POWERING CARE FAMILIES WITH LIVPACT'S CARE ENGAGEMENT PLATFORM

The current situation – an aging population and uncoordinated family care. Forty-four million unpaid caregivers provide care for adult family members and friends with chronic illnesses.[1] The Caregiver Support Ratio (CSR) shines a light on the problem – the CSR represents the available population that is physically able to provide care versus the population aged 80+ that is expected to need care. This ratio is expected to worsen from 7:1 in 2013 to 4:1 over the next decade – putting the future status of a growing population of care recipients at risk.[2] According to the Family Caregiver Alliance, family caregivers, particularly women, provide 75% of all the caregiving in the US. Unfortunately, today such care is both uncoordinated among participating caregivers and untracked in any electronic form.

The future of home care will be a mix of unpaid and paid. Growing dependency on and shortage of family caregivers is only one dimension of the looming care shortage. Paid care workers are also in short supply, particularly in urban areas. And this shortage of workers in urban areas has boosted investment interest in tech-enabled care – reflecting nearly $200 million of venture investment within the past 2 years.[3] But in some parts of the country, there is already a shortage of paid caregivers.[4] And as AARP has noted, the possibility of paying friends and families has arrived – possibly from Medicaid or the VA.[5] Although these payment processes indicate that some structure, including overtime pay and hour tracking has arrived, there is little systemic use of technology in the family caregiving segment.[6]

New technologies have created new opportunities for enhancing the care journey. In recent years there have been many health sensors and home IoT devices that have come onto the market. While these initial devices have targeted younger consumer markets, the application of these technologies for the aging market are starting to become more apparent.

Care engagement creates better health outcomes. Engaging patients and families has been long understood as a strategy to create better outcomes – but despite that knowledge, much remains to be done, according to the Agency for Healthcare Research and Quality (AHRQ) to improve.[7] In that context, coordinating both paid and unpaid care into a more coherent process and team can help fill the gaps and improve health outcomes.[8] Engaged and activated patients show better results in 9 of 13 health outcomes – and have 31% lower costs.[9] And further, using technology that frames patient and family engagement and coordinates both paid and unpaid care can be a path to these improved outcomes.

The care family – why is it important? The **Care Family** can be defined as the group that shares in and is involved in the caregiving process, includes professionals, local and long distance family members along with primary personal caregivers. The care family typically has a primary contact person who keeps all family members informed on a regular basis, determines specific duties for

each family member, and provides choices in caregiving jobs. For example, roles shared could include arranging for transportation, ordering supplies, providing appointment reminders, or helping participants stay involved and motivated to help.

What does the care family need? The **Care Family** needs tools that support patient and family engagement across the continuum of care, including tools that enable the sharing of assigned tasks, both formal and informal, both health-related and personal/social tasks that keep the patient and caregivers informed. The **Care Family** participants need access to health history, legal documents, contacts, previous encounters, files, and insurance information. The care professional plays a key role within the structure of the **Care Family --** providing needed access to data from care providers, pharmacies, labs, specialists, home monitoring and patient-generated data. With the proper technology platform structure, the **Care Family** can understand what is going on day-to-day in the health care and well-being of their loved one – and actively participate with care professionals in achieving desired outcomes. One technology solution designed to empower the **Care Family** is Livpact's Collaborative Care Coordination solution.

"*A large and growing number of families are struggling to coordinate care and need greater support for peace of mind and enhanced quality of life for their loved ones*", states Omid Tahernia, Livpact's CEO and Founder. "*Livpact's unique technology approach brings together a comprehensive Data Platform, integrates IoT capabilities for monitoring, Voice-First Connect for updates, and a Companion application for the care family. This approach significantly eases the effort and focuses the Care Family together with Care Professionals on the best health outcomes and a positive health environment for the care receiver.*"

Introducing Livpact's Care Engagement Platform

The Care Engagement Platform is a structured system that is designed to help keep the Care Family, that is the care recipients, care providers, and care professionals informed and actively engaged in the care process. It is used by the **Care Family** to actively coordinate care, stay informed of the complete health status of the care receiver and to activate the roles of patients and families.

The three components of the Livpact Solution are Coordinator, Engage, and Companion. These components enable information sharing between the **Care Family,** providers, professionals and care team so that all participants in care can remain up to date with the best and most recent information (see Figure 1).

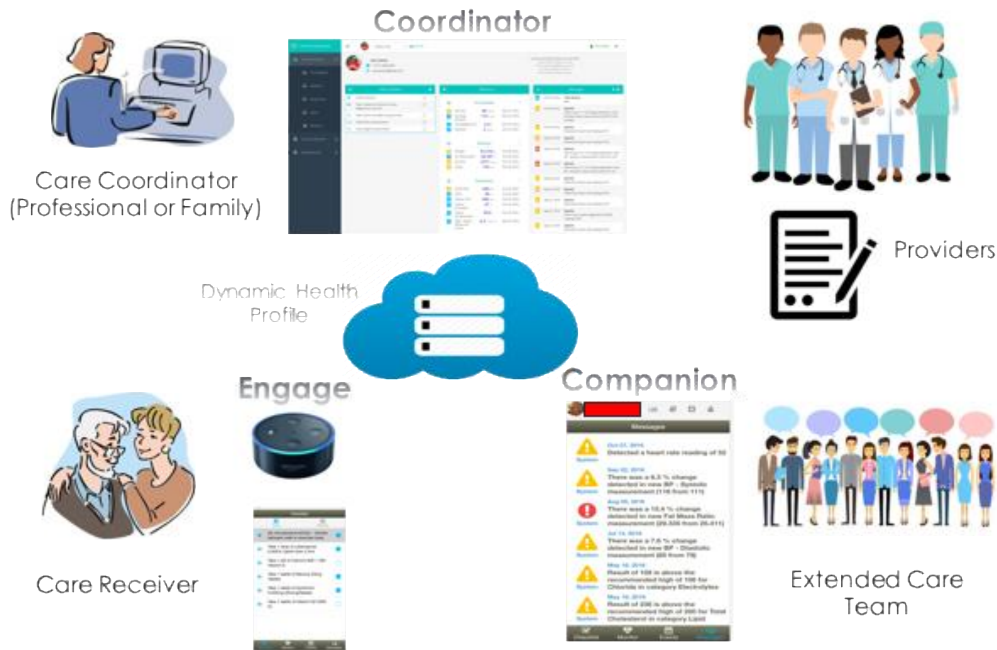

Figure 1 - The Three Elements of the Livpact Solution

The Care Engagement Platform brings together various activities required in coordinating and managing care.

- IOT-Based Monitoring and Alerts
- Care Family Coordination and Communication
- Personal Health Information, Status and History
- Single Access Point for Health Data and Documents

The data platform is designed to underpin the Care Engagement Platform which is used by the **Care Family** – and which informs caregivers and activates the roles of patients and families. The data platform aggregates multiple data sources into a HIPAA Secure storage structure that includes multiple measurement types, analytics, health record data, and alerts.

A robust, integrated data platform (see Figure 2) underpins the Care Engagement Platform and maintains a dynamic, up to date repository for all the data relevant to the health of the care receiver. The data platform automatically aggregates data from multiple sources and manages multiple measurement types, analytics, health record data, encounter summaries and the personalized care plan. Care Family members receive alerts about deviations from the care plan, measurements out of range and upcoming activities and tasks.

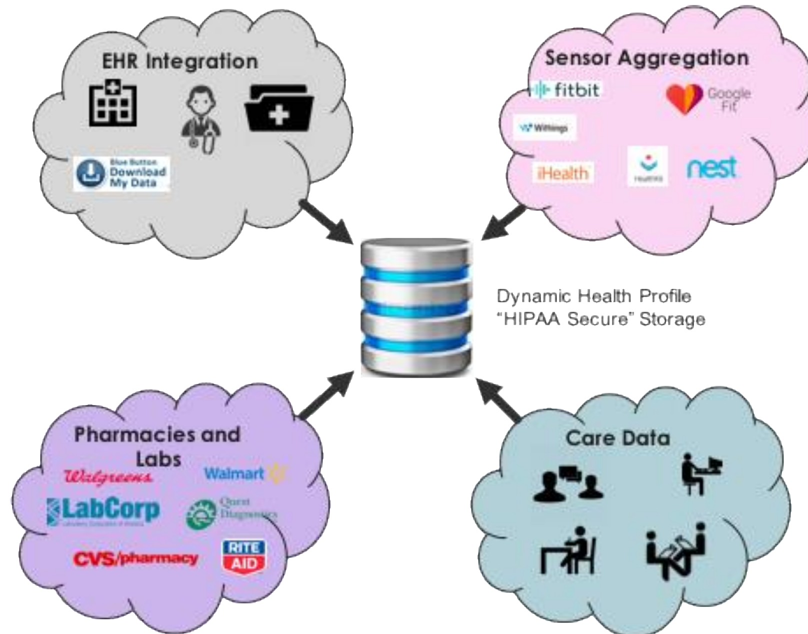

Figure 2- Livpact Data Platform stores measurement types, health records and alerts

The architecture of Livpact's data platform (see Figure 3) is comprehensive and allows it to scale as new IOT, sensor, medication adherence and other new sources of health data become available in the market.

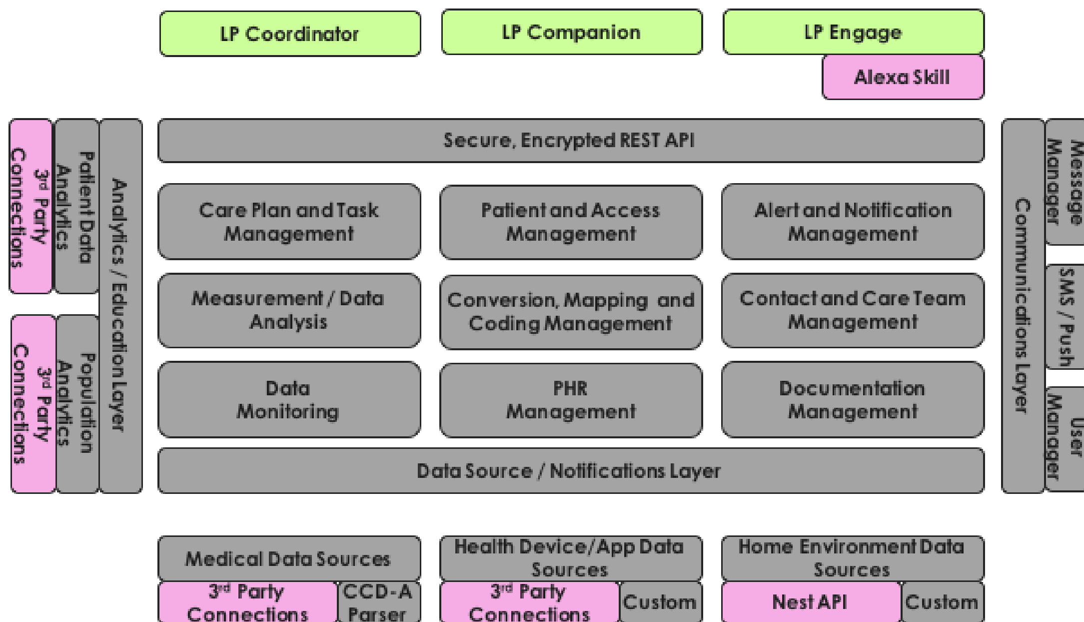

Figure 3 - Livpact Data Platform Architecture

Use Scenarios

The use cases of the Livpact Solution are most clearly demonstrated by scenarios that underscore how the offering is used – and how it is unusual in engaging caregivers, providers, patients and the **Care Family** in the same information system:

Scenario 1 - Professional Care Giver

Situation: A patient, Ed, with CHF is released from the clinical environment with a discharge plan that includes new medications and at-home monitoring of weight, sleep, activity, maximum heart rate, blood pressure and EKG.

Actions: Ed's daughter, Edna, gets an account and sets up Ed using the Coordinator. She enters the care plan, connects to Ed's medical records and creates a set of care tasks. She hires a professional caregiver to come in 3 days a week to help with the EKG, take blood pressure and review Ed's progress; Edna assigns these tasks to the caregiver. Ed is given an activity watch, blood pressure monitor, a smart scale and an Amazon Echo Dot for making vocal updates to the system.

Checklist:

- Daily - Take prescribed medications
- Daily - Do some physical activity, increasing heart rate each day.
- Daily - Eat low sodium foods.
- Daily - Take weight measurement.
- 3 Times a Week – Take EKG reading
- 3 Times a Week – Take Blood Pressure reading

Activity and Alerts: The care family is monitoring Ed's adherence to his plan and encouraging him along the way.

- On the fifth day, the care family gets an alert that Ed's weight has increased more than 2 pounds in one day. Edna calls the cardiologist and he is brought in for a check. The cardiologist determines a change in medication is required and asks to have weight measured three times a day until it stabilizes. A summary of the encounter is automatically updated in Ed's profile.

Result: Warning signs were quickly identified before more serious complications occurred. Ed did not have any re-hospitalization over the 6-month period after the initial procedure and the care plan is updated to less intensive management.

Scenario 2 - Family Care Giver

Situation: An elderly female, Sara, in her mid-70s, while generally healthy, has a sleeping disorder, anxiety, is slightly overweight, and takes a few important medications.

Actions: Her younger son Gary (52), who lives 3000 miles away, uses Coordinator to capture all her health data, documents, history and connect to her pharmacy, hospital, and primary care physician. He sets up a Care Family that includes her other children and her next-door neighbor. He sends her a sleep monitor, activity watch, smart scale and Amazon Echo Dot.

Activity and Alerts: Sara has been using the system for 9 months and has made excellent progress in her weight control, keeping activity up, taking her medications and tracking her sleep. She is very happy knowing that her family cares about her health and is involved. Recently, a close friend passed away and she has been feeling depressed; her new therapist prescribes 25 mg of Norpramin and increases it to 50 mg after 2 weeks.

- The care family receives an alert that none of the tasks on the checklist were followed today which Sara is normally very diligent about. Her daughter, Mary, calls to check and finds that Sara is confused and not speaking coherently. Mary calls her brother, Craig, who lives locally and he goes to Sara's home and, finding her disoriented, brings her into the emergency room. Since Sara is disoriented and confused, Craig takes charge of working

with the doctors. Using Companion, he shows the signed healthcare POA giving him authority for decisions and shares Sara's current medications, history and status. The doctor sees that in addition to the Norpramin, Sara is also taking Xanax (Alzprazolam) prescribed by a previous therapist which is likely exacerbating side effects of the Norpramin.

Result: Sara is taken off the Norpramin and returns to normal. Craig's access to her medication list and POA allowed rapid determination of cause for the issue thus avoiding costly and multiple unnecessary tests and potential admission by the hospital.

Scenario 3 – Long Term Care Community

Situation: A relatively new assisted living facility, LTC Living, is having trouble building high star ratings due to lack of positive feedback from the families of their residents. The call volume of family members calling in to ask for progress updates is overwhelming, costly, and extremely inefficient.

Actions: LTC Living adopts Livpact's Care Engagement Platform and establishes baseline monitoring of activities with residents. They meet with each family to determine what is important for each family to know about the activities of their loved ones and recommend the use of the Companion application by them.

Activity and Alerts: Care families receive a daily report of the activities for each resident and the relevant health metrics. Resident's morale increases with the knowledge that their families are now tracking their status daily.

Outcome: Star ratings for LTC Living begin a marked rise, residents seem more satisfied, and families are happy staying informed without the need for calling for daily updates.

To learn more about Livpact's Care Engagement Platform, see Livpact.com.

---

[1] Family Caregiver Alliance https://www.caregiver.org/caregiving

[2] https://www.ageinplacetech.com/blog/stranded-geography-today-s-caregiver-support-ratios-and-80-population

[3] https://www.ageinplacetech.com/page/tech-enabled-home-care-rising-worker-scarcity-family-expectations

[4] https://newoldage.blogs.nytimes.com/2014/02/26/a-shortage-of-caregivers/

[5] http://www.aarp.org/home-family/caregiving/info-2016/you-can-get-paid-as-a-family-caregiver.html

[6] http://www.aarp.org/content/dam/aarp/home-and-family/personal-technology/2016/04/Caregivers-and-Technology-AARP.pdf?intcmp=RDRCT-ESI-INNOV50-CAREGVRTECH-20160427

[7] https://www.ahrq.gov/research/findings/final-reports/ptfamilyscan/ptfamily4.html#Gaps

[8] https://partnershipforpatients.cms.gov/about-the-partnership/patient-and-family-engagement/the-patient-and-family-engagement.html

[9] http://content.healthaffairs.org/content/34/3/431.abstract