Personalized Iron Deficiency Care Technology

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Problem Statement and Background

Problem Statement: Iron Deficiency (ID) and Iron Deficiency Anemia (IDA) present challenges in healthcare, patients face delays and impersonal care while providers struggle with diagnostic complexities.

Background:
The project is a partnership between Synthera Health and UMass Memorial Health, aiming to improve patient care.
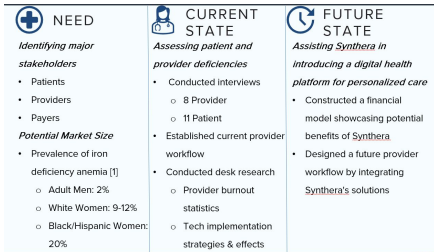
Synthera Health, specializing in digital health, focuses on personalized care plans for nutritionally related conditions

UMass Memorial Health , a prominent healthcare provider, offers comprehensive services including emergency, intensive, and specialized care.

The collaboration intends to **integrate Synthera health's technology into UMass's clinical workflows**

Project Approach

Our project aims to help Synthera deliver personalized care, enhance provider workflow efficiency, and potentially save costs within the UMass healthcare ecosystem.

NEED
Identifying major stakeholders
- Patients
- Providers
- Payers

Potential Market Size
- Prevalence of iron deficiency anemia [1]
  - Adult Men: 2%
  - White Women: 9-12%
  - Black/Hispanic Women: 20%

CURRENT STATE
Assessing patient and provider deficiencies
- Conducted interviews
  - 8 Provider
  - 11 Patient
- Established current provider workflow
- Conducted desk research
  - Provider burnout statistics
  - Tech implementation strategies & effects

FUTURE STATE
Assisting Synthera in introducing a digital health platform for personalized care
- Constructed a financial model showcasing potential benefits of Synthera
- Designed a future provider workflow by integrating Synthera's solutions

[1] Killip, Bennet, & Chambers, 2007

Traditional Workflow/Current Design

Pain Points

Provider View:

Systemic & Operational Barriers: IDA management is complicated by insurance complexities, provider time constraints, and reimbursement challenges for indirect care.

Resource & Education Gaps: Challenges include the need for better health management, limited patient education resources, and difficulty in staying updated with nutrition knowledge.
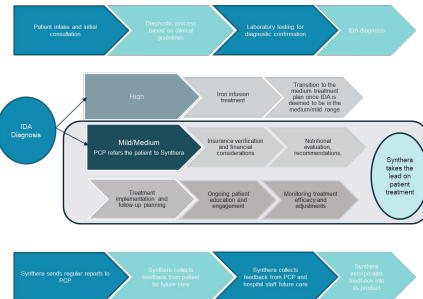
Patient View:
Diagnosis: IDA diagnosis, often based on yearly checkups and family history, faces challenges due to inconvenient lab testing and the risk of rushed visits leading to missed diagnoses.

Treatment: Challenges in IDA treatment include non-personalized care, over-reliance on supplements, and gastrointestinal issues caused by iron supplements.

Nutrition: IDA management often emphasizes specific food choices over comprehensive meal planning and involves excessive dietary restrictions.

Resource & Education Gaps: IDA advice is often generic, limited to brochures or websites, with limited offline communication with providers.

Proposed Future Workflow

Testimonials

"Synthera Health is solving a huge problem for patients- finding the right OTC therapy is time-consuming and filled with needless trial and error. Their approach helps you find what you need quickly. " — JOE D., Father of a child with anemia

Business Case

Cost Savings from Reduced Physician Burnout

C(Burnout)=Average cost of physician burnout per doctor

N(Doctors)=Number of physicians at UMass

R(Reduction)=Reduction in burnout rates

Savings(Burnout) =N(Doctors)×C(Burnout)×R(Reduction)

Improved Quality Measures and Patient Outcomes

C(Quality)= Total cost related to medical errors and patient dissatisfaction

R(Improvement)=Improvement rate in quality measures

Savings(Quality)=C(Quality)×R(Improvement)

Improved Revenue from Increased Client Volume

R(Revenue)=Increase in patient volume revenue rate

R(Annual)=Annual revenue of UMass

Increase(Revenue)=R(Annual)×R(Revenue)

Savings from Reduced Turnover Rate

R(Turnover)= Reduction in physician turnover rate

C(Turnover)= Current physician turnover cost per physician

Savings(Turnover)=N(Doctors)×C(Turnover)×R(Turnover)

Total Potential Financial Return

Total Return=Savings(Burnout)+Savings(Quality)+Increase(Revenue)+Savings(Turnover)
= Positive Number

Conclusion

Digital health products like Synthera catalyze innovation in healthcare by enabling personalized, data-driven care and breaking geographical barriers.

Our interviews and financial analyses have validated the significant opportunity for Synthera's digital health solution

Implementing a third-party digital solution in a traditional healthcare ecosystem is challenging.

Synthera's success depends on its solution's ability to integrate seamlessly into existing workflows, its acceptance by healthcare providers and patients, and its effectiveness in improving health outcomes for ID and IDA patients.

Through evaluation of tools, understanding their financial and clinical impacts, ensuring data compatibility, and addressing broader industry challenges, Synthera can demonstrate clinical value and generate ROI.

Acknowledgements