

MITRE / FLUX NOTES **SELECTED CONCEPTS v14.6**

EDWIN CHOI, DANIEL REEVES, JUHAN SONIN, 29.JUN.2018



The following concepts explore the data capture driven templates and their interactions.

I NOTE GENERATION USING TEMPLATES

Debra24
Hernandez98AjDate of birth
5 Apr 1966 (51)Admin. sex
FemaleLocation
Boston, MACondition
Ductal carcinoma of the breastShared view

Debra24 search...



Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Summary

Timeline

Medication

Allergies

Labs

Social

Disease status

Progress note
10 April 2018Dr. Bran24 Michel09A
Dana Farber Cancer Institute

Close



Condition:

Invasive ductal carcinoma of breast

Fracture

Procedure:

Mammography

Core needle biopsy of breast

Another procedure that happened

Yet another procedure

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

REASON FOR VISIT

Follow-up consultation regarding a procedure related to @condition

HISTORY OF PRESENT ILLNESS

@HPI

PROCEDURE

The patient recently underwent @procedure on @dateof with @attending.

Remove unfilled elements and sign

Cancel

Remove note



Summary

Timeline

Medication

Allergies

Labs

Social

Disease status

Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Summary

Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Progress note
10 April 2018Dr. Bran24 Michel09A
Dana Farber Cancer Institute

Close

REASON FOR VISIT

Follow-up consultation regarding a procedure related to [invasive ductal carcinoma of the breast](#)

HISTORY OF PRESENT ILLNESS

@HPI

PROCEDURE

The patient recently underwent [mammography](#) on @dateof with @attending.



Condition:

Invasive ductal carcinoma of breast

Fracture

Procedure:

Mammography

Core needle biopsy of breast

Another procedure that happened

Yet another procedure

Cancel Confirm

Remove unfilled elements and sign

Remove note

Debra24
Hernandez98AjDate of birth
5 Apr 1966 (51)Admin. sex
FemaleLocation
Boston, MACondition
Ductal carcinoma of the breastShared view

Debra24 search...



Summary

Timeline

Medication

Allergies

Labs

Social

Disease status

Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician.

Using ?# creates a structured data capture placeholder

Sum...

Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Progress note

10 April 2018

Dr. Bran24 Michel09A

Dana Farber Cancer Institute

REASON FOR VISIT

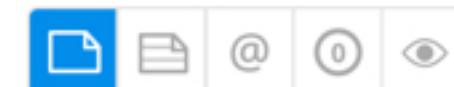
Follow-up consultation regarding a procedure related to **invasive ductal carcinoma of the breast**
Patient #staging |

HISTORY OF PRESENT ILLNESS

HPI for invasive ductal carcinoma of the breast

PROCEDURE

The patient recently underwent **mammography** on 6 May 2017 with Dr. Eli Krusk.



Condition:

Invasive ductal carcinoma of breast

Fracture

Procedure:

Mammography

Core needle biopsy of breast

Another procedure that happened

Yet another procedure

Cancel Confirm

Remove unfilled elements and sign

② CAPTURING PLACEHOLDER
STRUCTURED DATA USING POS



Summary

Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Timeline

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

Medication

Allergies

Labs

Social

Disease status

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Progress note

10 April 2018

Dr. Bran24 Michel09A

Dana Farber Cancer Institute

Close

ASSESSMENT

Patient's ?#staging|



Search shortcuts

Templates

Shortcuts

Patient

@patient

@age

@gender

@dateofbirth

@name

...

Remove unfilled elements and sign

Remove note



Summary

Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Timeline

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Progress note

10 April 2018

Dr. Bran24 Michel09A

Dana Farber Cancer Institute

Close

B I U ≡ ≡ | <__>

10 ASSESSMENT

Patient's [staging](#)

Given the current data, I determine [disease status](#)

The patient is [deceased or not deceased](#).

The patient is exhibiting [toxicity](#)

The patient is exhibiting [toxicity nausea](#)

The patient's [HER2](#) [ER](#) [PR](#)

The patient is [enrollment clinical trial](#)

Ask patient about [how her brother is doing](#).

[Remove unfilled elements and sign](#)



Search shortcuts

Templates
ShortcutsPatient
@patient
@age
@gender
@dateofbirth
@name
...



Debra24
Hernandez98Aj

Date of birth
5 Apr 1966 (51)

Admin. sex
Female

Location
Boston, MA

Condition
Ductal carcinoma of the breast

Shared view

Debra24 search...



Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Summary

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

Timeline

Medication

Allergies

Labs

Social

Disease status

Progress

10 April 2018

Dr. Free2 Will

Dana Farber Cancer Institute

Close



> #Staging

Tumor size [No data](#) Node size [No data](#) Metastasis [No data](#)

Tumor size

Tis	T0	T1	T2	T3	T4
-----	----	----	----	----	----

> #Disease status

Status [No data](#) Reason [No data](#) Reference date [No data](#) As of date [No data](#)

Status

Complete response	Complete resection	Responding	Stable	Progressing	Inevaluable
-------------------	--------------------	------------	--------	-------------	-------------

> #toxicity

Adverse event [Nausea](#) Grade [No data](#) Attribution [No data](#)

Grade

Grade 1	Grade 2	Grade 3	Grade 4
---------	---------	---------	---------

> #HER2

Receptor [No data](#)

Receptor

Positive	Negative
----------	----------

> #ER

Receptor [No data](#)

Receptor

Positive	Negative
----------	----------

> #PR

Receptor [No data](#)

Receptor

Positive	Negative
----------	----------

> #enrollment

Clinical trial [No data](#)



Debra24
Hernandez98Aj

Date of birth
5 Apr 1966 (51)

Admin. sex
Female

Location
Boston, MA

Condition
Ductal carcinoma of the breast

Shared view

Debra24 search...



Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Summary

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Progress
10 April 2018

Dr. Free2 Will
Dana Farber Cancer Institute

Close



✓ > #Staging
Tumor size T0 Node size N2 Metastasis No data
Metastasis M0 M1

> #Disease status Status No data Reason No data Reference date No data As of date No data

Status	Complete response	Complete resection	Responding	Stable	Progressing	Inevaluable
--------	-------------------	--------------------	------------	--------	-------------	-------------

> #toxicity Adverse event Nausea Grade No data Attribution No data

Grade	Grade 1	Grade 2	Grade 3	Grade 4
-------	---------	---------	---------	---------

> #HER2 Receptor No data

Receptor	Positive	Negative
----------	----------	----------

> #ER Receptor No data

Receptor	Positive	Negative
----------	----------	----------

> #PR Receptor No data

Receptor	Positive	Negative
----------	----------	----------

> #enrollment Clinical trial No data

Clinical trial	PATIENT	PATIENT	PATIENT	PATIENT
----------------	---------	---------	---------	---------



Debra24
Hernandez98Aj

Date of birth
5 Apr 1966 (51)

Admin. sex
Female

Location

Boston, MA

Condition

Ductal carcinoma of the breast

Shared view



Debra24 search...



Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Summary

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Progress

10 April 2018

Dr. Free2 Will

Dana Farber Cancer Institute

Close



✓ > #Staging Tumor size T0 Node size N2 Metastasis M0

> #Disease status Status No data Reason No data Reference date No data As of date No data

Status	Complete response	Complete resection	Responding	Stable	Progressing	Inevaluable
--------	-------------------	--------------------	------------	--------	-------------	-------------

> #toxicity Adverse event Nausea Grade No data Attribution No data

Grade	Grade 1	Grade 2	Grade 3	Grade 4
-------	---------	---------	---------	---------

> #HER2 Receptor No data

Receptor	Positive	Negative
----------	----------	----------

> #ER Receptor No data

Receptor	Positive	Negative
----------	----------	----------

> #PR Receptor No data

Receptor	Positive	Negative
----------	----------	----------

> #enrollment Clinical trial No data

Clinical trial	PATINA	PALLAS	title
----------------	--------	--------	-------



Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Summary

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

Timeline

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

Medication

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Allergies

Labs

Social

Disease status

Progress
10 April 2018Dr. Free2 Will
Dana Farber Cancer Institute

Close

✓ > #Staging Tumor size T0 Node size N2 Metastasis M0> #Disease status Status No data Reason No data Reference date No data As of date No data

Status	Complete response	Complete resection	Responding	Stable	Progressing	Inevaluable
--------	-------------------	--------------------	------------	--------	-------------	-------------

> #toxicity Adverse event No data Grade No data Attribution No data

Grade	Grade 1	Grade 2	Grade 3	Grade 4
-------	---------	---------	---------	---------

> #toxicity Adverse event Nausea Grade No data Attribution No data

Grade	Grade 1	Grade 2	Grade 3	Grade 4
-------	---------	---------	---------	---------

✓ > #HER2 Receptor positive✓ > #ER Receptor positive✓ > #PR Receptor positive✓ > #enrollment Clinical trial PATINA✓ > #Etc... Receptor positive✓ > #Etc... Receptor positive



Summary

Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Timeline

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Progress note

10 April 2018

Dr. Bran24 Michel09A

Dana Farber Cancer Institute

Close

B I U ≡ ≡ | <__>

8 ASSESSMENT

Patient's staging is IIIA based on T0, N2, and has M0.

Given the current data, I determine disease status

The patient is deceased or not deceased.

The patient is exhibiting toxicity

The patient is exhibiting toxicity nausea.

The patient's HER2 is positive. ER is positive. PR is positive.

The patient is enrolled in PATINA.

Ask patient about how her brother is doing.

Remove unfilled elements and sign



Search shortcuts

Templates
ShortcutsPatient
@patient
@age
@gender
@dateofbirth
@name
...

3

CAPTURING NO TOXICITY



Summary

Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Timeline

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Progress note

10 April 2018

Dr. Bran24 Michel09A

Dana Farber Cancer Institute

Close

B I U ≡ ≡ | <__>

10

ASSESSMENT

Patient's [staging](#)

Given the current data, I determine [disease status](#)

The patient is [deceased or not deceased](#).

The patient is exhibiting [toxicity](#)

The patient is exhibiting [toxicity nausea](#)

The patient's [HER2](#) [ER](#) [PR](#)

The patient is [enrollment clinical trial](#)

Ask patient about [how her brother is doing](#).



10 corrections

is exhibiting [toxicity](#)

Ignore toxicity

Adverse event

Febrile neutropenia

Fatigue

Generalized muscle weakness

Anemia

Diarrhea

Nausea

No adverse event

Grade

1 2 3 4

Attribution

ASSESSMENT

Patient's staging

Given the current data, I determine disease status

The patient is deceased or not deceased.

The patient is exhibiting no toxicities

The patient is exhibiting toxicity nausea

The patient's HER2, ER, PR

The patient is enrollment clinical trial

Ask patient about how her brother is doing.

4

CAPTURING EXISTING TOXICITIES

The following designs were created under the assumption that the same toxicity can continue to be tracked in a structured data format through its duration. This may not be the case in the actual clinical setting and requires further feedback from clinicians to ensure accuracy.



Summary

Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Timeline

Summary



Ms. Debra24 Hernandez98Aj is a 51-year-old menopausal non hispanic or latino woman with invasive ductal carcinoma of the breast, diagnosed on 13 January 2012. Her most recent status, recorded on 15 May 2017, is of worsening, disease progression based on pathology, imaging, and symptoms.

She underwent a lumpectomy. She underwent a sentinel lymph node biopsy on 20 September 2012 which revealed infiltrating poorly differentiated ductal carcinoma, stage IV, estrogen receptor 0, etc.

diagnostic mammogram on 4 October 2013 revealed a 2 cm mass in the right breast at 7 o'clock and an

Progress note
10 April 2018Dr. Bran24 Michel09A
Dana Farber Cancer Institute

Close

B I U ≡ ≡ | <__>

10 ASSESSMENT

Patient's [staging](#)Given the current data, I determine [disease status](#)The patient is [deceased or not deceased](#).The patient is exhibiting [toxicity](#)The patient is exhibiting [toxicity nausea](#)The patient's [HER2](#) [ER](#) [PR](#)The patient is [enrollment clinical trial](#)Ask patient about [how her brother is doing](#).

10 corrections

is exhibiting [toxicity nausea](#)

Ignore toxicity

Nausea was previously captured on 8 May 2018

Grade

1 2 3 4

Attribution

Treatment

Disease

Error

Unknown

Unrelated

Ignore attribution

Continuity

Continuing toxicity

End toxicity

Continuing toxicity (with attribute changes)

Grade



Continuity

Continuing toxicity

End toxicity

New toxicity

9 ASSESSMENT

Patient's staging

Given the current data, I determine disease status

The patient is deceased or not deceased.

The patient is exhibiting toxicity

The patient is exhibiting change in toxicity nausea to grade 2 based on treatment.

The patient's HER2 ER PR

The patient is enrollment clinical trial

Ask patient about how her brother is doing.

Continuing toxicity (no attribute changes)

Continuity

Continuing toxicity

End toxicity

New toxicity

9 ASSESSMENT

Patient's staging

Given the current data, I determine disease status

The patient is deceased or not deceased.

The patient is exhibiting toxicity

The patient is exhibiting continuing toxicity nausea grade 1 based on treatment

The patient's HER2 ER PR

The patient is enrollment clinical trial

Ask patient about how her brother is doing

End toxicity

Continuity

Continuing toxicity

End toxicity

New toxicity



9 ASSESSMENT

Patient's staging

Given the current data, I determine disease status

The patient is deceased or not deceased.

The patient is exhibiting toxicity

The patient is exhibiting a stop to toxicity nausea no grade based on treatment.

The patient's HER2 ER PR.

The patient is enrollment clinical trial

Ask patient about how her brother is doing.

New toxicity

Continuity

Continuing toxicity
End toxicity
New toxicity



Flux Notes Dr. Bran24 Michel09A Debra24 Hernandez98Aj Date of birth 5 Apr 1966 (51) Admin. sex Female Location Boston, MA Condition Ductal carcinoma of the breast Shared view Debra24 search...

Dr. Jraker299 referred ms. Debra24 Hernandez98Aj due to pain in left breast. Dr. Jraker299 is ms. Debra24 Hernandez98Aj's primary care physician for 12 years.

Summary Timeline Medication Allergies Labs Social Disease status

Progress note Dr. Bran24 Michel09A 10 April 2018 Dana Farber Cancer Institute 10 corrections is exhibiting toxicity nausea Adverse event: Nausea Grade 1 2 3 4 Attribution Treatment Disease Error Unknown Unrelated The patient's HER2 ER PR Remove unfilled elements and sign Remove note

Given the current data, I determine disease status

The patient is deceased or not deceased.

The patient is exhibiting toxicity

The patient is exhibiting toxicity nausea

The patient's HER2 ER PR

The patient is enrollment clinical trial

Ask patient about how her brother is doing.

Remove unfilled elements and sign Remove note