Contribution ID: **68** Type: **Apresentação regular**

Optimization of home care visits: A study case on family support organizations

Family dynamics play a crucial role in the development of children and youth. When these dynamics are negative, they can put children at risk, potentially resulting in the loss of parental rights and subsequent institutionalization, an outcome that has been recognized as undesirable. Consequently, there has been a growing emphasis on early intervention, aiming to work with families to develop the skills needed to improve their relationships and prevent institutionalization.

Some organizations are responsible for providing this type of support. However, the growing number of families in need, combined with a fixed number of professionals, heavy bureaucratic workloads, limited availability of both families and workers, and manual scheduling due to a lack of resources, creates significant challenges. These factors complicate the assignment of workers to families, and scheduling and execution of visits, making it difficult to meet families'needs and comply with court-ordered deadlines.

To address these challenges, this work proposes a Mixed Integer Linear Programming (MILP) model to improve visit planning. By providing tactical plans that determine which professionals visit which families and when, the model aims to maximize completed visits, balance workloads, and promote a healthier work-life balance for staff. Ultimately, this approach enhances service delivery and better support of vulnerable families.

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Session Classification: Session 4.3 - Teams management and scheduling