The Wisconsin Star Method

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The Wisconsin Star Method, developed over several years with input from clinicians, medical educators, and patients alike, is a simple, concrete tool for addressing the problem of complexity in geriatrics. The high frequency of complicated patient and systems issues in clinical geriatrics has long called for the development of a user-friendly method, to get a better handle on difficult clinical situations more quickly and to provide comprehensive care with greater clinical integrity (1-2).

Consider the dilemmas faced by care providers, or by the grown children of aging parents. It is often quite a challenge to effectively help those who have multiple medical problems, for which they are taking multiple medications, and who are living under increasingly difficult, or even precarious, situations at home. What if those older adults are becoming anxious, discouraged, or irritable under the circumstances? And how best to be helpful when they also have idiosyncrasies, whether personal values or traits, or signs of cognitive impairment, any of which may interfere with their ability to access or engage with healthcare?

The Wisconsin Star Method is based upon principles of heuristics (3-5), cognitive science (4-7), information visualization (8) ecological interface design (9), team functioning (4), and network theory (10-11). It consists of a "low tech" graphic user interface—a small 5-pointed star drawn on a clear surface (paper or whiteboard). It enables clinical data about a person to be mapped out onto a single field with five domains: medications, medical, behavioral, personal, and social.

The available data for each arm of the Star are written as lists. (See Figure 1.) The medication arm includes an individual's medications (prescribed, over-the-counter, and "borrowed"). The medical and behavioral arms list known diagnoses, functional impairments, and/or symptoms. The personal arm highlights a person's individual traits, cultural values, and coping styles. The social arm covers interpersonal and environmental problems and assets, such as family support, finances, housing and transportation.

Each piece of data listed thus becomes an element in a network of potentially interacting variables, with the ties between them ranging from very weak to very strong.

Each arm of the Star represents a different ecological level on which problems are occurring. The primary identifiable clinical challenge (e.g. ability to safely live at home) is written in the center of the Star. In some cases the primary challenge may not be entirely clear at the onset, but gradually emerges as the situation is reviewed.

An important point to be emphasized: the Wisconsin Star Method does require its users to modulate their egos in the interest of better outcomes—the data has to be written down. The carrying capacity of the conscious human brain is on the order of 5 simultaneous interacting variables (5,9). One cannot effectively implement the Method with complex cases by keeping all the data "in your head."

Whether used by individuals or a team, the resulting two-dimensional map becomes an extension of the users' working memory (8) and thereby enhances their executive functioning for situation awareness and problem solving. Writing down the elements on an external graphic surface creates a small but significant distance (a "weaker tie") between the user(s) and the problems, thus providing both cognitive and affective perspective. The Method thereby facilitates the ability to attend to multiple different interacting variables at the same time and to identify which data are most relevant. One simply goes "around the Star," assessing and highlighting which of the elements listed in each arm might be significantly connected with, and thus contributing to, the challenge in the middle of the Star. One can also determine what potentially relevant data might be missing (e.g. is the person able to manage the process of obtaining refills?).

In this manner, utilizing the Star Method can help to ascertain which problems are multifactorial, and thus to avoid the common hazard in complicated situations of coming to premature closure (6,12). It can ease shifting sets when considering pairs of problems at different levels that may be linked in linear-causal relationships (e.g. excessive salt intake, hypertension, and an inability to afford medication). Likewise, the Method can help to identify the traits and values (13-16) and to appreciate the anxieties that may underlie puzzling behaviors (e.g. recurrent falls and worry about being seen in public as dependent on a walker). It can also be employed holistically to determine and highlight how multiple problems may be interconnected (e.g. gait instability due to Parkinson's, falls, loss of usual means for coping, depression, social isolation, and alcohol abuse). The resulting map (the "big picture" with the strong and weak ties highlighted) can be viewed as the person's unique ecosystem.

By integrating holistic and linear-causal perspectives into an ecological approach, the Star Method enhances the recognition of diagnostic patterns within domains, and the identification of vicious cycles between domains (e.g. falls + embarrassment about using a walker→decreased activity→physical deconditioning→falls). It also facilitates novel problem-solving: generating hypotheses, prioritizing and sequencing interventions, integrating clinical "pearls" (17) with evidence-based guidelines (18), and transforming vicious cycles into virtuous cycles (e.g. arranging for a friendly visitor—someone who also needs a walker—to visit and walk with the person regularly). It thus can help with cultivating collaborative relationships with older persons (e.g. instead of

blaming them for "refusing" to use a walker). It has the potential to not only enhance proficiency at providing comprehensive care, but to also reduce cognitive and emotional burden and errors (6,19). The Wisconsin Star Method can help individuals and teams to become more confident and mindful (20) in addressing the complicated interacting physical, emotional and social issues of older adults, with greater sensitivity and specificity to the uniqueness of each one.
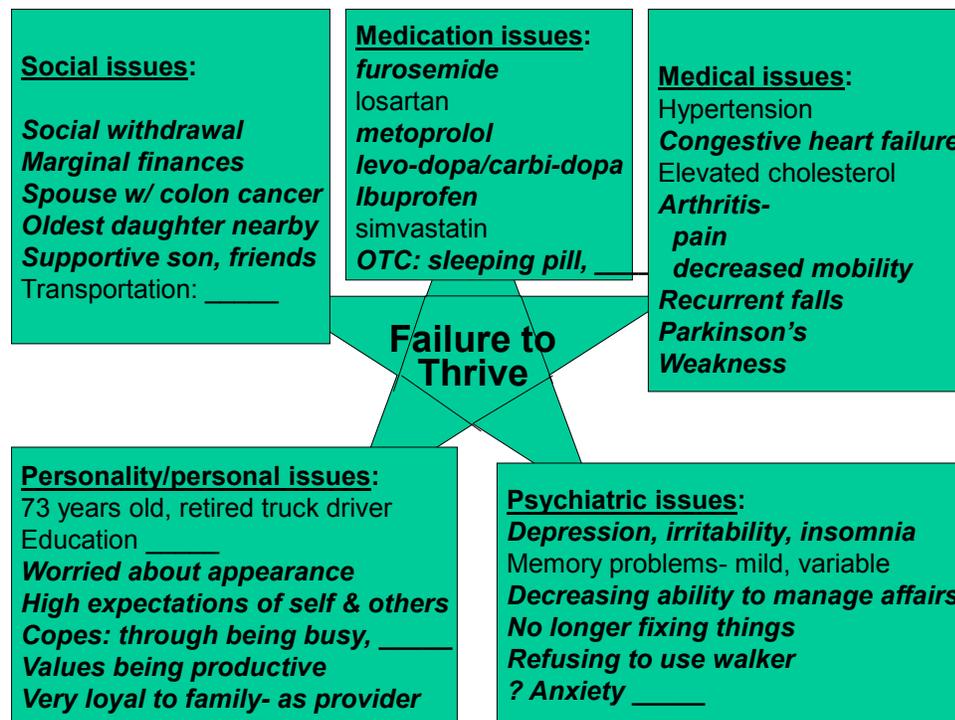
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Figure 1.

Social issues:

Social withdrawal
Marginal finances
Spouse w/ colon cancer
Oldest daughter nearby
Supportive son, friends
Transportation: _____

Medication issues:
furosemide
losartan
metoprolol
levo-dopa/carbi-dopa
Ibuprofen
simvastatin
OTC: sleeping pill, ___

Medical issues:
Hypertension
Congestive heart failure
Elevated cholesterol
Arthritis-
  pain
  decreased mobility
Recurrent falls
Parkinson's
Weakness

Failure to Thrive

Personality/personal issues:
73 years old, retired truck driver
Education _____
Worried about appearance
High expectations of self & others
Copes: through being busy, _____
Values being productive
Very loyal to family- as provider

Psychiatric issues:
Depression, irritability, insomnia
Memory problems- mild, variable
Decreasing ability to manage affairs
No longer fixing things
Refusing to use walker
? Anxiety _____

In the Star Map above, the elements involved in the central dilemma are italicized, and the blanks represent missing data.