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Prescriptions for Excellence in HEALTH CARE

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Transition of Care Program Evaluation: Accountability and Attribution

By *Thomas Wilson, PhD, DrPH*

As the National Transition of Care Coalition (NTOCC; www.ntocc.org) has correctly identified, a key factor in improving transition of care (TOC) transactions is the identification of the “accountable provider” at various points in the transition. The measurement workgroup of NTOCC (of which I am a member) has written that, to properly evaluate a TOC program, an “accountable provider” must be identified at both the sending and receiving end of the transaction, and there must be a record that the transition actually took place.

The idea of recording a successful transition between accountable providers is at the very foundation of being able to measure the effectiveness of initiatives designed to improve TOCs between providers and between settings.

It must be pointed out that overall effectiveness goes beyond a successful handoff. Ultimately we want to document that more effective and efficient care has taken place because of this improvement, and, most importantly, that the health of the patient is better than it otherwise would have been without the improvement.

In the classic quality improvement (QI) framework, a successful handoff is a much needed “process”

improvement that could be augmented by improvements in “structure.”

However, without improvements in “outcomes,” the new transition of care initiative would not be considered a complete success.

To illustrate this point, the QI framework can be applied to a relay race being run on a track – a prototypical transition. The structure is the well-designed/engineered running track. The process is the baton securely in the hand of the sending runner, then briefly in the hands of both the sending and receiving runner during the handoff, and finally, securely in the hand of the receiving runner. The desired outcome is the “anchor” relay team member sprinting to first place in the race.

We need to win our race, too. But in health care we often run the race alone, and when we run the race alone it is very difficult to take into account factors outside our control – confounding factors – that may influence the desired outcomes. Of course, on the track we run against competitors, and many factors are likely to influence the outcome (eg, rain, wind, heat). However, such factors impact all runners and, thus, are unlikely to impact the outcome. Other factors (eg, performance enhancing drugs) that are not

ubiquitous are obvious exceptions and must be considered.

When we conduct TOC programs in isolation, we can easily track changes in process (ie, better handoffs) as there are not likely strong influences on these processes. The very common and necessary practice of tracking changes in desired outcomes over time (eg, quality of life, quality of health) is essential, but blindly attributing these changes to the process improvement can be problematic. We must consider the influence of confounding factors and, when possible, build consideration of these into our intervention and evaluation strategy. Only then can we fairly attribute measured improvements over time to our special quality processes.

Thus, the framework for enhanced measurement of quality of TOC improvements should be expanded to include consideration of confounding factors to enable us to make attribution (ie, a causal link: structure, process, outcomes, and attribution).

This is a 5-step process.

1. Identify the “accountable providers” in the TOC process.
2. Remain aware that simply tracking outcomes over time and attributing

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changes to a single process improvement may be problematic. We must consider other factors that may be responsible for the outcomes. Often, multiple initiatives take place in the same setting. How many current initiatives target reduction in hospital readmissions in the same setting? How many of these initiatives claim credit for the same outcome, at least when the outcome shows improvement? If 10 initiatives claim credit for a single outcome, might we be wasting precious resources? Thus, awareness of the “attribution problem” is necessary, but not sufficient.

3. Build into any TOC strategy a clear understanding of the causal pathway from process improvement to outcomes improvement. Going directly from a better handoff to a reduction in readmissions may be too great a hypothetical leap. Instead, we must build an intervention pathway with interim markers along the way. For example: “A” leads to “B” leads to “C” (ie, reduction in readmissions), where “B” – 1 or 2 interim metrics – is something likely to be directly influenced by the TOC intervention.
4. Build into any TOC intervention an evaluation strategy to use the pathway and pathway metrics devised, taking into account as much as possible the confounding factors. A conceptual framework for this process, developed by the nonprofit Population Health Impact Institute (www.phiinstitute.org), has proven to be a good guideline. The framework contains 3 types of pathway metrics, listed in order of causality (Types I, II, and III), and 1 type of confounding factor metric (Type IV). The conceptual diagram clearly shows that Type IV metrics can influence the pathway.
5. Include in the evaluation strategy some ability to isolate the TOC intervention (as measured by a Type

I metric) from other interventions. This requires the use of a comparator or a referent. A defined time period prior to the intervention is a decent referent if no other factors will significantly influence the outcomes in this time series. The decent referent is akin to the other runners in the relay race scenario. Ideally, it is influenced by the same important confounding factors as the TOC intervention, except the individuals in the referent did not experience the TOC intervention.

The referent can be identified by design at the beginning of your initiative (eg, conduct the TOC intervention on 1 inpatient floor, in 1 region, or in 1 department and use another floor, region, or department as a referent or comparator); or by happenstance (eg, you discover that 1 floor, region, or department did not participate in the TOC intervention). Although many referents can be devised (eg, benchmark, peer-reviewed article, randomized controlled trial), the key validity consideration is to use the referent to assess the degree to which it is (or was, in the case of a peer-reviewed article or published benchmark) influenced by the same confounding factors as the TOC intervention.

The referent can be used to determine if the identified confounding factor metrics were present. If so, the comparison of outcome metric values between the TOC population and the referent can be used to assess the “attribution” of the process improvement to the outcomes improvement, while taking into account confounding factors.

A typical dictionary definition of “accountable” is the “individual or departmental responsibility to perform a certain function.” To conduct proper evaluations we need individuals to be responsible for recording the sending and receiving transaction. But just because a send-receive was conducted does not mean a positive impact on

quality of life or health occurred. Such a determination requires “attribution,” defined by the dictionary as “the act of establishing a particular person as the creator of something (eg, a work of art)” in order to make a legitimate cause-effect statement (www.thefreedictionary.com). Thus accountability and attribution are not the same thing. The former is related to an organizational structure needed, in this case, to ensure that the metrics are recorded. The latter is related to a method of causal inference. Both must be considered to make these kinds of statements: “*The author did create this work.*” “*The TOC intervention did influence the outcome.*”

In summary, these 5 steps must be followed to determine if the “accountable” provider model – and any associated TOC intervention – can be attributed to targeted outcomes:

1. Identify the accountable providers at both the sending and receiving end of a TOC intervention.
2. Be aware of possible external influences – confounding factors – on targeted outcomes.
3. Define the pathway from TOC intervention (as reported by the accountable providers) to the outcome(s).
4. Identify confounding factors and include these in the evaluation model as metrics.
5. Identify a referent to assess the equivalence of confounding factors and to compare outcome metrics.

Using these 5 steps as a framework can help improve TOC interventions by “giving credit where credit is due.”

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