THE AI ADVANTAGE ELEVATING DIALYSIS CARE AND OUTCOMES

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DELOREAN AI

CONSTELLATION KIDNEY GROUP

ATLANTIC DIALYSIS MANAGEMENT SERVICES

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Abstract

DeLorean Artificial Intelligence (DAI), in partnership with Constellation Kidney Group (CKG), implemented DeLorean AI's Renal AI tool at CKG's client, Atlantic Dialysis Management Systems (ADMS) in February 2025. The Renal AI decision support tool launched across all 13 of ADMS' dialysis clinics, and results for this study were measured through May 2025. The scope of this pilot was to determine the effectiveness of Renal AI to reduce hospitalizations and no-shows leading to missed dialysis treatments.

The two overarching outcomes measured were hospitalizations and missed treatments (medical adherence). To analyze reduction of hospitalizations we examined: General Hospitalizations, Care Measures Provided Informed by Insights, and Hospital Avoidance. To analyze missed treatments, we investigated treatment adherence.

- ·An overall decrease in hospitalizations from February-April 2025 was observed. A slight increase was observed in general hospitalizations between April and May of 2025, attributed to seasonal trends. Overall, ADMS experienced an average reduction of 0.34% month-over-month, in hospitalizations. Comparing February to April, there was a decrease of 18%*.
- ·Care Measures Provided, or measures that could prevent hospitalization, which are informed by Renal AI, increased by an average of 70%* during this period. ADMS provided an average of ~6 additional care measures per month in 2025, when compared to the prior year. Care measures increased 32%* from February to May with respect to hospitalization predictions. A total of 663 care measures were provided, translating to an additional $181,542 of revenue when compared to the same period last year when ADMS was operating without Renal AI's insights.
- ·Ninety-eight (98) total hospitalizations, for an average overall increase of 48%*, were able to be avoided due to clinical engagement with and acceptance of Renal AI's suggested actions with ~$26,800 of direct operational revenue realized, due to patients maintaining their appointments in their outpatient clinic. The systemic burden on the healthcare system was reduced by avoiding ~$1.9M in hospitalization costs.
- ·ADMS saw an average increase of 80 appointments kept, representing a decrease of 13.5%*, from 2024 to 2025. Improvement of treatment adherence allowed for ~$21,905 in revenue maintenance, or prevention of revenue loss.
- ·ADMS' first clinic to pioneer the AI solution, Prospect Park, was able to see a 52%* decrease in patients with the highest level of risk, going from ~20% in January to ~9% in June. The lowest risk population rose an average of 20%*.

*Value is a percent difference
CMS Reimbursement Rate assumes $273.824
Hospitalization cost assumes $21,7395

Introduction

The dialysis industry is facing numerous challenges such as shifting regulatory priorities, i.e., the early termination of the ESRD ETC model, value-based initiatives, upstream investments to improve and extend chronic kidney disease (CKD) care, and emerging pharmaceutical and transplant technologies. Combined, these issues represent a significant challenge for dialysis providers and threaten to radically transform the landscape in the coming years. To survive in the coming environment, dialysis providers and nephrologists need to become more effective through providing proactive and predictive care.

Independent dialysis companies feel these hardships more keenly including scaling economically, commanding competitive pricing, achieving name recognition, and growing their census. With the right technology and platform in place, these issues become opportunities.

This white paper highlights the significant impacts of deploying DeLorean AI's (DAI) innovative technology, Renal AI for end-stage renal disease (ESRD), on Constellation Kidney Group's (CKG) scalable platform for dialysis specific solutions. Renal AI was implemented at CKG's customer, Atlantic Dialysis Management Services (ADMS), in thirteen (13) clinics, with an average of 115 patients per clinic, as part of a 3-month pilot to assess the effectiveness of two predictions, hospitalizations and missed treatments/no shows, to improve patient health and optimize financial impact. With the success of the pilot, Renal AI has been fully implemented and remains in use as ADMS saw a 2x return over the pilot period and are on track to realize more than $1M of new value created within the first 12 months.

Problem Statement

Dialysis is a critical component to treating and managing end-stage renal disease (ESRD), playing a significant part in prolonging patient life, as well as improving quality of life, and serving as a bridge for transplantation. However, the U.S. dialysis landscape is fundamentally changing, requiring the need for dialysis companies to adapt.

Significant efforts are being made and continue to be made to increase the effectiveness of CKD treatments and extend the time before patients require dialysis. As care shifts upstream to chronic kidney disease and advancements are made in preventing kidney function from deteriorating[1], fewer patients require dialysis. Historically, dialysis management has been reactive despite efforts to optimize dialysis starts. Now there is a mandate, the Advancing American Kidney Health (AAKH) directive[2] which requires a certain percent of patients start out as or move to home dialysis and has highlighted the need to reduce the total cost of care of a dialysis patients putting some practices at risk for these costs. Regardless of the mandate dialysis organizations are still responsible for determining ideal candidates, providing training and continuing education, as well as the administration and oversight of 'at-home' patients.

These changes to the dialysis landscape are coming at a time when the prevailing struggles such as issues of bundle payment rates not keeping pace with the market, moving to value-based care, and paying premium wages with high staff turnover not only persist but are exacerbated by global issues such as the Covid-19 pandemic and its lingering effects[3]. All this combined, dialysis companies must find new ways to offer vital services while maintaining standards of care and remaining financially viable.

Retention and expansion of a company's census, or number of patient's served, is crucial to the continuance of their business. Paramount to the importance of business growth is redefining the opportunities present within operations to generate additional revenue, adapt to market fluctuations, and still provide quality care to patients in need.

Applying technological solutions, particularly artificial intelligence, provides a unique opportunity to blend the understanding of patient health and business operations in a way that has gone unrealized. Providers and clinicians have a high degree of familiarity with their patients due to the extensive time providing care. Introducing comprehensive AI solutions, such as Renal AI deployed on Time/Clinical Vision, allows users to obtain unique insights into their patients, either reaffirming what clinicians already know and suspect, or uncovering unanticipated events that could impact a patient's health and ultimately, the company's financial health. Anticipating drastic changes in health and reducing overall patient risk helps adapt in the face of an ever-changing landscape.

It was these pressures that led Atlantic Dialysis Management Services to research AI opportunities to facilitate operations, keep pace with healthcare trends, and differentiate themselves within the market, with the express goal of reducing hospitalizations and hospital readmissions.

Solution

Renal AI is an artificial intelligence decision-support tool designed to limit operational burden, uncover unanticipated risk both in the present day and in future upcoming weeks, and provide insights into health changes. Renal AI allows clinicians to view both the patient's health journey, with graphic representations of retrospective data from months prior, and offer users the ability to understand the various risk, or existing potential for changes in health, present in the patient population. The solution then suggests action for intervention and prevention aimed at decreasing risk. Among the predictions are:

1. **Risk Stratification**: a population level prediction that offers a view of the overall performance of a defined group such as a clinic, region, or enterprise. Risk stratification provides the ability to review the overall risk in the population by categorizing risk as Stable, Transitioning, Neutral, or Declining (see Appendix A for definitions)
    a. The high-level view allows users to quickly understand which clinics require attention.
    b. Each of these risk categories give insights into where each patient falls on the risk spectrum to prioritize care.
2. **Cumulative Ranking**: a measure that combines the most relevant high-risk predictions to offer a hyper-tuned priority ranking of patients that allows users to expediently identify those patients with the most risk and triage them based on the salient predictions.
3. **Future Predictions & Suggested Actions**: a prediction that affects the patient's health and has an associated suggested action for intervention. These include informative and actionable measures such as:
    a. Hospitalizations due to fluid overload
    b. No Shows / Medical Adherence (missed treatments not associated with hospitalizations or rescheduled appointments)
    c. Adequacy (KT/V)
    d. Estimated Dry Weight (EDW)
    e. Iron supplement (IS) - Venofer®

The results of the predictions must be expressed in a way that is easy-to-use and reduce operational burden. To achieve this, distinct views are created to guide the user through a patient's risk journey starting with a general, directional prediction to specific, actionable suggestions to prevent deteriorating health.

View 1 – Executive Overview

Executive Overviews are population level views that break down population level risk. Users quickly understand the stratification of the patients at the enterprise and the facility level, down to the individual patient level. This is the first step in identifying where a patient falls on the risk spectrum.

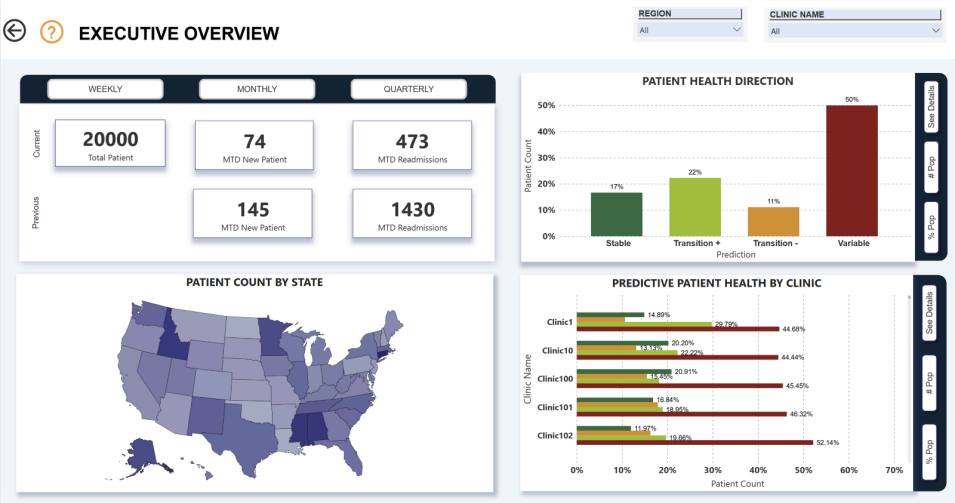

Figure 1. Predicted risk stratification of a patient population segmented by total population and by clinic. Data is synthetic.

View 2 – The Triage Report

The Triage Report is a 'one-stop-shop' of all risk that operations can use to prepare for patients at the present. From the cumulative ranking to individual predictions, prioritizing which patients to focus on is more efficiently achieved.

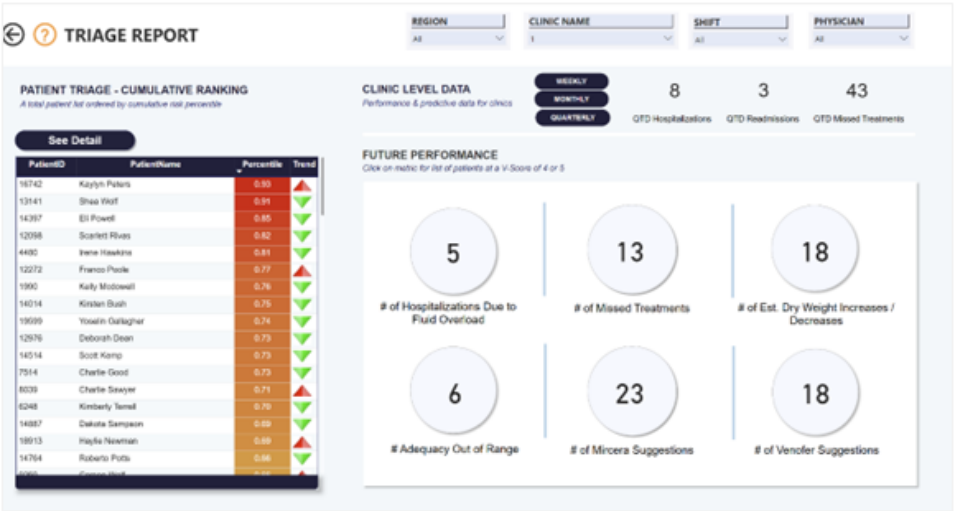

Figure 2. Triage Report categorizing all patient risks predicted including Cumulative Ranking and Predictions with accompanying suggested actions. Data is synthetic.

View 3 – Patient Overview

The most granular level is the Patient Overview which contains hyper-personalized suggested actions for the individual predictions being monitored. Accompanying the personalized predictions are analytics that provide an understanding of the historical performance of the patient to allow users to determine whether to accept a suggested action.

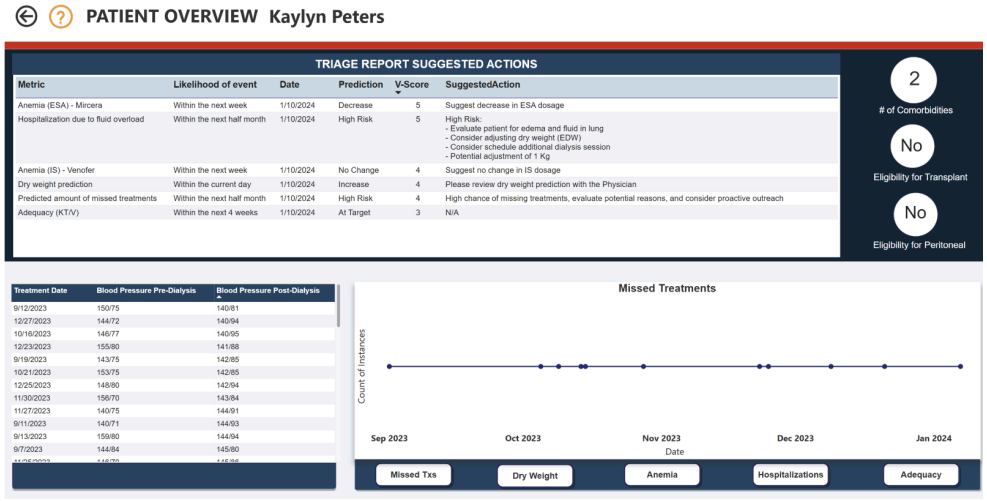

Figure 3. Patient Overview detailing all predictions for a patient including relevant analytics providing a longitudinal view of patient history. Data is synthetic.

Renal AI is created for use by management, nephrologists, clinic managers, and nurses. Though the AI solution offers the ability to triage patients the day of their appointments, insights can also be used during care planning or even to help inform management of the Consumer Assessment of Healthcare Providers & Systems (CAPHS). As a decision support tool, Renal AI brings the available data together in an easily accessible, easily digestible format for licensed professionals to make the best decisions possible, allowing them to practice at the top of their license.

With engaged leadership and identified power users, ADMS clinics was able to quickly understand the goals and underlying premises of Renal AI, train users effectively, and adopt the technology throughout its clinics. ADMS successfully operationalized Renal AI within one month quickly realizing results with reduced hospitalizations and increased treatment adherence.

Outcomes

ADMS realized several significant results using the comprehensive solution AI solution.

Hospitalizations

The prediction for hospitalization is specifically for hospitalization due to fluid overload. Due to data entry requirements, the consistency and quality with which clinics receive hospitalization data, and how data updates can occur over a month after entry, measuring success with hospitalizations occurs at the general hospitalization level. As such, a series of metrics are used to understand the results achieved from the prediction including General Hospitalization, Care Measures Provided (Informed by Suggested Actions), and Hospital Avoidance.

1. **General hospitalization**: Preventing hospitalizations due to fluid overload will have a direct effect on the total population of hospitalized patients yielding a decreasing trend.
2. **Care Measures Provided** (Informed by Suggested Actions): To prevent hospitalization due to fluid overload, several interventions can be taken such as increasing the time of a current session or prescribing an extra treatment. A decrease in hospitalizations, specifically due to fluid overload, would result from an increase in activities used to prevent this very type of hospitalization.
3. **Hospital Avoidance**: By providing a suggested action, patients will 'avoid' going to hospital as a result of receiving an intervention measure. This is a direct result of a suggested action being followed.

ADMS clinics realized overall positive results for each of the metrics described, including a reduction in hospitalizations and an increase in treatment adherence.

*Value is a percent difference
CMS Reimbursement Rate assumes $273.824
Hospitalization cost assumes $21,7395

General Hospitalizations

Expectation: As hospitalizations due to fluid overload decrease, hospitalization in general should decrease.

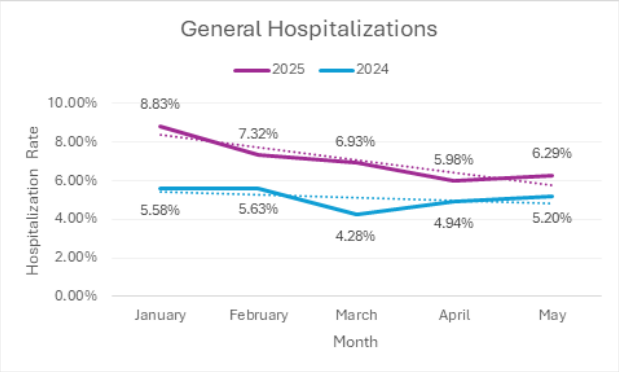

Figure 4. General Hospitalization Graph by Total Count

Result: Since February, hospitalizations decreased an average of 0.34% month over month. Comparing February to April, there was a decrease of 18%*.

Care Measure Provided

(Informed by Suggested Actions)

Result: Care measures that could prevent hospitalizations due to fluid overload, now informed by suggested actions or insights, increased an average of 70%* providing ~6 additional care measures per month compared to the same time period in 2024 without Renal AI's predictions.

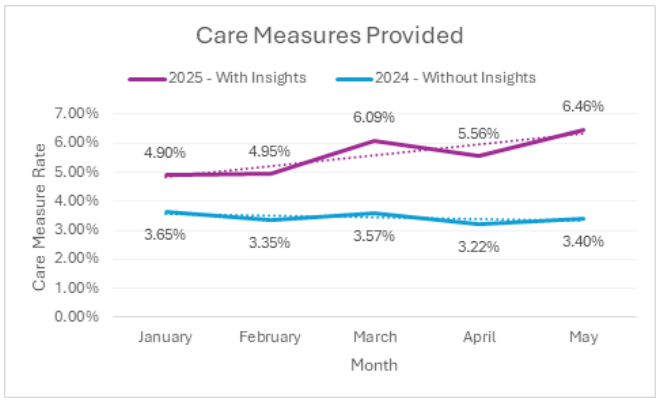

Figure 5. Extra Treatments Graph by Total Count

Financial Impact: Care measures steadily increased 32%* from February to May in response to hospitalization predictions. A total of 663 care measures were provided with assistance from prediction insights, translating into ~$181,542 of additional annual revenue.

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Hospital Avoidance

Result: Hospital avoidance is attributed to the clinician evaluating, accepting, and acting on a suggested action. Ninety-eight (98) total hospitalizations were prevented from February to May for an average overall increase of 48%*.

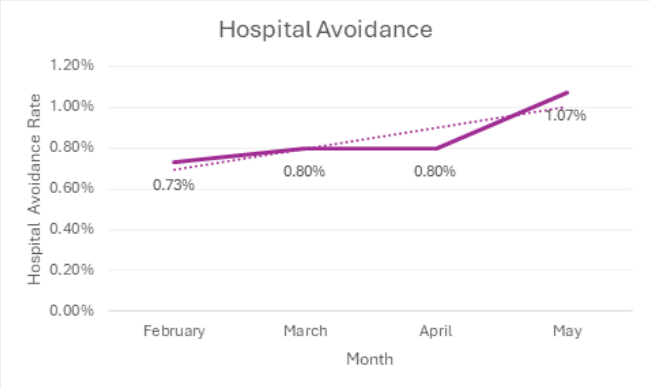

Figure 6. Hospital Avoidance Graph by Total Count

Financial Impact: The increase in hospitalization preventions directly impacts patient health with operational revenue increasing from maintaining scheduled appointments at ~$27K. Annualized, this should yield ~$80K in planned revenue. Additionally, it alleviates a broader cost to the patient and the healthcare system that is heavily subsidized by the Center for Medicare & Medicaid Services (CMS) by avoiding ~$1.9M in hospitalization costs with an annualized avoidance totaling ~$5.7M.

Treatment Adherence

Renal AI's treatment adherence prediction offers insight into when a patient is likely to miss a treatment, directly impacting the health of the patient. Improving treatment adherence directly impacts the health of the patient as well as ensures reimbursement.

Result: Since February 2025, ADMS saw an average increase of 80 appointments kept as compared to 2024, representing a decrease of 13.5%*.

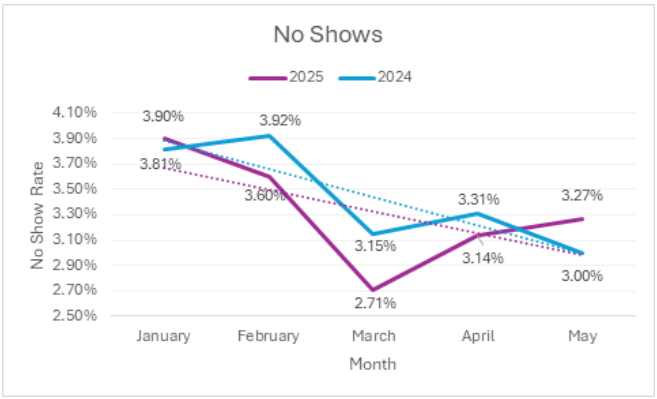

Figure 7. Patient No Shows Graph by Total Count

Financial Impact: Improving treatment adherence has precipitated ~$22K in revenue maintenance, or prevention of revenue loss, as patients keep their appointments, indirectly impacting hospitalization rates and patient health.

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Hospitalization cost assumes $21,7395

A Case Study: Reducing Overall Risk

AMDS clinic Prospect Park was the first site to begin using the AI solution which is championed by their designated super-user. A primary goal of the AI solution is to reduce overall risk, or the likelihood that a patient's health will worsen via an event or other means. Through aggressive management, oversight, and use of the tool, Prospect Park was able to see a 52%* decrease in patients with the highest level of risk (Red/Declining) going from ~20% in January to ~9% in June. Additionally, the lower risk populations have increased with the lowest risk population (Green/Stable) rising around an average of 20%*.

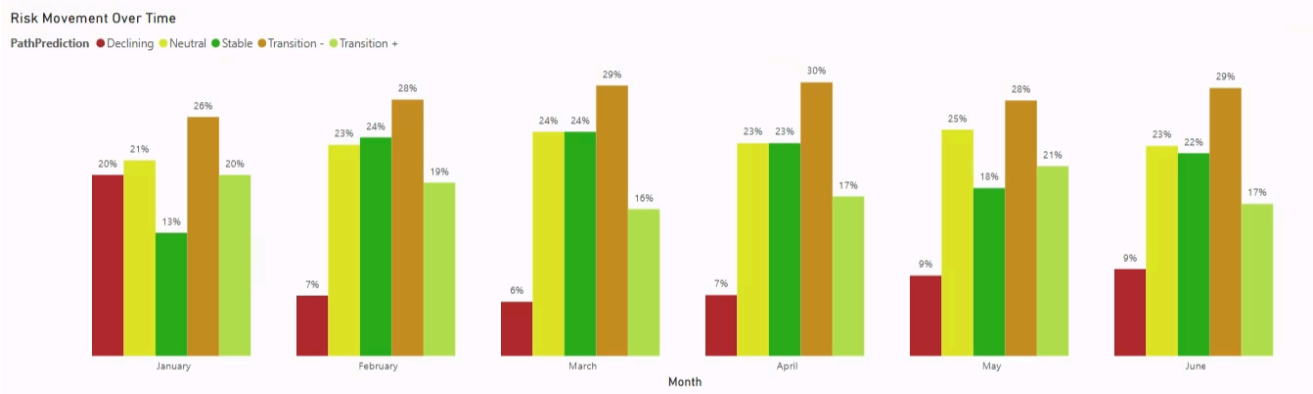

Figure 8. Prospect Park patient risk movement over time for Stable, Transition (+), Neutral, Transition (-), and Declining populations. See Appendix A for definitions.

A reduction in patient risk has direct benefits realized through tangible benefits such as reduced hospitalizations and no-shows. However, it also has intangible benefits through the prevention of events that could have 'come to pass' yet did not.

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Conclusion

Overall, ADMS achieved a reduction in their patient population risk through reductions in hospitalizations and increases in treatment adherence. ADMS' target estimated savings for the four (4) months (3 months of pilot & 1 month of additional use) was ~$125K. After four (4) months, ADMS achieved ~$227K in savings, nearly doubling what was expected. Based on the standard performance of Renal AI, the successes realized in this short time will continue to grow leading to combined annualized savings of ~$1M through cost avoidance, maintained revenue, and increased revenue based on only hospitalization and no-show predictions. As ADMS continues to increase use of Renal AI, gains should continue to grow.

Tackling the hardships dialysis centers face requires a targeted approach to maintain operations more effectively as well as expand them. Through this collaboration, DeLorean AI's solution deployed via CKG's Electronic Health Record systems and implemented at ADMS facilitated their ability to achieve their key goal of reducing hospitalizations. Additionally, by implementing innovative tools, operational pressures such as staffing, increasing costs, etc. can be alleviated as technology fills in the gaps providing support where it's needed. Care can be elevated as management of the incumbent dialysis patient census can be more effective by reducing risk, keeping patients healthy longer, and driving better outcomes. This is the competitive advantage needed to realize value, not just for patients and dialysis clinics, but by the entire healthcare ecosystem.

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Appendix A

Definitions of Risk Groups

The following table contains definitions for the identified patient risk groups.

Stable	Lowest risk / high performing group
Transition (+)	Second lowest risk group with a high likelihood of moving into stable
Neutral	A high or low risk is not exhibited
Transition (-)	Second highest risk group
Declining	Highest risk group usually requiring intervention