Health Informatics on FHIR
Federal Programs: Meaningful Use

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[MUSIC]

In this lesson we move on to the second key component of the federal adoption program, meaningful use.
By the end of this lesson you will be able to understand how providers must use their certified EHR to qualify for incentive payments.
And appreciate that the requirements align with many of the problems we discussed earlier.

0:28

Earlier I introduced the term eligible hospital and eligible provider.
Here's an actual definition of eligible hospitals.
I'm not gonna read it to you, you can read it yourself.
But it encompasses most hospitals in the United States.

0:44

Eligible providers are similarly broadly defined and encompass many
classes of professionals other than just physicians although you may find
me using the term physician sometime when I refer to eligible providers.
It's important to realize there are many other health care professionals that
are included in that.
A key characteristic of meaningful use is that it's defined in
three chronologic stages which take place over a number of years.
Stage one was defined some time ago.
And most providers that have registered for the program have achieved stage one.
Stage two is the focus now,
providers who have achieved stage one are working to achieve stage two.
Stage three is still being defined by the federal government.
A proposal for it was posted recently, comments were submitted, and
a final definition of stage three will be out at some point in the future.

1:43

A key part of this program is submitting electronically certain
key measures that show that a provider is doing things and
achieving results that are required by the program.
Now, this requirement that providers submit metrics leads
to the whole issue of how you measure health quality.
This is the Institute of Medicine's definition.
If you do things that increase the likelihood of desired outcomes, results,
that are consistent with current professional knowledge,
in other words you're using what's known to be the best treatment.
You might recall I said that half of the elderly chronic disease patients in
the country don't get what's known to be the best treatment.
So this is a major issue.
Then, anything that helps measure that is a good measure of health quality.
Here's a great example.
One of the most common chronic diseases is diabetes.

2:43

Which is a loss of the body's ability to control blood glucose levels,
this blue line here.

2:50

It turns out there's a component of the hemoglobin in
our red blood cells called A1C,
which tracks the average blood glucose level over time.
It's a wonderful thing because that's the goal of diabetes treatment to make
the average blood glucose level over time be where we'd like it to be.
So the A1C level is a metric that correlates very well
with the goals of managing diabetes.

3:22

Hemoglobin A1C is not only used for understanding the goal of a quality
measure, it's useful for understanding the two types of quality measures,
which are process measures, and outcome measures.
Most existing quality measures today are process measures.
So for hemoglobin A1C, it's,
did the doctor actually do the A1C test at least annually?

3:47

So the metric that the doctor would submit is the percent of their diabetic patients,
who had the test in the last 12 months.
The outcome measure is did the doctor actually achieve adequate control?

4:04

As measured by hemoglobin A1C level, for
the meaningful use program, being greater than or less than 9%.
Greater than is out of control, less than is control.

4:18

So this one test can provide a measure where the doctor
did what they were supposed to do, in terms of the test, and whether
their overall treatment of the diabetic patients is achieving the desired results.
One of the inherent limitations of this form of instruction is
that once video lectures are recorded they're not that easy to change.
This is a revised discussion of the meaningful
use program recorded at the beginning of November, 2015,
after ONC made a number of changes to the program in October.
Among these, as you can see at the top, was increased emphasis on
interoperability and data exchange among EHR systems.
We're gonna discuss this at great length later on in the course,
the technologies for doing this.
But this was in clear response to complaints that
the EHR's widely adopted, and we'll see that they were.
But that they really weren't very good at talking to each other.
This was an entirely predictable problem and one that I believe we're beginning to
respond to through the fire technology that, again,
we'll be discussing later in the course.
In fact, the final meaningful use stage three rules are out and
they introduce the concept of API, or application program interfaces,
which is essentially code for fire, the API based standard for
health information exchange that we're gonna discuss later in the course.
This is an important development.

6:00

Moreover in the new ONC Interoperability Roadmap,
also released in October 2015.
And you probably can't read this here, fire itself is included in the timeline
of progress in interoperability as in important new development.
Something I certainly agree with.
And FHIR as said here is actually mentioned nine times
in this interoperability roadmap, the ONC's plan for
achieving interoperability in the foreseeable future.

6:37

Again, as you'll see a bit later on,
the programs did lead to a lot of EHR adoption.
But providers, particularly office based providers have struggled
with some of the requirements beyond stage one of meaningful use.
So another change recently introduced was a modification.
In stage two in many cases to lower the requirements.
These are some examples of key requirements in stage two,
and where those requirements now go as a part of stage three.
I leave it to you to read these for yourself.
But trust me, in some cases the stage two bar is lower than it was in
previous versions of meaningful use.

7:27

Here's another example of the redefinition of stage two.
And particularly interesting to me, under patient engagement,
is that only one patients seen by the eligible provider during the EHR
reporting period had to actually download or transmit their data.
In the prior version, that was 5% of patients.

7:50

We see here that, in stage three, that 5% number comes back and,
in fact, there are several measures of patient engagement.
Including viewing, downloading, or transmitting their health data.

8:08

Receiving a secure message, or responding to a secure message from the patient,
or incorporating patient generated health data from another source into the EHR.
A very interesting concept that leads right into mHealth and
patient engagement from the home, which so many people are excited about.

8:34

Likewise, these are the new stage three requirements for
health information exchange.
And if you read all of this, you'll see it all revolves around transitions of care,
when patients are being referred from one provider to another.
Specifies what the referring provider needs to do, what the provider to whom
the patient is referred needs to do, and says that 80% of the time,
new information received electronically should be reconciled.
Against clinical information already in the provider's chart.

9:08

I said a few minutes ago that these programs have lead to widespread adoption
of electronic health records.
I won't quote actual statistics as I've
frequently done in the past cuz they keep changing.
But I refer you to the site that's in the lower left of this slide
the dashboard maintained by the office of the national coordinator for health IT so
that you can interactively check on progress whenever you are so inclined.
You can see from this graphic taken from that side that a very high percentage of
hospitals have now achieved at least meaningful use stage one
with their electrical health records system.
In fact, the overall percentage of hospitals is 95.
Unsurprisingly the numbers aren't as great for
office-based eligible providers with nationally,
about 54% having achieved at least stage one of meaningful use,
and it's really this difficulty that's led to the modifications to the program.
And there's ongoing pressure from organizations, even organizations that
support the program to further modify it to provide physicians with more time and
make modifications that will make the program easier physicians to work with.
There are some space, however, in green here,
where the physician adoption levels are quite high.

10:36

And one of the intended results of the program was that
hospitals would engage their patients electronically.
Here's another graphic from the dashboard you can explore it interactively.
You hover over it, get more statistics,
the different colors represent years from 2012 to 2014.
And you can see continued progress with some measures
of patient engagement now approaching 100%.
Or certainly well above 75%.

11:06

Finally, looking at patient engagement as a whole, this graphic, again,
from ONC's dashboard, looks at various ways to interact with patients via
text messaging, smart phone applications and so forth.
And again, year by year shows increasing use of those technologies
with almost half patients, half of all patients engaging using one or
more of those technologies by the end of 2014.
Finally, this is a very interesting statistic from the ONC dashboard,
showing the progress that's been made by hospitals in trying to achieve continuity
of care by electronically notifying
a patient's primary care physician when they're seen in the ER.
Here, again, it's 2012, 13 and 14 as the bars go up.
I wanna draw your attention to the substantial difference however,
between the middle set of bars,
which is where the physician is within the hospital's care system, as opposed to
the last set of bars where the physician is outside of the care system.
And you'll see that the percentage of the time the physician is notified is
substantially less, roughly half I would say in 2014.
So this is the interoperability problem raising its head.
We'll be talking about how we might make progress technologically to solve that
later on in the course.
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