

Q1 Please provide your contact information below.

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Q2 Please describe your company or organizations overall goals and mission.

Algorex Health is pleased to present our response to this innovation opportunity.

Algorex Health is a data science- and advanced analytics- as-a-service company. The company enables value-based care organizations to make the most from data and health IT through a combination of open technology, pre-licensed data sets, and purpose-built algorithms. We enable organizations to act like big-technology consumer marketing across all elements of their business.

Algorex Health believes that life affects your members' lives - we measure health through members' interactions with everyday life, and we've done the work to understand how those interactions relate to health outcomes at scale. We provide plans and health systems with targeted predictive analytics and risk factors driven by social determinants of health data. We then tailor our models to the last-mile specifics of your populations to prevent adverse events and engage these socially vulnerable individuals. As a firm, we are particularly focused on supporting Medicaid populations and associated communities.

Q3 Please indicate which category your organization falls under. **Technology Solutions**

Q4 Innovation Executive Summary. Please describe the innovation, and how it addresses the social determinants of health. Please identify how the innovation addresses the 6 innovation criteria (i.e. ROI, scalability, feasibility, evidence based support for innovation, relevance to the Medicaid population and speed to market).

*Summary: The unique combination of collaborative consulting, data science expertise, and experience working with Medicaid healthcare organizations (both plans and ACOs) makes Algorex Health a strong candidate in support of the evaluation criteria.

The Algorex Health innovation -- founded in the belief that health care organizations need to know about the non-clinical 80% of patient's lives driving overall health as soon as possible (often before a clinical encounter occurs) -- identifies over thirty member-level SDH stress factors without relying on claims or clinical data. The combination of purpose-built algorithms and SDH stress factors enables Algorex Health to deliver highly-qualified, highly-targeted lists for non-clinical operational interventions at scale.

These chase lists integrate directly into an EHR via FHIR transactions; into stand-alone care management applications; or are delivered via flat-file for client consumption and action in outreach campaigns.

A set of use cases, including Medicaid-based efforts for housing stability and coverage maximization are available at:
www.algorexhealth.com/NYS DH

*Scalability and Speed to Market: With a technology infrastructure resembling that of the most advanced consumer marketing firms, our systems process algorithmic models on over 2 million members in 12 hours. This includes data acquisition, normalization, data integration / appending, model execution, and results delivery via service-oriented architecture principles.

*Feasibility: Algorex Health's technology and processes are designed to eliminate many of the barriers typically faced by healthcare organizations seeking to implement analytics and data solutions. The infrastructure described above enables clients to deploy Algorex Health models with as little as a raw membership roster file containing a list of members and basic demographic information.

*ROI: In support of the DOH request for information – two primary use cases that deploy our external data and data science capabilities are listed here.

--Use Case Example 1. Housing Instability Identification: By identifying patients with the highest risk of housing instability, health care organizations are able to accomplish goals such as: re-balancing members' PCP attribution; targeting rent stabilization investments; and using location-based mapping to align the right pharmacy to the right members. These examples increase member engagement, medication adherence, and effective management of vulnerable populations with low housing security. By documenting housing instability, our clients, including providers, plans, and state agencies, have reduced total medical expense and received an incremental medical capitation increase of \$600 PMPY relative to other members (see source 1 below).

--Use Case Example 2. Medicaid Member Coverage Gaps: The goal of this use case is to reduce member churn, defined as the disenrollment and re-enrollment into a Medicaid plan, often with a short gap in coverage. Over 7% of Medicaid members will have a gap in coverage due to non-response or changes in address not reflected within DOH systems. Our solution forecasts member churn risk and earns time to update state systems prior to a termination event. In doing so, members maintain their coverage, practice attribution, and plan of care stability. Avoidable churn results in negative outcomes for patients, with nearly half reporting a decline in health following a coverage gap (see source 6 below).

*Relevance to Medicaid: Our solutions are both supported by academic research and deployed with Medicaid populations. With a suite of over 30 models deployed today, over 20 are directly in support of Medicaid members overall health – including access, plan coverage, social / environment challenges, and medical management. Algorex Health's innovations are actively deployed with Medicaid managed care plans and Medicaid ACOs in multiple states.

*Evidence-based support for innovation: Here is a sampling of academic background studies that support and / or influence Algorex Health's innovations:

--Source 1: 13.5% of Medicaid members have greater than 3 addresses in the past 12 months leading to medical costs increases of \$600 PMPY. Ash AS, Mick E. UMass risk adjustment project for MassHealth payment and care delivery reform: Describing the 2017 payment model. UMASS Medical School Center for Health Policy and Research.<http://www.mass.gov/eohhs/docs/eohhs/healthcare-reform/masshealth-innovations/1610-umass-modeling-sdh-summary-report.pdf>. Published Oct 11, 2016. Accessed Jan 17, 2017.

--Source 2: 17% of Medicaid members have short-duration gaps in care (90 days or less) during a respective calendar year. Source: "Enrollment and Disenrollment in MassHealth and Commonwealth Care," MMPI, April 2010, p. 3.

--Source 3: 6% of elderly members have objective loneliness driving cost increases of \$134 per member per month. Journal of Aging and Health. "Social Isolation and Medicare Spending: Among Older Adults, Objective Isolation Increases Expenditures While Loneliness Does Not." Jonathan G. Shaw, MD, MS, Monica Farid, BA, Claire Noel-Miller, MPA, PhD, Neesha Joseph, MPP, Ari Houser, MA,

Steven M. Asch, MD, MPH, Jay Bhattacharya, MD, PhD, Lynda Flowers, JD, MSN, RN. September 17 (13), 2017.

--Source 4: Members who experienced a “negative wealth shock” experienced dramatic and rapid deterioration of care, resulting in 10% increase in end of life medical care costs. JAMA. “Association of a Negative Wealth Shock With All-Cause Mortality in Middle-aged and Older Adults in the United States.” Lindsay R. Pool; Sarah A. Burgard; Belinda L. Needham, PhD, April 3 (319:13), 2018.

--Source 5: Over 35% of HIV-positive members missed a follow-up appointment due to transportation challenges. AIDS Care. “Rural HIV-infected women’s access to medical care: ongoing needs in California.” Sarnquist CC. Soni Hwang. July 23 (7), 2011.

--Source 6: Nearly half (47%) of members with a coverage gap report a decline in their overall health. B. D. Sommers, R. Goarevitch, B. Maylone et al., “Insurance Churning Rates for Low-Income Adults Under Health Reform: Lower Than Expected But Still Harmful for Many,” Health Affairs, Oct. 2016 35(10):1816–24.

*Example Results: Two project summaries describing Algorex Health’s innovation results are described here:

--Example 1:

Customer Type: Statewide, multi-product (Medicaid and Medicare) Accountable Care Organization.

Overview: A 450,000 member Medicaid population, with over 55% pediatric members, was unable to gain a reliable pediatric risk score through clinical claims. Algorex Health tuned and deployed a house-hold based pediatric risk model to support population health interventions.

Detail: An Algorex Health data science team was able to deliver the following results:

- (i) Identified over 180,000 members into 75,000 households through a machine learning process.
- (ii) Evaluated key findings from householding analysis – including the identification of members with:
 - (ii-a) Significant housing instability which inhibited ability to attend well child visits.
 - (ii-b) Addresses that indicated state custody through DCF assignment
- (iii) Deployed a set of interventions to use state-wide scope to monitor and manage the transience of families at the most risk.

--Example 2:

Customer Type: Multi-state, multi-product (Medicaid and Medicare) Accountable Care Organization.

Overview: A large multi-state health system with a significant presence in Massachusetts sought to understand their at-risk membership in greater detail. This project demonstrates Algorex Health’s ability to integrate external social determinants to support existing medical management functions such as care management.

Detail: Algorex Health appended the ACO’s membership roster with external social determinants of health data and completed the following functions:

- (i) Developed a risk stratification model that included housing instability, food security, and neighborhood stress models.
- (ii) Integrated Algorex Health analytics outputs into the ACO technical environment allowing seamless work for existing care management teams.
- (iii) Evaluated location-based food interventions for member localities that had high propensities (hot spots) of members who would benefit from support.
- (iv) Provided updated contact information for over 25% of members based on external sources.
- (v) Algorex Health continues to support the client with model outputs in 2018.

Q5 Was your innovation implemented? If so, please explain when, the number of people impacted, and the results.

Yes (please specify when and the estimated number of people impacted):

Yes, the innovation has been implemented and is in active use. In the 20 months since inception, Algorex Health has deployed its solution with 9 clients and provided model outputs for over 2m members. Two project summaries are included in the submission. These results are included at the end of our response to the previous question in the section titled “*Example Results.” (we put the examples in the previous question for text formatting purposes).

Q6 Please identify the SDH Domain that your innovation addresses. (Select all that apply.)

Social and Community Context ,
Health and Health Care ,
Neighborhood and Environment

Q7 I give the Department of Health the right to share the information submitted in this application publicly (for example: on the DOH website). I understand that there is no monetary reward/reimbursement for my submission or for attending the summit should my innovation be selected.

I consent to have my innovation shared

