ASCO’s Quality Training Program

Project Title: Creating a Safer Medical Record: ICD code entered and correct

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Institution: Clínica AMO

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Clínica AMO is a private practice located in the state of Bahia, Brazil.

Founded in 1994, now there are 7 units with 125 doctors of 20 different specialties and over 240 employees.

> 58,000 medical appointments and > 22,500 chemotherapy sessions in 2016
Team Leader: Thamine Lessa, MD - Pneumologist

Team Members:

- Nelson Pestana, CEO
- Adriana Alves, Nurse Manager
- Paulo Amaral, MD – Surgeon
- Olga Neves, Administrator
- Mariane Machado, Nurse
- Álvaro Machado, BPharm
- Maria Dias, MD – Hematologist
- Caio Silverio, MD – Oncologist
- Elder Pimenta, IT Manager

Project Sponsors: Carlos Sampaio, MD, President of Clínica AMO; Nelson Pestana, CEO of Clínica AMO.
Problem Statement

In 2016 at AMO, **20.7%** of our patients following the third visit have missing or incorrect ICD documentation in the appropriate field in the electronic medical record (EMR). This leads to lack of coordination amongst the multidisciplinary team and inconsistencies in data gathering and analysis focused on clinical research and management.
Applying the ICD Code

Line of Care for Thoracic Oncology
(High Probability of Lung Cancer)

Chosen eligible ICDs for monitoring: E.g. R91 (Thoracic Mass)

When correct documented in EMR

Patient automatically starts on the Line of Care and begins being monitored by the multidisciplinary team

Log the time between each and every events (E.g. From diagnosis to surgery)
Physician receives patient for 3rd appointment

Open chart (EMR)

Reassess patient and check exams

Definitive diagnosis?

Enter definitive ICD in the "ABA Diag" field

Needs another appointment?

Give Therapeutic orientations

Y

End 3rd Consult

N

Register discharge in the "CONDUTA" field

Inform the patient to schedule another appointment

Validate the non-definitive ICD in the "ABA Diag" field

Request additional tests, indicating the non-definitive ICD in the "ABA Pedidos" field

Inform the patient to schedule another appointment

Update suspected diagnosis in the "IMPRESSÃO" field

Y

Change screen to find "ABA diag" field

Change screen to find "ABA diag" field

Y

Change screen to find "ABA Diag" field

N

Need other exams?

N

Validate the non-definitive ICD in the "ABA Diag" field

N

Definitive diagnosis?

N

Update suspected diagnosis in the "IMPRESSÃO" field

Enter definitive ICD in the "ABA Diag" field
Baseline Data

ICD appropriate documentation analysis
Audit of patients with 3 consults

- ICD correctly registered: 79.3%
- ICD mistakenly registered: 20.7%

N=348
Baseline Data

ICD appropriate documentation analysis
Audit of patients with 3 consults

N=348

- ICD correctly registered: 79.3%
- ICD missing: 14.1%
- ICD mistakenly registered: 6.6%
In 2016, 20.7% of the patients at the 3rd visit had a missing or incorrect ICD documented in the EMR.

**Logistics**
- Consults are too short
- Interval between consults is too short
- Unavoidable delay in getting the results of the tests
- Patient without a definitive diagnosis
- There are no standards about what should be registered at a consult
- The ICD documentation is not being monitored

**Training**
- Lack of Knowledge about the tool
- Training was inadequate or insufficient
- There are no incentives or consequences about doing or not a proper documentation
- The clinic pays little for the consult
- It is not mandatory

**People**
- Forget to do it
- Changing in the diagnosis and didn’t modify de ICD
- Surgeons don’t write clinical information in the EMR
- The same field is used to put either a definitive or a temporary ICD
- Some conditions are not contemplated on the ICD
- There are too many fields to be filled up on a consult
- The ICD field is not easy to find
- The ICD documentation is not being monitored

**Management**
- It is not mandatory

**Tool**
- The ICD field is not easy to find

**Problem**
- Lack of interest in filling the ICD (see no need)
Collecting Diagnostic Data

Identify the average time of your 1st consults

( ) Less than 10 minutes
( ) 10 to 20 minutes
( ) 20 to 30 minutes
( ) more than 30 minutes

Indicate the average time of your general consults

( ) Less than 10 minutes
( ) 10 to 20 minutes
( ) 20 to 30 minutes
( ) more than 30 minutes

Indicate whether you do or don’t know the appropriate field in the EMR for ICD registration: ( ) Yes ( ) No

Describe what you think is the utility of the ICD in the:

[ ]

Indicate how important you think it is to register the ICD in the EMR:

( ) Irrelevant
( ) Not important
( ) Important
( ) Very Important
( ) Indispensable

Pick 3 options which you think describe the main reasons why the ICD may not be properly registered in the EMR:

1) Consults are too short
2) Too many fields to write down
3) I don’t think it is important to fill up the ICD
4) I think it is important, but I forget to do it
5) I don’t know why AMO needs it
6) Patient doesn’t have the results of the confirmatory tests yet
7) There are some diseases which are not described in the ICD list I think I was not well trained to use our EMR
8) The EMR interface is not user-friendly
9) I don’t know the politics for proper clinical registration dictated by the Institution

Other not listed above: [ ]

Other comments:

[ ]
Diagnostic Data

Pareto Chart

Main reasons not to document ICD

N = 143
Diagnostic Data

Actions Suggested

- Hardwire: 32%
- Interface: 27%
- Training: 20%
- Reminders: 14%
- Others: 7%

N= 143
Aim Statement

Reduce the percentage of missing or incorrect ICD documentation following the 3rd consult to 5% within 6 months
Measures

- **Measure**: Outcome - % of patients with correct ICD registered in the proper field in the EMR

- **Patient population**: Patients with 3 office appointments with his/her doctors

- **Calculation methodology**: Patients with 3 appointments with proper ICD registered in the ICD field / Total of patients with 3 appointments

- **Data source**: EMR

- **Data collection frequency**: Every 1/3/6 months

- **Data quality(any limitations)**: Potential for human error; Sample size.
## Prioritized List of Changes (Priority/Pay–Off Matrix)

<table>
<thead>
<tr>
<th>Impact</th>
<th>Easy</th>
<th>Difficult</th>
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</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
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</table>
|        | • Additional training for doctors on how to document ICD in the EMR  
|        | • Create individual reports of compliance to give feedback to the doctors |                           |
| High   |      |           |
|        | • Move ICD FIELD from supplementary form to the main form |                           |
|        | • Educate doctors on why ICD matters  
|        | • Establish mandatory nursing consults prior to medical appointment  
|        | • Make ICD mandatory after 3\(^{rd}\) consult  
|        | • Put electronic reminders on EMR |                           |
# PDSA Plan (Test of Change)

<table>
<thead>
<tr>
<th>Date of PDSA Cycle</th>
<th>Description of Intervention</th>
<th>Results</th>
<th>Action Steps</th>
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| August 22<sup>nd</sup> | Move ICD FIELD from supplementary form to the main form | Completed | • Get approval from the Chart Commission  
• Design the change on the form  
• Implement change  
• Communicate doctors |
| August 22<sup>nd</sup>-September 4<sup>th</sup> | Education actions towards showing importance of ICD and correct documentation | Completed | • Sent e-mail with orientations  
• Reinforced importance of ICD documentation during weekly meetings with doctors |
| August 22<sup>nd</sup>-September 29<sup>th</sup> | IT staff coaching | Completed | • IT staff working one-on-one with doctors in clinic to coach and answer questions about ICD documentation |
# PDSA Plan (Test of Change)

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<td>August 22&lt;sup&gt;nd&lt;/sup&gt; - December</td>
<td>Make ICD mandatory in the EMR from 3&lt;sup&gt;rd&lt;/sup&gt; appointment and beyond</td>
<td>TBD</td>
<td>• Request made to software company</td>
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<td>August 22&lt;sup&gt;nd&lt;/sup&gt; - December</td>
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<td>August 22&lt;sup&gt;nd&lt;/sup&gt; - November</td>
<td>Create individual reports of compliance to give feedback to the doctors</td>
<td>TBD</td>
<td>• Request made to internal IT development team</td>
</tr>
</tbody>
</table>
Change Data

Baseline Data
- N= 348
- ICD correctly registered; 79.3%
- ICD missing/incorrect; 20.7%

Post-Intervention Data
- N= 325
- ICD correctly registered; 89.5%
- ICD missing/incorrect; 10.5%
Change Data

ICD documentation comparison

- Baseline Data:
  - Defect: 20.7%
  - ICD mistakenly registered: 14.1%
  - ICD missing: 6.6%

- Post-intervention Data:
  - Defect: 10.5%
  - ICD mistakenly registered: 8.0%
  - ICD missing: 2.5%
Conclusions

• Despite we did not yet reach our goal, we reduced error rate by 45.8%
• It was very helpful to have a multidisciplinary team and to include all doctors in the analysis and generating solutions
• The fact that we were able to reduce by half the defects with only three easy to implement actions makes us very confident to apply this methodology in order to solve many other problems
• We improved the consistency of an important parameter our database
Next Steps/Plan for Sustainability

• Implement additional actions as planned on the beginning;

• Measure the results over time

• Apply the methodology to other problems in our institution
Creating a safer Medical Record – ICD entered and correct

**AIM:** Reduce the percentage of missing or incorrect ICD registration up to the 3rd consult to 5% in within 6 months

**INTERVENTION:**
- Change the local where the doctors shall input the ICD on EMR, because it was located in a place that was not easy to remember, and many doctors suggested that change;
- The medical director sent some e-mails to the doctors about the importance of putting the appropriate ICD in the correct field of the EMR;
- The medical director used his weekly meeting with the doctor to talked about the correct way to register ICD and why it is important to the institution;
- IT staff became available at the office’s floor for a month to help doctors with any difficulties they might have in using the EMR properly

**RESULTS:**

![ICD documentation comparison graph]

**CONCLUSIONS:**
- Although we did not yet reach our goal, we reduced error rate by 45.8%;
- It was very helpful to have a multisciplinary team and to include all doctors in the analysis and generating solutions;
- The fact that we were able to reduce by half the defects with only three easy to implement actions makes us very confident to apply this methodology in order to solve many other problems;
- We improved significantly the consistency of our database;

**NEXT STEPS:**
- Implement additional actions as planned on the beginning;
- Measure the results over time;
- Apply the methodology to other problems ins our institution;

**TEAM:**
- Nelson Pestana, CEO;
- Álvaro Machado, BPharm;
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