Streetcoin:

integrating place-based social landscape with healthcare risk models through the electronic health record Alan Waxman, MLA Chethan Sarabu, MD

> Healthy City International 2019 Monday October 14th, 2019



Alan Waxman, MLA
Landscape Architecture
Urban Design



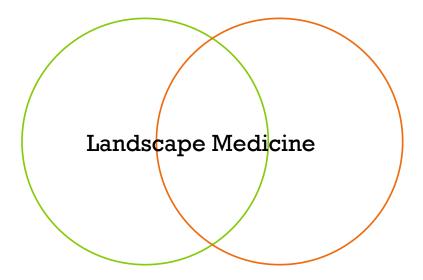
Chethan Sarabu, MD
Paediatrics
Clinical Informatics



Municipalities
City Planning
Landscape Architecture
Streets, Parks, Buildings
Maps



Healthcare system
Doctors
Nurses
Hospitals & clinics
Electronic health records



Landscape medicine:

A place-based framework for valuing community assets through the healthcare system

Landscape Medicine

A place-based framework for valuing community assets through the healthcare system



Electronic Health Records/Maps

Cipher/streetcoin

Patients/Community

Social determinants of health/Environment

The time is ripe to connect landscape and medicine; particularly in the United States but globally as well.

As costs have escalated, all health systems are looking to invest in upstream preventive measures to decrease costs.

We also now have the technology and data layers to link the urban landscape, people, and health systems.

This is giving rise to a new type of healthcare/insurance system known as Accountable Care Organizations (ACOs).

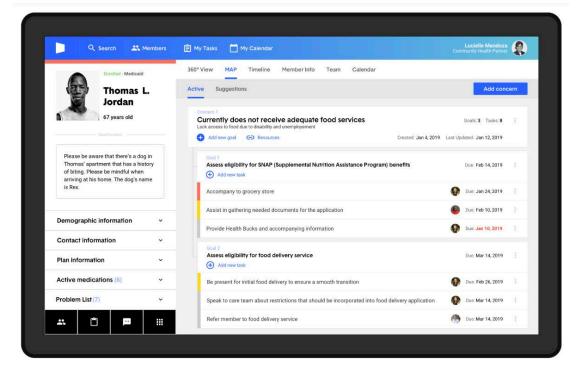


Health is local.

Cityblock was founded on the premise that health starts at the neighborhood level, and that everyone should have good care for what matters to them. We saw firsthand how healthcare has fallen short in providing adequate care for people living with complex health and social needs—and knew there was room for improvement.



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10th Decile Project

Los Angeles, CA | September, 2015

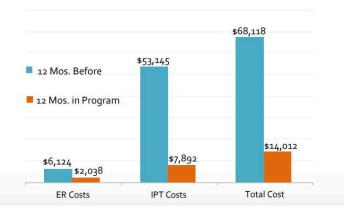
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Cost Avoidance

Figure 6: Cost Avoidance

Hospital Cost Avoidance Pre- and Post- Enrollment

\$54,106 average per person per year, n=77

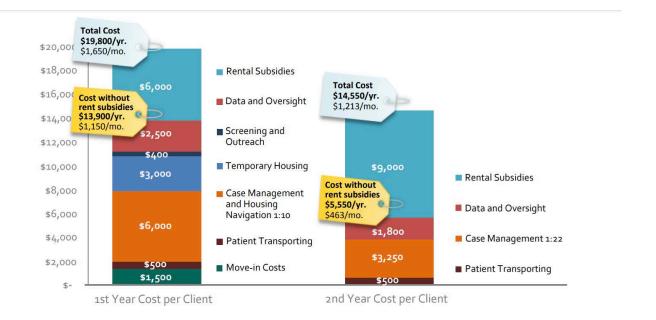


Net Cost Avoidance: Amount saved after accounting for 10th Decile Program Costs \$34,306—\$39,556

ER Costs Down 67%

Inpatient Costs Down 85%

Total Costs Decreased 79%







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Health Benefits

The Benefits of Nature are **Mental**

There are currently more than 400 studies that demonstrate the numerous health benefits that nature provides. Below we've highlighted a few key resources that give an overview of the findings. You can also find relevant infographics in the ParkRx toolkit.





Literature Reviews

Databases



Prescribe Parks What is Park Rx America? Resources Media Contact

PRESCRIBER LOGIN &

For Health Professionals

Have you ever prescribed Nature before? As a provider, are you ready to try something

How much time do you spend outside in a natural setting during YOUR free time?

Take the opportunity to capitalize on the provider burnout that has to do with prescribing the same medications and doing the same things we do every day without considerable change in our patients' lives.





For Park Agencies

We work closely with managers of public lands to ensure patient access to therapeutic time in nature.

Park Rx America has collected data on thousands of parks and green spaces, searchable by location, with results filterable by standard park attributes and features, and viewable as printable one-page Park Summaries.

We have demonstrated scalability by replicating the park prescription model in diverse park agencies and health provider organizations across the country.



Learn More »

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Table 1. Summary of evidence-based health benefits of nature contact.

No.	Health/well-being benefits	References
1	Reduced stress	Berto 2014; Fan et al. 2011; Nielsen and Hansen 2007; Stigsdotter et al. 2010; van den
		Berg and Custers 2011; van den Berg et al. 2010; Ward Thompson et al. 2016
2	Better sleep	Astell-Burt et al. 2013; Grigsby-Toussaint et al. 2015; Morita et al. 2011
3	Improved mental health:	
	Reduced depression	Astell-Burt et al. 2014c; Beyer et al. 2014; Cohen-Cline et al. 2015; Gascon et al. 2015;
		Kim et al. 2009; Maas et al. 2009b; McEachan et al. 2016; Nutsford et al. 2013; Sturm
		and Cohen 2014; Taylor et al. 2015; White et al. 2013
	Reduced anxiety	Beyer et al. 2014; Bratman et al. 2015a; Maas et al. 2009b; Nutsford et al. 2013; Song
		et al. 2013; Song et al. 2015
4	Greater happiness, well-being, life satisfaction	Ambrey 2016; Fleming et al. 2016; Larson et al. 2016; MacKerron and Mourato 2013; Van Herzele and de Vries 2012; White et al. 2013
5	Reduced aggression	Bogar and Beyer 2016; Branas et al. 2011; Kuo and Sullivan 2001a, b; Troy et al. 2012;
	Charles Cart American Cartest in Contract Management (American	Younan et al. 2016
6	Reduced ADHD symptoms	Amoly et al. 2014; Faber Taylor et al. 2001; Faber Taylor and Kuo 2009; Faber Taylor
	Control of the Contro	and Kuo 2011; Kuo and Faber Taylor 2004; Markevych et al. 2014b; van den Berg and
		van den Berg 2011
7	Increased prosocial behavior and social connectedness	Broyles et al. 2011; Dadvand et al. 2016; de Vries et al. 2013; Fan et al. 2011; Holtan
	A STATE OF THE PROPERTY OF THE	et al. 2015; Home et al. 2012; Piff et al. 2015; Sullivan et al. 2004
8	Lower blood pressure	Duncan et al. 2014; Markevych et al. 2014a; Shanahan et al. 2016
9	Improved postoperative recovery	Park and Mattson 2008; Park and Mattson 2009; Ulrich 1984
10	Improved birth outcomes	Reviewed by Dzhambov et al. 2014
11	Improved congestive heart failure	Mao et al. 2017
12	Improved child development (cognitive and motor)	Fjørtoft 2001; Kellert 2005
13	Improved pain control	Acutely (Diette et al. 2003; Lechtzin et al. 2010) and chronically (Han et al. 2016)
14	Reduced obesity	Bell et al. 2008; Cleland et al. 2008; P. Dadvand et al. 2014a; Lachowycz and Jones
		2011; Sanders et al. 2015; Stark et al. 2014
15	Reduced diabetes	Astell-Burt et al. 2014a; Bodicoat et al. 2014; Brown et al. 2016; Thiering et al. 2016
16	Better eyesight	French et al. 2013; Guggenheim et al. 2012; He et al. 2015
17	Improved immune function	Li et al. 2006; Li et al. 2008a; Li et al. 2008b; Li et al. 2010; Li and Kawada 2011
18	Improved general health:	
	Adults	Brown et al. 2016; de Vries et al. 2003; Kardan et al. 2015; Maas et al. 2006; Maas et al.
		2009b; Stigsdotter et al. 2010; Wheeler et al. 2015
	Cancer survivors	Ray and Jakubec 2014
	Children	Kim et al. 2016
19	Reduced mortality	Coutts et al. 2010; Gascon et al. 2016b; Hu et al. 2008; James et al. 2016; Takano et al. 2002; Villeneuve et al. 2012
20	Asthma and/or allergies (studies show both improvements	Andrusaityte et al. 2016; Dadvand et al. 2014a; Fuertes et al. 2014; Fuertes et al. 2016;
	and exacerbations)	Lovasi et al. 2013; Lovasi et al. 2008; Ruokolainen et al. 2015

Note: ADHD, attention-deficit hyperactivity disorder. The references in Table 1 are illustrative rather than exhaustive; they include both recent reviews and research reports and older, widely cited publications.

Parks are a huge asset, and we need to value them for the 21st century

Alison Benjamin

Our green spaces are shrinking, despite all the benefits they give us. If we want to save them, we need to value the ecosystem and health and wellbeing services they offer



Angel Meadow park, Manchester. Many small but vital 'green lungs' are being lost to development. Photograph:

THE TIMES

Newcastle uses public health cash to save city parks

Jon Ungoed-Thomas

February 26 2017, 12:01am, The Sunday Times

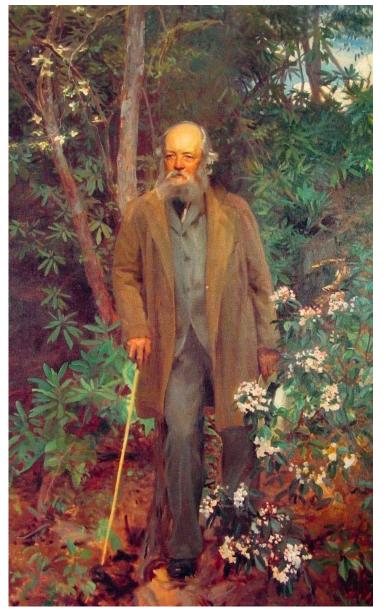


Leazes Park, Newcastle: the council says open spaces provide huge health benefits

Newcastle city council has become one of the first local authorities in Britain to use millions of pounds from its public health budget to help keep open its public parks.

The council says health budgets and NHS funds should be used to fund cash-strapped parks as such open spaces provide huge health benefits.

Precedent

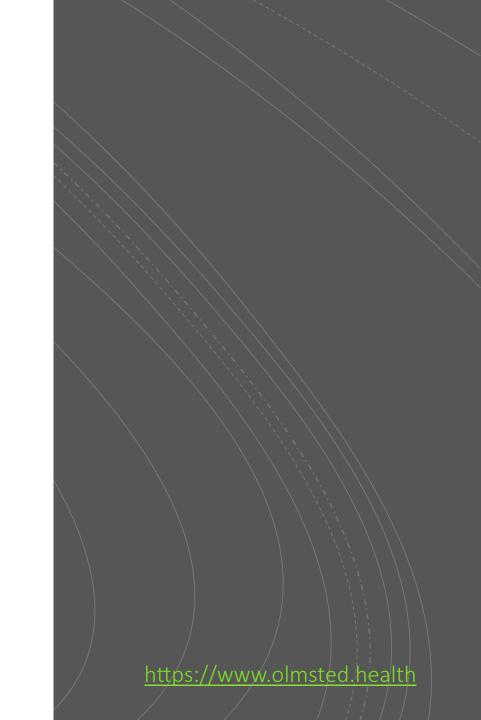




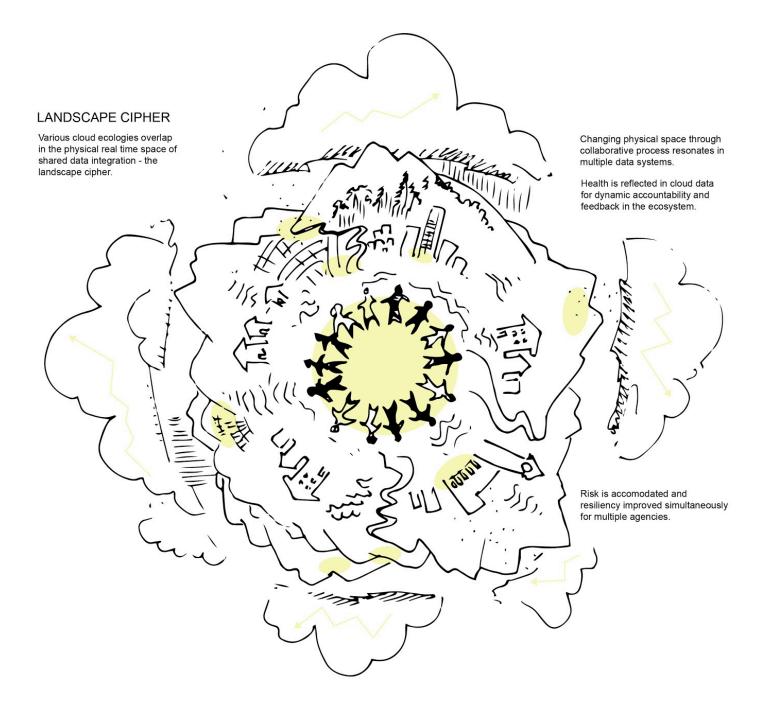


Smohalla

Olmsted.health



Stewardship



Accountability



ACO LANDSCAPE

(Accountable Care Organization)



Accountable care organization selects high risk individuals who act as network nodes to mine "streetcoin"



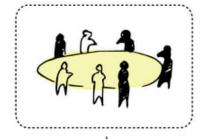
As landscape is changed, health is reflected in EHR data and valued in cost



HEALTHCARE BLOCKCHAIN STREETCOIN

DATA MINING CIPHER

Anonymous health record data integration black box

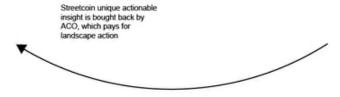




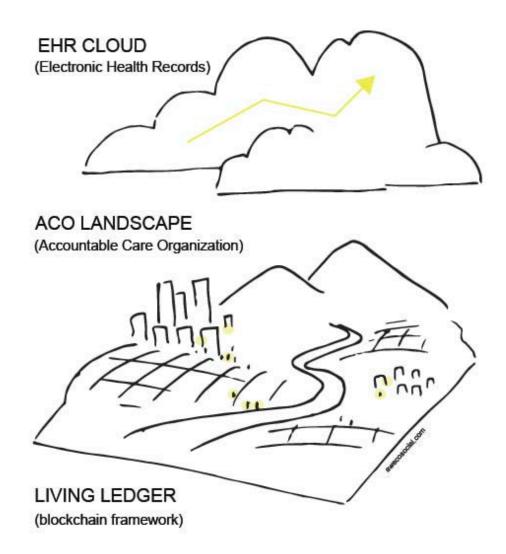
STREETCOIN Unique actionable insight

COIN MARKETPLACE

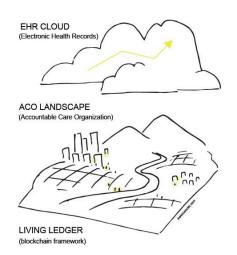
Landscape actions valued in cloud EHR data

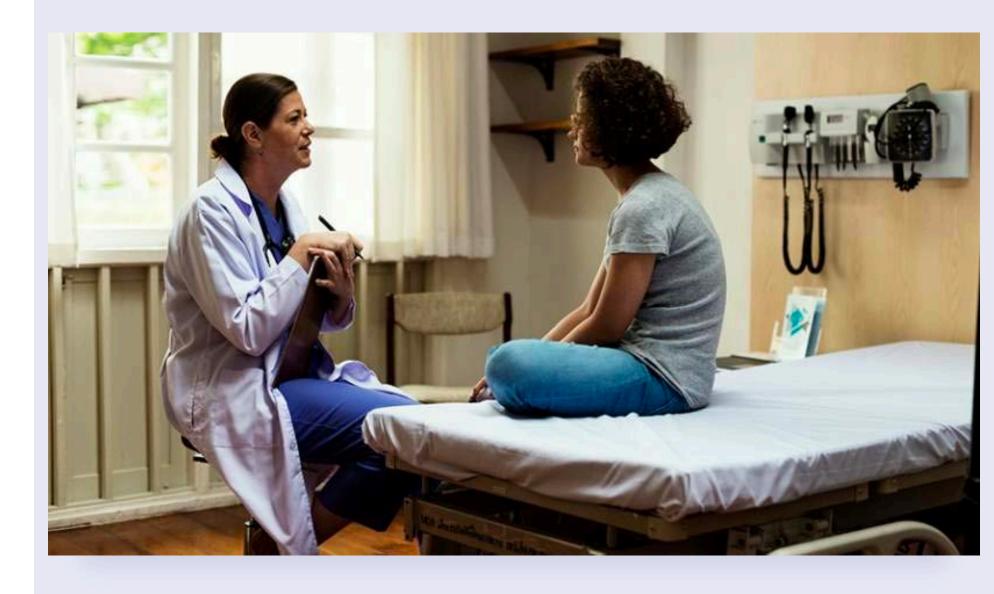


Healthcare EHR Clinician/Patient

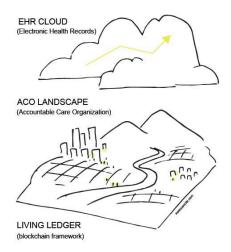


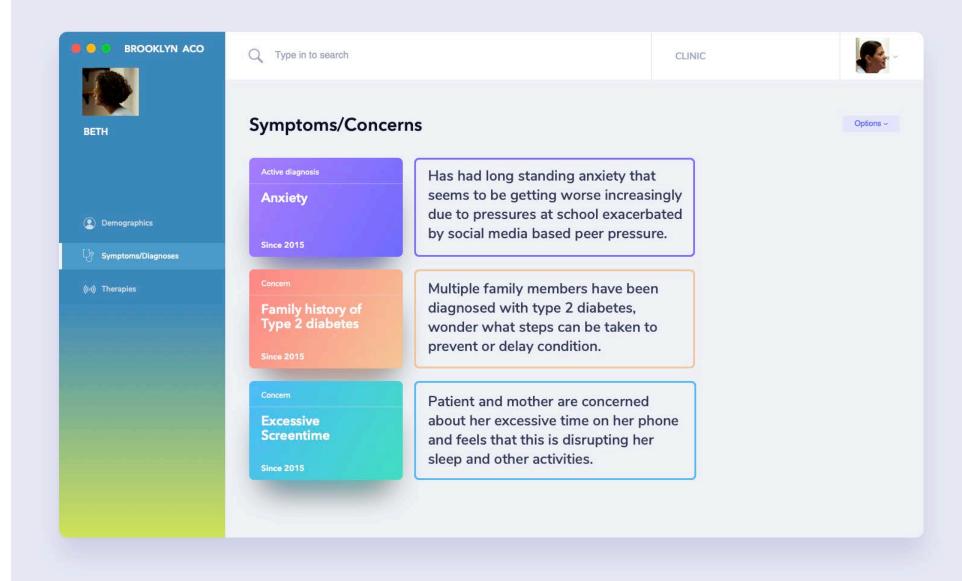
Patient – Clinician View



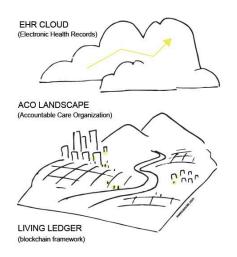


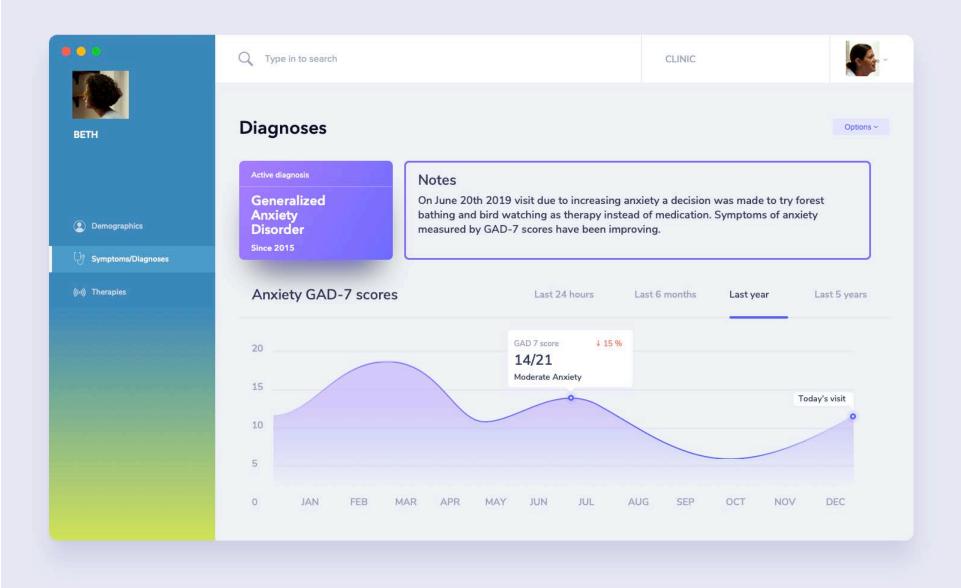
Physician view: patient story



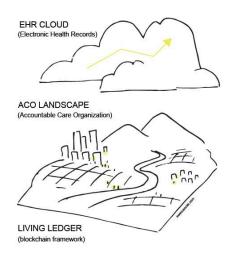


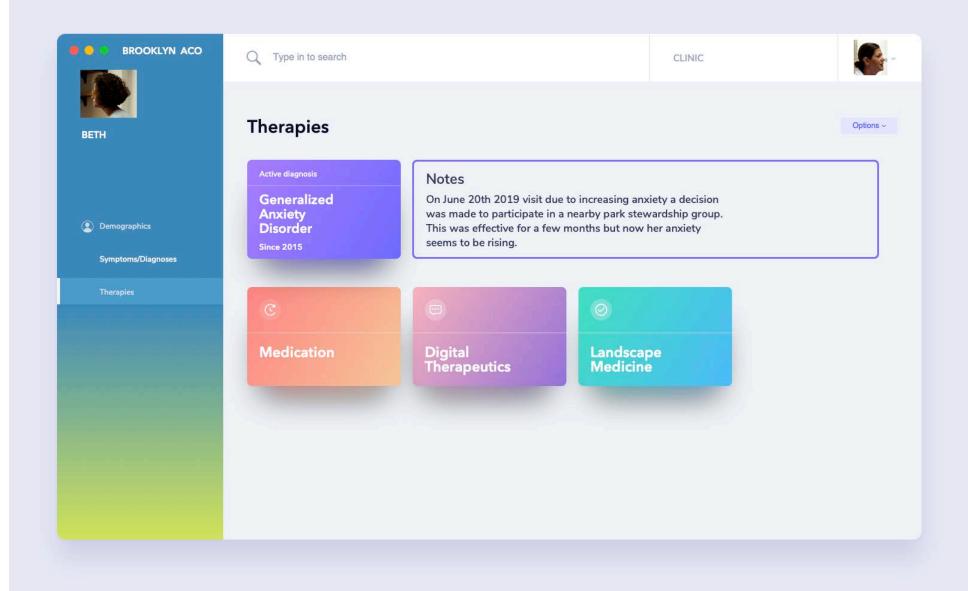
Monitoring patient condition over time



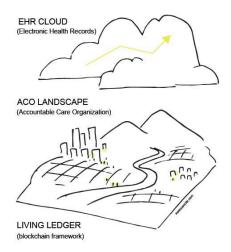


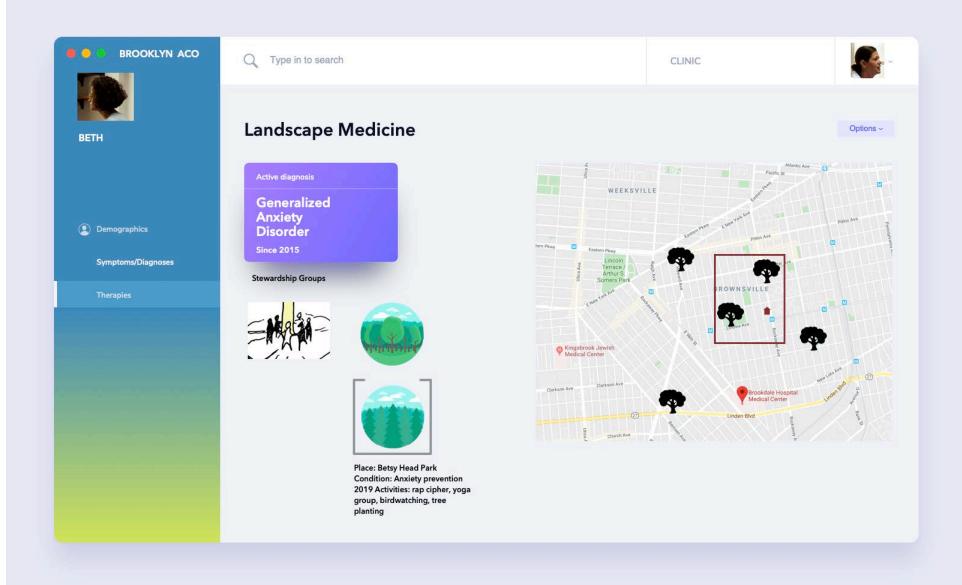
Physician view: therapy selection





Physician view: place selection

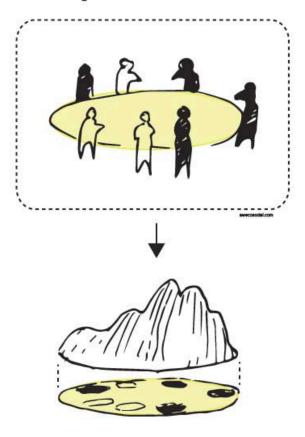




Stewardship group Landscape doctor

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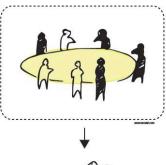
Anonymous health record data integration black box



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Landscape doctor – Stewardship group



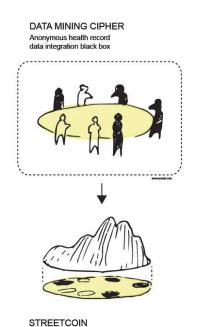




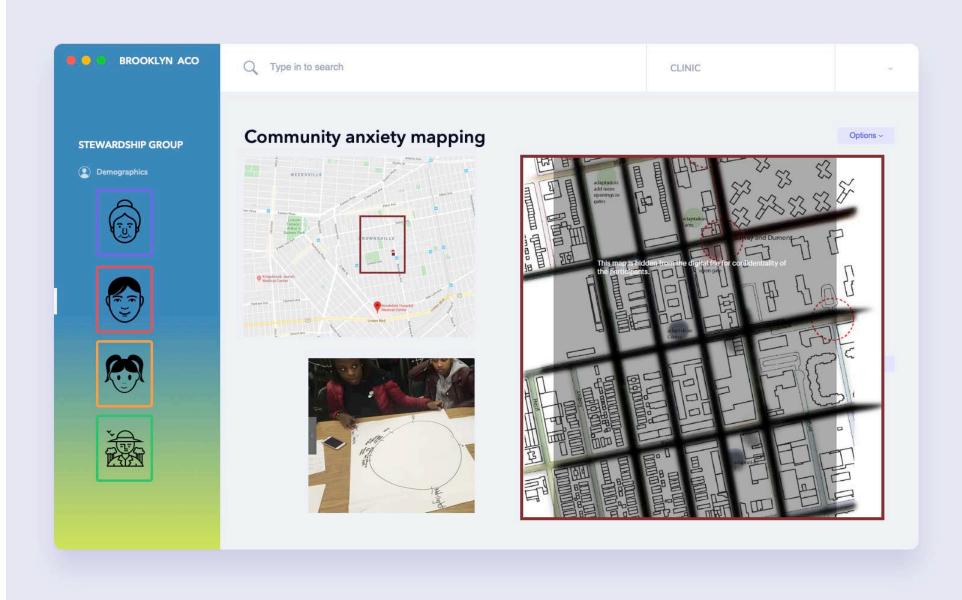
STREETCOIN Unique actionable insight



Landscape doctor view: Stewardship groups



Unique actionable insight



Olmsted.health:
Landscape
doctor –
stewardship
group



Olmsted.health: Landscape doctor – stewardship group



Streetcoin Accountable Care Organization



COIN MARKETPLACE

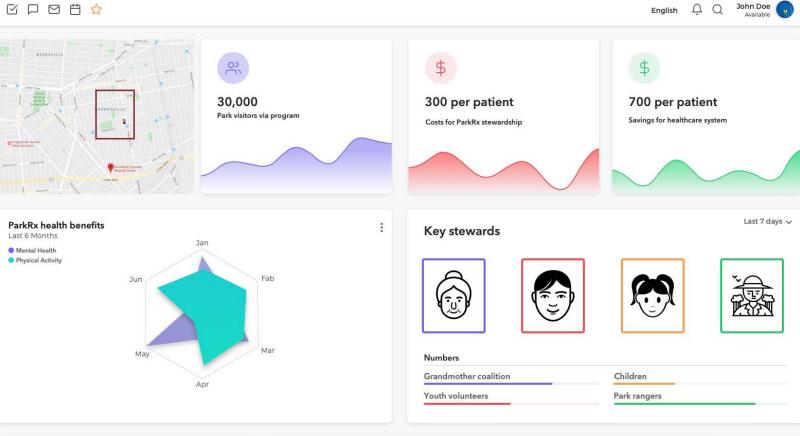
Landscape actions valued in cloud EHR data

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Accountable Care Organization view



COIN MARKETPLACE Landscape actions valued in cloud EHR data



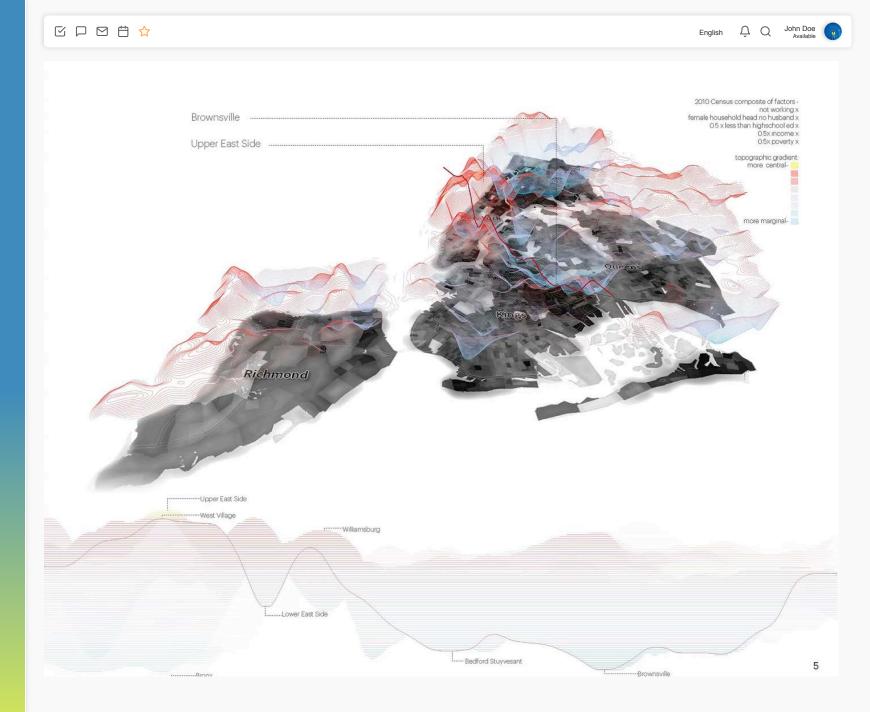




Accountable Care Organization view



COIN MARKETPLACE Landscape actions valued in cloud EHR data





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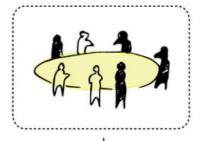
As landscape is changed, health is reflected in EHR data and valued in cost savings



HEALTHCARE BLOCKCHAIN STREETCOIN

DATA MINING CIPHER

Anonymous health record data integration black box





COIN MARKETPLACE

Landscape actions valued in cloud EHR data Streetcoin unique actionable insight is bought back by ACO, which pays for landscape action



STEWARDSHIP ACCOUNTABILITY PRECEDENT PEOPL

