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901.HEALTH SERVICES AND QUALITY IMPROVEMENT - NON-MALIGNANT CONDITIONS

Component-Specific Effects of Team Case Management on Adult Sickle Cell Utilization in Moderate to Low Utilizers

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Background: Utilization in adult sickle cell disease (SCD) patients is driven by a large array of biopsychosocial predictors which are often dominated by social determinants of health. We have previously demonstrated that disease management in an Adult Sickle Cell Medical Home may curb avoidable ED visits and hospitalizations, *particularly in high utilizers* (Blood).[i] However, further analysis is needed to determine the relative "doses" of components, and component-specific effects, of such team interventions as medical care for biological determinants; behavioral health counseling for behavioral determinants; case management for social determinants, and; administrative/reimbursement management for administrative determinants. And further analysis is needed to determine how the latter three, non-biological, components affected total utilization and subtypes of care utilization among *moderate to low utilizers* within the Medical Home. We examined the latter question for this analysis. The analysis was correlational and non-causal since interventions and outcomes occurred in the same time period.

Method:

We excluded data available during the "Pre-CoVID" years (2017-2019), in order to isolate impact apart from the COVID phenomenon. We also excluded the 50 Highest utilizers, defined as those with >\$200,000 in annual medical charges in a given year and high utilization of the hospital, because they were already assigned specific case managers. Thus, our sample, unlike high-utilization patients, was not assigned specific case managers. We counted and empirically weighted any contact with any member of the Medical Home during a particular year as an intervention. We stacked counts of interventions-multiple visits were weighed more heavily than a single visit. Interventions could have included behavioral health counseling by a licensed clinical social worker. The number of these visits was counted. Case management by Community Health Workers called Patient Navigators (PNs) could have included three types of visits: inpatient, outpatient, and telephone. PN visit weights were obtained by measuring the number of each type of visit, and the time of each visit. Last, prior authorization case management by a reimbursement specialist who was a licensed pharmacy tech each intervention was counted. Thus, the maximum intervention score for any patient in any year was not capped. We calculated charges due to all ambulatory, ED, and hospital utilization separately, and we also calculated combined charges for all utilization. Statistics include Spearman's Correlations, comparing the annual intervention score to charges for each utilization outcome, recognizing that charges would reflect charges for ambulatory medical and behavioral interventions.

Results:

The sample included N=466 distinct individuals in 2020, 499 in 2021, and 522 in 2022, the "CoVID Years." Correlations between the annual intervention scores and ambulatory, ED, hospital, and total utilization charges during each corresponding year are shown in Table 1. High PN contact (doses) correlated with more ambulatory visits. More PN contact (dose) was correlated with more inpatient discharges and either more ED visits, or insignificant reductions in ED visits.

Conclusion:

The case management components of an ambulatory case management program, where patients were not assigned case managers, were inconsistently associated with annual utilization costs for ambulatory care. Because these data were measured essentially simultaneously, we cannot draw causal inferences between management dose and utilization. Perhaps the most significant finding was determining a system of empiric weights for different types of interventions, and summary scores of all interventions may represent a new method to measure team interventions for case management in SCD.

[i] Intensive Case Management in an Adult Sickle Cell Medical Home: Annual Effects on Utilization Efficiency Using Community Health Workers; Shirley Johnson, BA, LSW1*, Daniel M Sop, BS, MS2, Yue May Zhang, MS3*, Benjamin Jaworowski, BS 1* and Wally R Smith, MD4

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| | Inpatient Discharges | Used_ED | Outpatient Appointments |
|---|----------------------|------------------|-------------------------|
| (LCSW)Social Worker | 0.03 (0.81) | 0.11 (0.33) | 0.35 (0.0009) |
| Pharmacist | -0.15 (0.17) | 0.11 (0.32) | -0.14 (0.21) |
| PN_Outpatient_Visits (Length of Time) | 0.19 (0.07) | 0.13 (0.22) | 0.08 (0.48) |
| PN_Outpatient_Visits (Number of Visits) | 0.32 (0.002) | 0.23 (0.03) | 0.19 (0.08) |
| PN_Inpatient_Visits (Length of Time) | 0.18 (0.09) | -0.05 (0.63) | 0.12 (0.27) |
| PN_Inpatient_Visits (Number of Visits) | 0.39 (0.0002) | -0.03 (0.80) | 0.29 (0.006) |
| PN_Telephone_Contacts (Length of Time) | 0.15 (0.16) | 0.38 (0.0003) | 0.37 (0.0004) |
| PN_Telephone_Contacts (Number of Contacts) | 0.15 (0.17) | 0.38 (0.0003) | 0.33 (0.002) |

Figure 1

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