

THE
UNIVERSITY
OF RHODE ISLAND

REAL JOBS RHODE ISLAND CASE STUDY:

MedTech Innovation Engine

Prepared for:

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MedTech Innovation Engine

Real Jobs Rhode Island (RJRI)

In 2015, The Rhode Island Department of Labor and Training (DLT) awarded funding to workforce development collaborations throughout the state. Funding was provided through development grants to create sector-based partnerships and create a plan to provide workforce training aimed at sector needs. Implementation funding was then provided for these partnerships to develop training materials and train workers in Rhode Island in targeted industries including healthcare, technology, marine trades, and the arts. Sector partnerships were developed through public private partnerships including that included industry, workforce intermediaries and educational institutions to address the economic needs of the state.

I. Sector Need

The MedTech Innovation Engine (MTIE), led by Social Enterprise Greenhouse (SEG), was created to develop a sustainable curriculum for medical technology (medtech) entrepreneurs and to foster collaboration between medtech companies, hospitals, governmental partners, and universities. According to research by the Kauffman Foundation¹ (an organization dedicated education and entrepreneurship), high-tech startups are key drivers of job creation within the United States, and facilitating development and success of local medtech entrepreneurs is seen as essential in the medtech industry.

MedMates applied for and received a RJRI planning grant, and as part of the planning grant, MedMates created a database of government, hospital, university and private sector businesses and organizations related to the medtech field. MedMates also conducted a needs assessment with industry members, which included conducting surveys and holding events, roundtables, and discussions with sector partners. Finally, MedMates reviewed the current research about the medtech industry.

During the planning grant stage, MTIE found evidence that the medtech industry is one of the fastest growing sectors across the nation with an average salary of \$42,778 and that high technology start-up companies are a key driver of job creation throughout the United States.² In Rhode Island, over 4,000 people are employed in medtech jobs, and the medtech industry generates an estimated \$759.2M in revenue annually for the state.²

However, several challenges face the medtech sector in Rhode Island. Primarily, MTIE found that:

- Compared to neighboring states, Rhode Island has fewer higher paying jobs and a lower innovation capacity.³

¹ http://www.kauffman.org/~media/kauffman_org/research%20reports%20and%20covers/2013/0B/bds_tech_startsreport.pdf

² AdvaMed <http://www.lifechanginginnovation.org/jobs-by—state>

³ Bloomberg, STEM Report Card

- Local medtech companies are not aware of existing resources and programs that could potentially benefit them.
- Industry members and entrepreneurs stated that there were infrastructure and resource barriers and a need for technical assistance to help medtech entrepreneurs and businesses succeed.

Given these issues, MTIE proposed to design and provide a training program for medtech industry entrepreneurs to help them gain an understanding of the innovation pipeline including learning how to develop products, how to bring products to the marketplace, and how to bring production to scale.

II. Grant History

The MedMates organization was first formed in 2013. In 2015, MedMates received a RJRI planning grant to conduct a needs assessment in the medtech industry and then proposed the creation of MTIE for the RJRI implementation grant. The Director of MedMates approached Social Enterprise Greenhouse (SEG), a non-profit organization comprised of business and community leaders that provides technical assistance to entrepreneurs and businesses, about collaborating on the RJRI grant. These two organizations had never previously collaborated before, but they had been in contact during an information session in the planning grant phase. Following discussions, SEG planned to work as a subcontractor on the grant and run an accelerator program because it had previously implemented a similar program with a broader focus and had previously worked with the DLT implementing this type of program.

During the initial implementation phase of MTIE, the Director of MedMates left unexpectedly. At the time, she communicated that MedMates would not have the capacity to handle the RJRI grant; however, the MedMates board expressed a desire to continue to run the grant. After some grant re-structuring, SEG took over primary responsibility for the activities of the grant while continuing to work as a subcontractor for MedMates. In doing this, SEG decided to focus its efforts on the broader category of health and wellness rather than specifically medtech. SEG identified health and wellness as an area of need after working on social ventures across industries and decided to focus its energies in areas where the need was most critical and where the state has existing assets that make it viable to respond to those needs. SEG had previously been involved with other organizations providing support to entrepreneurs, such as Blue Cross Blue Shield, Betaspring, RevUp, and Small Business Administration programs. However, SEG had never implemented such a comprehensive program like the one designed for the RJRI grant.

III. Goals and Objectives

MTIE was designed to create an innovation pipeline (meaning learning how to develop products, bring the products to the marketplace, and scale the products) of “do well do good” health and wellness entrepreneurs and businesses. The training program worked to provide these

entrepreneurs and businesses with technical assistance including ideation, formation, and implementation as well as to create jobs in Rhode Island and positively impact the lives of people. The creation of MTIE involved two training and support goals with multiple sub-goals:

1. Create a community to help connect entrepreneurs with industry experts to gain an understanding of the innovation pipeline.
 - Build and convene a health and wellness advisory group.
 - Convene and recruit health and wellness coaches and advisors.
 - Develop technology infrastructure to track recruitment and participation of entrepreneurs/ventures and coaches/advisors.
2. Provide technical assistance, training, and support to healthcare entrepreneurs and businesses at multiple stages within the innovation pipeline.
 - Develop and deliver early feasibility checks.
 - Develop and offer customized health and wellness 101 workshops.
 - Customize and execute a health and wellness accelerator program.
 - Organize later stage health and wellness huddles.

The main focus of MTIE was the creation of connections and networks between entrepreneurs and industry experts. The experts volunteered and donated their time as they were passionate about the needs of the healthcare industry. MTIE focused on empowering individuals at any stage in the innovation process to become successful entrepreneurs.

Specifically, MTIE sought to meet the following training objectives:

- Provide early stage feasibility checks to 10 participants.
- Provide health and wellness 101 workshops to 20 participants.
- Provide the accelerator program to 12 participants.
- Provide later stage health and wellness huddles to 4 participants.

IV. Partnerships

MTIE brought together a variety of industry employers within the healthcare and medtech sectors as well as other partners to help with recruitment and funding. The chart below details the partners and their specific responsibilities and contributions.

Table 1: Partnership Members and Responsibilities

| | |
|---|--|
| Social Enterprise Greenhouse | Responsible for leading the implementation of MTIE; conducting trainings; convening meetings; developing curriculum; recruiting participants; providing meeting space. |
| MedMates | Initial lead applicant for MTIE: responsible for overseeing the implementation of the health and wellness 101 workshops. |
| Aspiera Medical, RI BioScience Leaders | Responsible for providing mentorship and assisting with curriculum development. |
| Neighborhood Health Plan RI | Responsible for assisting with curriculum development on topics related to health insurance. |
| Brown University, HealthID Profile, Inc, Sproutel, Synchronized Sales, Ximedica, LLC. | Responsible for providing mentorship; assisting with curriculum development; providing advisory board participants; recruiting participants. |
| RI Business Plan Competition | Responsible for providing funding and training assistance. |
| RI Science and Technology Advisory Council | Responsible for providing funding for the development of the curriculum; providing grants to defray the cost of applying for federal small business awards; providing matching funds as needed for small businesses aiming to increase the visibility of these programs. |
| Partnership for Greater Providence | Responsible for identifying needs within the city of Providence to assist with job creation. |
| Optimity Advisors, Delta Dental, Blue Cross Blue Shield, Harvard Business School Alumni Association of Southeastern New England, YMCA, Brown University, University of Rhode Island | Responsible for participating in various training programs; providing support to MTIE on the advisory board or as industry experts. |

V. Implementation Activities and Processes

MTIE worked to create a community that would support and train health and wellness entrepreneurs and businesses in navigating the innovation pipeline. To achieve its two goals, MTIE implemented several programs.

Goal #1: Create a community to help connect entrepreneurs with industry experts to gain an understanding of the innovation pipeline.

Health and Wellness Advisory Group

The purpose of the Health and Wellness Advisory group was to bring needed industry expertise, meaning those with expertise in medtech or health and wellness, to the SEG network to assist with curriculum development and mentorship of entrepreneurs. MTIE initially worked to hire a project manager and then to create the Health and Wellness Advisory Council. This council included members from many different organizations including: the YMCA, the Patient Voice Institute, South County Health, Optimity Advisors, RI Health Center Association, Delta Dental, and the Hospital Association of RI.

SEG then worked with the advisory council to create programming for entrepreneurs at various stages. The end goal was gathering external knowledge to disseminate to entrepreneurs and business ventures. SEG, along with the advisory council, held a monthly convening meeting, helped to implement the accelerator program, and conducted the health and wellness huddles. The advisory group included more than 60 members.

Health & Wellness Coaches and Advisors

MTIE organized bi-monthly networking events to convene and recruit “do well do good” health and wellness entrepreneurs and businesses from all industries. For example, in 2015 SEG held an Aging 2.0 pitch competition, and the momentum from this conference prompted MTIE to plan a “silver economy” conference. These events served to recruit volunteers with expertise and knowledge in the medtech and health and wellness sectors. These volunteers then assisted with the accelerator program, curriculum development, and mentorship. The end goal was to build an ecosystem that would support and foster the growth and development of entrepreneurs and their ideas or businesses.

Technology Infrastructure

MTIE worked to identify and implement appropriate technology and tools to track participants and measure the impact of the grant. MTIE planned to track metrics on engagement, services accessed, venture growth, and job creation. MTIE began to develop this infrastructure during the implementation grant year and considers this to be a multi-year process.

Goal #2: Provide technical assistance, training, and support to healthcare entrepreneurs and businesses at multiple stages within the innovation pipeline.

Early Stage Feasibility Checks

The Early Stage Feasibility Checks program was guided by input from MedMates leadership and the Health and Wellness Advisory Council. The program targeted “pre-start contingency” entrepreneurs. This program was designed to provide early stage entrepreneurs and start-up companies an opportunity to discuss the feasibility of their business ideas and regulatory compliance for assistance early in the process with two to four industry experts. SEG planned on offering at least 10 early stage feasibility sessions in 2016. SEG’s Program Manager executed the program delivery.

Customized Health & Wellness 101 Workshops

This program was focused on helping entrepreneurs turn ideas into action. The customized health and wellness 101 workshops were designed to help assess feasibility of enterprises as well as provide access to business planning tools and industry expert mentoring services. Finally, a project consultant developed and delivered medtech specific workshops geared towards pre-startup companies. Those who completed the workshops were encouraged to take part in the accelerator program.

Health & Wellness Accelerator Program

The 12-week Health & Wellness Accelerator Program, in partnership with Brown University’s Social Innovation Initiative, ran from September through December 2016. The accelerator program provided mid-stage entrepreneurs and start-up businesses with knowledge and networking opportunities to take their business ideas to the next level. The 12-week program included weekly four hour in-person workshops, coach meetings, and online modules. MTIE utilized already existing general business development content, and a project consultant helped develop health and wellness specific content for the accelerator program. Importantly, after the accelerator program ended, many of the entrepreneurs and industry expert volunteers continued to come to the SEG space to meet to discuss ideas.

Later Stage Huddles

The later stage huddles focused on supporting later stage ventures and were held in collaboration with Harvard Business School Alumni Association of Southeastern New England. The original idea for ‘huddles’ came from an entrepreneur who had been through some of the early stage programs but wanted continued support for his business. The huddles were implemented as a three-hour strategy session where entrepreneurs met with a coach who provided insight into opportunities and challenges related to product/service development as well as provided network support, management advice, and technical assistance. Then, MTIE hosted a secondary three-hour meeting where small groups of industry leaders, consultants, and advisors discussed the strategic need for the product or service with the entrepreneur and made a plan for moving forward. The goal was to have at least four huddles.

VI. Achievements

Partnerships

Building of community

MTIE feels that the biggest success of this grant has been the building of community between entrepreneurs and industry experts. MTIE accumulated a vast network of volunteers willing to help with various programs (e.g., advisory council, coaches, feasibility checks, an accelerator program, workshops, huddles). To assess program outcomes on business success or job creation at this point would be premature, but according to MTIE, the impact of creating the infrastructure for entrepreneurs to turn ideas into reality has been successful.

Effective partnerships with higher education institutions

MTIE's various partnerships with other organizations and industries have been a strength of the grant. MTIE has included partners from Brown University and the University of Rhode Island (URI), and found these partnerships to be very effective and productive for curriculum development and recruitment. For example, at Brown Medical School, one class worked to incorporate human-centered design thinking to solve problems in healthcare. The medical school students shadowed clinicians in the hospitals and formulated project ideas. For their final presentations, SEG identified judges for a competition, and the winners received an SEG prize package of working in SEG's physical space and having priority access to the advisory network. SEG also participated in various activities, such as a Health Hack-a-thon with URI, which has contributed to success for the training programs. The URI College of Nursing is also considering integrating entrepreneurial curriculum into the nursing programs so that nursing students can be empowered to think about innovative solutions for meeting healthcare needs.

Recruitment

Volunteers

MTIE has been highly impressed by the caliber of people involved on the advisory council as volunteers. According to MTIE, many of the leading minds in healthcare actively participated in the training program activities, and were incredibly generous with their time. These volunteers had a strong desire to give back and were very passionate about seeing entrepreneurs be successful.

Ability to unite across the sector

MTIE was able to bring entrepreneurs and experts together in ways that were not possible prior to the RJRI grant. Through the grant activities, MTIE was able to build a community of entrepreneurs and industry leaders mostly using word-of-mouth.

Trainee Barriers

Regulations, changing trends, and lack of resources

MTIE acknowledged that the industry can be difficult to navigate due to regulations, changing trends, and a lack of resources. To assist with this, expert volunteers assisted inexperienced entrepreneurs. Further, MTIE made an effort to survey participants to find the optimal meeting time to reduce as many barriers to meeting as possible.

Training

Quality training

Through feedback surveys and discussions with participants, MTIE has found that the curriculum developed with the help of industry experts has been excellent. One notable example was the 12-week accelerator program developed in partnership with Brown University's Social Innovation Initiative. MTIE believes its programming is now the most comprehensive program providing technical assistance to entrepreneurs at various stages in the region, and providing these programs has brought a more diverse pipeline of entrepreneurs to SEG than it had previously.

Ability to meet goals

MTIE exceeded its goal numbers on feasibility checks, 101 workshops, and accelerator program participants. MTIE found that that the early stage feasibility checks were one of the services most needed by the sector. Furthermore, the advisory council had more than 60 members, and at least 55 business ventures were served during the first year.

Volunteer efforts resulted in program success

SEG also had remarkable success with its expert volunteers assisting entrepreneurs. The accelerator program alone had about 130 coaching hours completed at no cost. One successful example included an entrepreneur who collaborated with a high-level staff person at Women & Infants Hospital. This entrepreneur then proceeded to obtain a grant for her ideas. MTIE continued to be impressed by the number of expert volunteers who continued to meet with entrepreneurs after the programs had ended. According to MTIE, this continued to happen because the expert volunteers were passionate about helping the entrepreneurs succeed.

Transition from Training to Employment

This program was not an employment program, but focused instead on developing Rhode Island's industries; therefore, MTIE did not discuss achievements related to the employment of training participants.

Other

Creation of physical professional spaces

MTIE also worked with Delta Dental, Blue Cross Blue Shield, Optimity Advisors, and Ximedica. Providing a place for the entrepreneurs to convene in a professional workspace has been a strength of the grant. If a new entrepreneur or start-up business does not have a

professional physical space to meet for a conference, an individual meeting, or to hold an online conference call, this can be a barrier to success. Therefore, having the SEG space available has been very effective for bringing people together.

Program flexibility

MTIE valued the flexibility within the RJRI grant and found it could make effective changes to its programs based on what it learned in executing the various programs.

Table 2. Performance Metrics

| IG-13 Medtech Innovation Engine (MedMates) | Start Date of First Cohort | Proposed End Date for All Cohorts | Target Enrollment | Enrolled | Target Completed | Completed |
|--|-----------------------------------|--|--------------------------|-----------------|-------------------------|------------------|
| Early Stage Feasibility Checks (2016) (Incumbents) | 2/2/16 | 12/15/16 | 10 | 32 | 10 | 32 |
| Later Stage Huddles (2016) (Incumbents) | 2/2/16 | 12/15/16 | 4 | 4 | 4 | 4 |
| Med-Tech 101 Workshops (2016) (Incumbents) | 2/2/16 | 12/15/16 | 20 | 3 | 20 | 3 |
| Health & Wellness Accelerator (2016) (Incumbents) | 9/15/16 | 12/15/16 | 12 | 8 | 12 | 8 |
| Other Objectives | | | | | | |
| Community Building- Number of DLT Events | | | | | 12 | 14 |
| Community Building- Number of Event Attendees | | | | | 500 | 237 |
| Community Building- Number of new health coaches | | | | | 25 | 62 |
| Community Building- Number of H&W strategic partnerships | | | | | 5 | 13 |
| Pipeline Vitality- Number of Ventures Engaged | | | | | 20 | 62 |
| Venture Growth- % Revenue Growth | | | | | 10% | Not Tracked |
| Jobs FTE's and Jobs | | | | | 20 | 103 |

VII. Challenges

Partnerships

Staff turnover and grant re-structuring

MedMates experienced a leadership change in the initial phase of the grant. When the director of MedMates left her position, SEG took over and restructured the program. MedMates was not often an active participant in this process. The former leader of MedMates was SEG's main point of contact. The leadership restructuring resulted in miscommunication between SEG and MedMates about implementation responsibility. Although SEG led the grant restructuring, SEG remained subcontractors on the grant rather than taking over as the main applicant.

Recruitment

Recruiting for the Accelerator Program

MTIE had difficulty recruiting for the accelerator program, but it was able to recruit eight out of its stated goal of 12. One of the biggest challenges to recruitment was that many entrepreneurs in this industry need significant money upfront for research and development. If programs cannot provide or promise money, they will seek funds and services elsewhere because it is becoming a standard to provide funding as prizes to winners to assist with research and development. According to MTIE, many entrepreneurs "jump from accelerator to accelerator mainly because of the money." While MTIE provided the use of the SEG space for a year and networking opportunities for the accelerator program, the fact that it has not been able to provide monetary prize packages to entrepreneurs has been limiting. For example, MTIE lost some participants to a Massachusetts program called "MassChallenge" because it awards money for research and development to entrepreneurs.

Trainee Barriers

Entrepreneurs reluctant to commit time to training

MTIE found that recruiting entrepreneurs can be challenging and requires attending events in-person and speaking at corporations. One particular challenge has been convincing entrepreneurs and businesses to commit time to participate in the huddles, and MTIE found that some entrepreneurs were not willing to take time to attend meetings due to other priorities. To address time challenges, MTIE conducted surveys to identify the most convenient days and times for participants to meet.

Training

Lack of pre-existing resources

SEG had no previous experience with the medtech sector and little experience with health and wellness, and it quickly learned there are no pre-existing resources for identifying what companies and organizations are involved and what they do. As part this grant, MTIE has forged many partnerships and worked to connect multiple entities within the medtech and healthcare sectors.

Rapidly changing trends

Rapidly changing trends within the medtech and healthcare industries makes staying abreast of the latest happenings in the industry on a daily/weekly basis difficult and also makes it challenging to provide technical assistance for entrepreneurs and businesses.

Confusion over organization functions

There was also “brand confusion” about what SEG does compared to other related entities, such as MedMates, within the healthcare industry. This has and continues to provide confusion among interested parties and is a challenge SEG plans to work on in the future.

Transition from Training to Employment

This program was not an employment program but focused instead on developing Rhode Island’s entrepreneurs; therefore, MTIE did not discuss challenges related to the employment of training participants.

Other

Managing a large and busy grant program

SEG, through its involvement in the RJRI grant, feels it has tapped into an area of great need and interest within the industry. The biggest challenge of this grant was finding enough hours in the day to do all the things SEG would have liked to do and also meet with all the key players. Having to set priorities and avoid burn-out among staff was important.

VIII. Sustainability

SEG felt the activities and programs it implemented was sustainable. However, SEG felt that the MTIE partnership itself was not sustainable due to conflicts with partners, MedMates specifically. SEG believes that it could successfully continue to implement its program activities as lead applicant. SEG’s list of industry expert volunteers continues to grow, and it believes that there are ample opportunities for additional partners to be added to the list. SEG has stated that there is an interest from Blue Cross Blue Shield and Delta Dental to possibly fund continuing programs. SEG believes there is a lot of momentum in this program, and sees continued opportunities as making this program very sustainable.

SEG also aims to continue leveraging university partnerships. SEG feels that remaining flexible is important, and plans to continue to morph and expand the programming based on needs of entrepreneurs and businesses. One goal for the coming year of the grant is to become more involved with key players in hospitals and other health care providers. SEG feels that it has a great board of directors that does not limit the organization , and therefore now has plans to expand the model to assist entrepreneurs and business ventures in the environment and education industries under the umbrella of their “do well do good” social enterprise mission. SEG has found that it has taken on a greater role in helping to educate businesses on what it means to be a

good corporate citizen. SEG finds this expanded mission to be very exciting and feels that it is meeting needs and tapping into the willingness of industry experts to give back.

IX. Lessons Learned

The following lessons were learned by MTIE in executing this training program:

- There is a high amount of willingness of industry experts to donate their time to help entrepreneurs.
- In the exciting, growing, ever-changing industries of medtech and healthcare, there are multiple opportunities to become involved in new ventures, but ensuring staff are not overworked can be important to ensuring the long-term sustainability of training programs.
- Providing prizes for programming would help with recruitment in order to maintain competitiveness with similar out-of-state programs.

X. Best Practices

These best practices were utilized by the MTI Partnership:

- Convene an advisory board to assist with curriculum development and training program implementation.
- Continue to identify new partners.
- Have a mission of “do well, do good” to help encourage and motivate industry experts to provide assistance to entrepreneurs for no charge.
- Identify industry experts willing to donate their time to entrepreneurs and create networks of entrepreneurs and industry experts.
- Attend meetings and events throughout the community to recruit for training programs.
- Provide a physical space to enable connections to be made between entrepreneurs and industry experts.
- Provide multiple different avenues for getting people involved at the different stages of entrepreneurs (from early-stage entrepreneurs to people with existing businesses).
- Provide a program that can be modified and improved over time based on previous experiences.

XI. Recommendations

Based on the successes and challenges of the MTI Partnership, the following recommendations are suggested:

- Identify mechanisms, perhaps through other agencies and/or public-private ventures, which could provide or partner to provide incentives or prize money for entrepreneurial contests and programs.

- Continue to be flexible and enable partnerships to learn from mistakes and try something new to improve programs over time.
- Particularly within the healthcare sector, help RJRI grantees with marketing their companies and programs to ensure entities know about available services and are not confused when multiple organizations provide similar, but different, programs.