Quantitative models embedded in decision-support tools for healthcare applications

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Abstract: We will discuss a few examples from healthcare, where quantitative models embedded in decision-support tools can improve the quality of decision-making (for patients, physicians, or caregivers) and patient outcomes. Examples will come from a variety of applications, including (i) organ transplant decisions for patients and physicians (considering the survival curve estimates of accepting an organ and undergoing transplant, versus remaining on the waiting list hoping to receive a better quality organ in the future), (ii) catch-up scheduling for vaccinations, (iii) prenatal screening for Down Syndrome, (iv) scheduling of patients to receive a combination of services.

Bio: *Pinar Keskinocak* is the William W. George Chair and Professor, and co-founder and co-director of the Center for Health and Humanitarian Systems at Georgia Tech. She also serves as the College of Engineering ADVANCE Professor, and interim Associate Dean for Faculty Development and Scholarship.

Dr. Keskinocak's research focuses on the applications of quantitative methods and analytics to have a positive impact in society, particularly in healthcare and humanitarian systems. Her recent work has addressed a broad range of topics such as infectious disease modeling, evaluating intervention strategies, and resource allocation; catch-up scheduling for vaccinations; decision-support for organ transplant; hospital operations management; and disaster preparedness and response. She has worked on projects with a variety of governmental and non-governmental organizations, and healthcare providers, including American Red Cross, CARE, Carter Center, CDC, Children's Healthcare of Atlanta, Emory Healthcare, Grady Hospital, and Task Force for Global Health.

In addition to research and educational activities, as a leader in academia she also spends a significant amount of her time and efforts on promoting diversity and inclusion among faculty, students, and staff in higher education.

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