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I'm Steve Jencks, and I'm going to present a bite-sized learning on Understanding the Context of Using Data for Improvement. You have, on your plate so to speak, two bite-sized learnings about improvement. One is how to use data to understand disparities and prevent avoidable readmissions in vulnerable patient populations. And the other is visualizing disparities using a chronic disease mapping tool. And both of those are potentially very useful in your work, but there is a hazard that you will think that they are telling you how to do some things that you're not going to be told and then you're going to feel very frustrated.

So let me try to give you, what I would call, four laws of using data to improve care. The first is: the data you have are not what you want. You want data that will tell you what to do. The data you will have tells you who has diseases, who has obstacles to successful care, but not how to improve it.

The second law is that the data you want are not the data you need. The data you want are data which tell you what kind of barriers individuals are facing and you might want to know, as well, whether we know anything about overcoming those barriers. But what you need are data that tell you how the process of care is failing for your patients, and those data are hard to come by. In fact, they are, in many cases, unobtainable. You can get information about things like follow-up, provided you know that follow-up was intended. But if you don't know that follow-up was intended, it's harder and if you simply don't know what was intended in other ways, for example, did the patient actually take a medication? Did they actually call when they had a problem? You're going to find that system just generally doesn't have that information, and it's not easy to get it.

Finally, and this is the fourth law and it is the one that it is easiest, in a sense, to do something about. The fourth law is that it is far too easy to tell yourself that the data you can get are what you need. And, by a way of illustrating that, let me take two quotes from these bite-sized learnings that are on your plate.

The first is, "The MMD tool is a useful way for QIN-QIOs to identify and reduce chronic disease disparities." I absolutely agree with the first statement, that it's a useful way to identify disparities in chronic diseases, if we mean disparities in prevalence and incidence. But if what we mean is care and outcomes, ==that [] gets== us there. And if what we mean is not just to identify, but to reduce, reduction is far much more complicated.

The second bite-sized learning on your plate, and includes the words that you should "identify the root causes by determining patients, populations, and characteristics that are linked to readmissions." Well, what I would say is that those pieces of information on patients, populations, and characteristics are important information, which can often be gotten by demographic and other kinds of analysis. And some of the barriers can be gotten by asking questions of the patients, at registration or other times. But what cannot be done so easily is to determine the root causes and getting a root cause out of the kind of data that's discussed here is not going to be very practical unless you do a lot more talking to patient to understand what are things that look like they might be root causes really are.

The problem in each case is that it's relatively easy to tell one of you, a quality improvement specialist, how to get the data. And it's very much more complicated to tell you how to use it to make care better.

What we're up against is simply that most of us have learned how to use data from a model which is healthcare or health services research. It uses the data to show that X is effective. It uses the data to

show that this disease is more prevalent in group A than group B. But the aim of care improvement is to improve a process, how, in the case of discharge and prevention of readmission to rehand the patient off from inpatient to outpatient care. That is a study of our processes. It is not research. And the mismatch between the research model and the process improvement model can lead to terrible waste.

One of the things that folks will say is that data can help you target your interventions and identify the problems. If you ask members of your team when or to what extent they feel that data has actually been critical in identifying problems, I think you'll be a bit disappointed. And if you ask them when knowing about a population's relative disparities helps them to know what to do to improve those disparities, I think, again, you'll feel disappointed.

There's a further complication, which is really more important than it seems at first glance. And that is that targeting care, for example to people with a particular skin care, to people with a particular level of skill in the English language, or to people who live in a particularly deprived area, are actually more difficult to implement than changes to the whole care system, because they add another opportunity to fail by failing to identify the patient. And so, you really want to ask how much targeting you want to do.

For example, if you say, I want every patient who's receiving more than six medications to get the following list or printed instructions or teaching, you have an opportunity to fail by failing to identify the patients with more than six medications. And in the healthcare environment that's very easy to fail at. So, targeting is of limited success, and it may not be your best friend.

Interventions are best designed to prevent recurrence of failures in the process, and, except for a few things like keeping follow-up appointments, you're going to find it hard to get information on these failures. Try to find out whether the patient knew what to do if something went wrong and had a number to call and knew to call a number is pretty hard if you simply look in the record. It is pretty hard if you go to the patient after they've been readmitted. In each case, we have to look at how we're going to get the data that will be likely to be informative.

An area where we have even more significant problems is in tracking progress. The first thing is that we need to be measuring whether we're doing what we intended to do. If we're not, it doesn't matter how good our intentions were and I can tell you that since the beginning of the quality improvement efforts in the QIOs around 2000, we have consistently been astonished by how unreliably we do what we intend to do. This is not an exotic question. It is a key question, because if you do not do what you intended to do, it doesn't matter how good your plan was. And if you do what you intended to do and it doesn't succeed, you know that your plan need to be fixed. A part of this is to get the patient involved in evaluating our efforts. If we don't do that, our chances of tracking progress effectively are much more limited.

And finally, I would say, and this is a particular critique, I think, of the other two bite-sized learnings on your plate, are they going to help you track results in real-time? Because remember that what we're talking about is a series of improvement cycles: plan, do, check, act. And they require that we get data from the last cycle. If it takes us a year to get diagnostic data off of claims, then our improvement cycles cannot run faster than a year. And that means that improvement will be very slow.

If we can pick up readmissions, when the patient is readmitted, by looking at the list, a list from the admissions system, we are drastically reducing the cycle of improvement. And that means we can achieve a lot more. That real-time data is, I think, kind of underestimated or ignored and you need to be

aware of it.

And so, finally, I would like to sum up by saying that using data to improve care is a specialized science and few of us have been trained in it. It's actually closer to engineering in many ways. It's hard for us to think about the process of discharging a patient with the same kind of analytic thinking that we apply to producing a can of paint or a hamburger, yet engineers have been doing this for a long time. And we need to understand that doing more and more demographics is not a substitute for doing improvement science.

The second thing is that collecting data will not teach you how to use it. And if you don't track through from the prompt collection of timely data to ask how am I going to use this data, how is it going to tell me where to intervene, and how is it going to allow me, in the next cycle, to test whether my intervention was successful? Then, honestly, we're not much ahead of where we were to start with before we collected the data.

The third point I would emphasize, again, is that measuring what we are doing, what we intend to do, and whether the two are the same is a vital first step to doing it better. If we don't have that measurement of what we're doing and whether we're doing better by doing what we intend to do, then it is more likely than not that we will simply tamper with the system without improving it.

And I hope this context will help you to use the data that the other two learnings offer, which is potentially very useful if you've come to it with the right perspective. Thank you very much.