or not.

No

Yes



Undecided




Icon array
Toggle = NO

For 100 women like you over 6 years without screening:

5 are diagnosed with lung cancer. [INFO](#)

- ▶  4 die from lung cancer. [INFO](#)
- ▶  1 survive lung cancer without screening.

95  are not diagnosed with lung cancer.

Continue

Your decision to make: get annual screening CT scans, or not.

No **Yes** Undecided

Toggle = YES





All
Population
Icons
100
1000
Shapes
Colors

Icon array
Toggle = Yes







For 100 women like you over 6 years, with screening:

6 are diagnosed with lung cancer:

- ▶  3 die even with screening.
- ▶  1 avoid death due to screening.
- ▶  1 survive even without screening.
- ▶  1 more cancer diagnosed by screening.

94 do not have lung cancer diagnosed. [INFO](#)

- ▶  55 have no false alarms.
- ▶  39 have at least one false alarm.
- ▶  3 get invasive procedures like biopsy.
- ▶  <1 have major complications.

Eligibility

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Pt. Risk

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Print

HealthDecision Lung Cancer Screening - Patient Summary

The HealthDecision lung cancer screening tool was used to evaluate your risks and benefits of getting yearly chest CT scans to screen for lung cancer. The risks shown below assume you have no history of lung cancer, no symptoms of possible lung cancer, a life expectancy at least 10 years, and that you would be willing to consider lung surgery if recommended.

Your Information:

The risks listed below are for a 55-year-old female former smoker who started at age 16 and quit smoking about 5 years ago.

Assessment Summary

The baseline (non-screening) risk of getting lung cancer over 6 years is 5.1% and the chance of dying from lung cancer is about 4.3%. Screening CT scans are planned. The following are the possible outcomes of 100 women getting scans. In addition, radiation from the yearly scans causes a 1 in 10,000 risk of added cancers.



For 100 women like you over 6 years, with screening:

Can print this
for the patient
to take home.

- Eligibility
- Pt. Data
- Pt. Risk
- Values
- Decision
- Pt. Summary
- Prov. Summary**
- Credits

Copy the text below and paste in chart for a record of this shared decision-making visit.

The HealthDecision lung cancer tool was used in a shared decision making conversation about scheduling chest CT scans for lung cancer screening.

PAST HISTORY: The patient has no history of lung cancer, no symptoms of possible lung cancer, a reasonable life expectancy, and would be willing to consider lung surgery if recommended.

The patient is 55 years old with a smoking history of 43 pack years.

RISK DISCUSSION: We discussed the benefits and harms of annual screening CT scans. Possible benefits include mortality reduction. Possible harms include radiation exposure of CT scans, over-diagnosis, false positive results leading to additional testing including invasive procedures, and major complications of those procedures.

The risk of a lung cancer diagnosis in 6 years is 3.8% with a mortality of 3.2%. Screening CT scans reduce mortality by 0.6 down to 2.6%.

Screening also adds overdiagnosis that raises incidence up to 4.2% and has the following rates of side effects: at least one false positive scan over 3 years 39.1%; invasive procedures 2.5%; major complications 0.3%

SCREENING DECISION: We chose to go ahead with screening.

NOTE: The patient's education is "Unknown." The calculations assume "Some college" (most common in trials), but this should be confirmed.

Copy

**Cut and paste
documentation
per CMS**

Place New Orders

- CT CHEST LOW DOSE RADIATION NO CONTRAST, SCREENING
- Shared Decision Consult: Patient Agrees to Lung Ca Screening

Accept

**Orders for a
YES patient**

Testimonials -- providers

- “These tools make the difference between a long conversation and an organized, streamlined, believable conversation.”
- “I went from a 10 min conversation to a 2 min conversation.”
- “When it comes to lung cancer screening, it has been a game changer for many of my patients. It has convinced many of my patients to quit smoking.”
- “Using the tools, the patients come to this from the perspective that I am working with them not just lecturing at them.”
- “Please make more tools like these.”
- “Thanks for making me a better doctor.”

Testimonials -- patients

"This gives patients an opportunity to feel like they are engaged in the process."

"It's easier to understand the information when it's visual."

"The tool opens the opportunity to have the conversation."

"I like that you can walk out of the exam room with a visual and it's not something you have to go and look up on Google for more information -- it summarizes what you and the doctor talked about."

"This tool would be great for my spouse, she hates numbers -- it's easier to understand the information when it's visual."

Questions?