# Advancements of AI in Healthcare

## Intelligent Adherence and Variation Support for Customer Life Cycle Management in Healthcare

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## Summary

Maintaining contractual relationships and delivering services are key issues in Customer Life Cycle Management (CLCM). Current computer systems assist service providers in managing basic care for customers. This basic care often involves little more than maintaining customer information in a database.

AI technologies can play a valuable role in building advanced systems that monitor, interpret and react to key events during the management of a customer's life cycle. We have built a system that is an example of such an AI technology -- we refer to it as Intelligent Collaborative Care Management (ICCM). ICCM guides a team of providers and customers through critical stages in a customer's life cycle.

This system has been applied to the collaborative care of patients with chronic disease. Managing patient care is difficult, because health care providers and patients must collaboratively achieve goals in a customised care plan. Achieving these goals is strongly correlated with better health outcomes of patients. Regrettably, these outcomes are seldom attained because of uncertainty, incompleteness and bounded resources in this domain (e.g., change of health conditions, change of objectives of providers, unreliable patients and change of governance policies).

ICCM specifies intelligent agents that assist health care providers and patients in
  (a) adhering to a care plan and
  (b) varying the care plan itself, if required.
This adherence and variation support component in ICCM defines a monitoring-recognition-intervention cycle: monitoring provider and customer behaviour, recognising off-track behaviour, and intervening to (a) move processes back on-track or (b) make changes to the care plan itself.

This presentation is concluded by outlining challenging future directions in this line of research.