Sepsis Progression

"IF THE PHYSICIAN DIDN'T DOCUMENT IT, IT DIDN'T HAPPEN"

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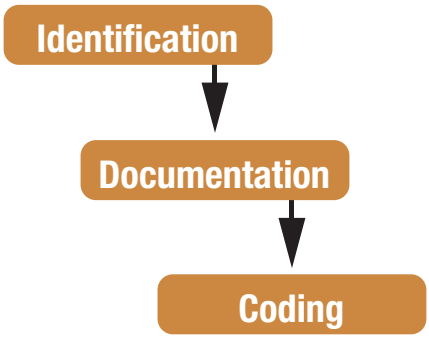
The Centers for Disease Control and Prevention state that "an **infection** occurs when germs enter a person's body and multiply, causing illness, organ and tissue damage, or disease. If that infection isn't stopped, it can cause a life-threatening condition called **sepsis**" (n.d.). As the coding community awaits the decision of the medical community regarding the adoption, or rejection, of sepsis criteria known as Sepsis-3, it is important to note the progression from Sepsis-1 to Sepsis-3, and to keep in mind:



Sepsis-1 focused on the establishment of systemic inflammatory response syndrome (SIRS). The clinical emphasis is placed on the identification and confirmation of a constellation of symptoms (syndrome) common to a system, as it responds to perceived inflammation. Therefore, a clinician need only identify two or more of the following four criteria to diagnose SIRS:

- Tachycardia (heart rate >90 beats/min),
- Tachypnea (respiratory rate >20 breaths/min),
- Fever or hypothermia (temperature >38 or <36 °C), and
- Leukocytosis, leukopenia, or bandemia (white blood cells >1,200/mm^3, <4,000/mm^3 or bandemia ≥10%).

Sepsis-1 was "developed at a 1991 consensus conference in which SIRS criteria were established. Four SIRS criteria were defined. Patients who met two or more of these criteria fulfilled the definition of SIRS, and Sepsis-1 was defined as infection or suspected infection leading to the onset of SIRS. Sepsis complicated by organ dysfunction was termed severe sepsis, which could progress to septic shock, defined as "sepsis-induced hypotension persisting despite adequate fluid resuscitation" (Marek, 2017).

Sepsis-2 is still the current standard and requires that the patient have a confirmed or suspected infection, in addition to the identification of a minimum of two criteria as was established in Sepsis 1.

Sepsis-2 from a 2001 task force "recognized the limitations with these definitions but did not offer alternatives due to a lack of supporting evidence. However, they did expand the list of diagnostic criteria, resulting in the introduction of Sepsis-2. Therefore, in order to be diagnosed with sepsis under the Sepsis-2 definition, as with Sepsis-1, an individual must have at least two SIRS criteria and a confirmed or suspected infection" (Marek, 2017).

Sepsis-3 is proposed by national societies, including the Society of Critical Care Medicine and the European Society of Intensive Care Medicine, and provides updated definitions and clinical criteria for sepsis. The new proposal defines sepsis as "life-threatening organ dysfunction caused by a dysregulated host response to infection…abandons the use of host SIRS criteria in identification of sepsis and eliminates the term severe sepsis" (Marek, 2017).

The clinical criteria for Sepsis-3 can be based on the use of the sequential organ failure assessment (SOFA) score, or the more simplified "quick SOFA" (qSOFA) score, in identifying the severity of organ dysfunction in a potentially septic patient. The qSOFA method assigns a single point to the presence of each of the following criteria:

- Respiratory rate greater than or equal to 22/min,
- Change in mental status, and
- Systolic blood pressure less than or equal to 100 mm Hg

As published in a 2016 *Journal of the American Medical Association* (JAMA) article, to meet sepsis criteria, a suspected or documented infection is present along with the increase of two or more of the SOFA points. Septic shock would present as:

- Documentation of sepsis,
- Vasopressor therapy needed to elevate mean arterial pressure greater than or equal to 65 mm Hg,
- Lactate measure would have to be greater than or equal to 2 ml/L (18 mg/dL) despite adequate fluid resuscitation

Unfortunately, Sepsis-3 has the potential to exclude the detection of early sepsis, and as such, may not be a good screening tool for sepsis due to its scoring methodology, (i.e. focus on organ dysfunction).

In the final case study reviewed, not only does the identification and documentation impact the code assignment, it also has the potential to impact the data that is pulled for further sepsis research. A 2014 JAMA network discussion, based on two complementary hospital cohort studies from Kaiser Permanente Northern California and the Healthcare Cost and Utilization Project Nationwide Inpatient Sample, articulated that "sepsis contributed to one in every two-three deaths, and most of these patients had sepsis at admission."

The authors of this study also noted that they "used two approaches to identify patients with sepsis from ICD-9-CM codes. The explicit approach identified those with codes 038 (septicemia), 995.91 (sepsis), 995.92 (severe sepsis), or 785.52 (septic shock). Because of the known under recognition of sepsis, we also used an implicit approach adding patients with evidence of both infection and acute organ failure using the Angus implementation of sepsis consensus criteria. Within KPNC data, we delineated diagnoses when coded as present on admission, an important consideration for improving identification and treatment efforts" (Liu, 2014).

COMPLETE AND ACCURATE PHYSICIAN DOCUMENTATION OF ANY DISEASE PROCESS THEREFORE REMAINS THE BASIS FOR PROPER CODE ASSIGNMENT BY CODING PROFESSIONALS

Conclusively, the above progression of Sepsis-1 to Sepsis-2, or even to the proposed Sepsis-3 with all its merits, has the potential to significantly affect how the physician identifies and documents sepsis, which in turn directly impacts the coding community's application of the current assignment of ICD codes. Complete and accurate physician documentation of any disease process therefore remains the basis for proper code assignment by coding professionals, or code suggestion by any natural language processing engine.

As most coding professionals were taught: "If the physician didn't document it, it didn't happen," and thus it remains uncodable.

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