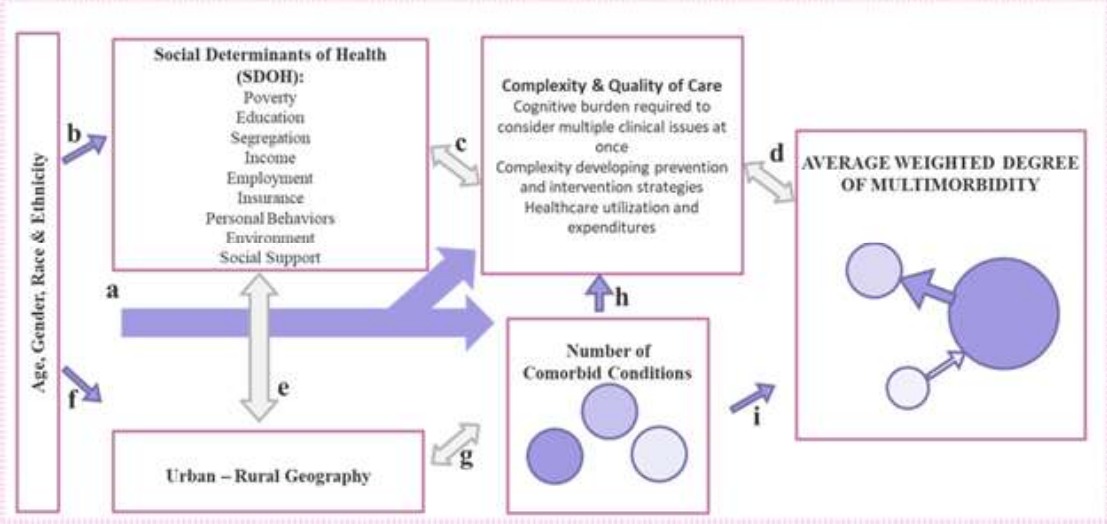

Figure 16. Multimorbidity Average Weighed Degree Conceptual Framework. Source: Farrow-Chestnut 2018.

In the proposed framework, the relationship between patient gender, race and ethnicity, SDOH, rural and urban geography, complexity and quality of care, and the patient's number of chronic conditions, increases multimorbidity average weighted degree. Disease combinations (and prevalence) differ by age and gender (a). Patient's age, gender, race and ethnicity interact with SDOH because members of minority communities tend to be more socioeconomically disadvantaged have lower levels of education, which increases the likelihood that the only jobs available have higher rates of occupational hazard; live in areas with greater environmental hazards than members of the majority population (b). In addition, difference in poverty, low SES, and lack of access to care, exists along gender, racial and ethnic lines (b, c). Residential concentration of African Americans is associated with inequities in communities, socioeconomic circumstances; and medical care (a, b, c, e, f). SDOH shapes complexity and quality of care because the amount of money, power, and resources that people have, influences access to health services and the quality of those services (c). SDOH interacts with the quality of care (c) and quality of care influences multimorbidity negatively and positively (d). There is a positive association of multimorbidity and use (costs) and use significantly increases with each additional

condition and the number of conditions adds a layer of complexity to developing prevention and intervention strategies (h).

Chronic disease burden is not distributed equally among rural and urban counties, making geography associated with disease burden an indicator for selected health determinants (e.g., socioeconomics, personal behaviors, and environments) (e) and the prevalence of chronic conditions (g). With an increase in number of conditions, there is an increased likelihood that one or more conditions occur more frequently (e.g., dyads and triads), which increases the complexity and generates quality of care challenges (h). These characteristics also increase the likelihood of conditions interacting with one another in ways that affect decisions, related to multimorbidity (i, d). Multiple, potentially interacting, including physical and mental conditions, determine multimorbidity patterns (i). Less is known about how frequently multiple conditions occur together; the impact of local area characteristics, such as limited availability or accessibility of health services, infrastructure deterioration, environmental stressors (Brown, Ang & Pebley, 2007), and how they may vary geographically (e, c, g, h).