MEDSTACK

Software-driven guaranteed data security for digital health
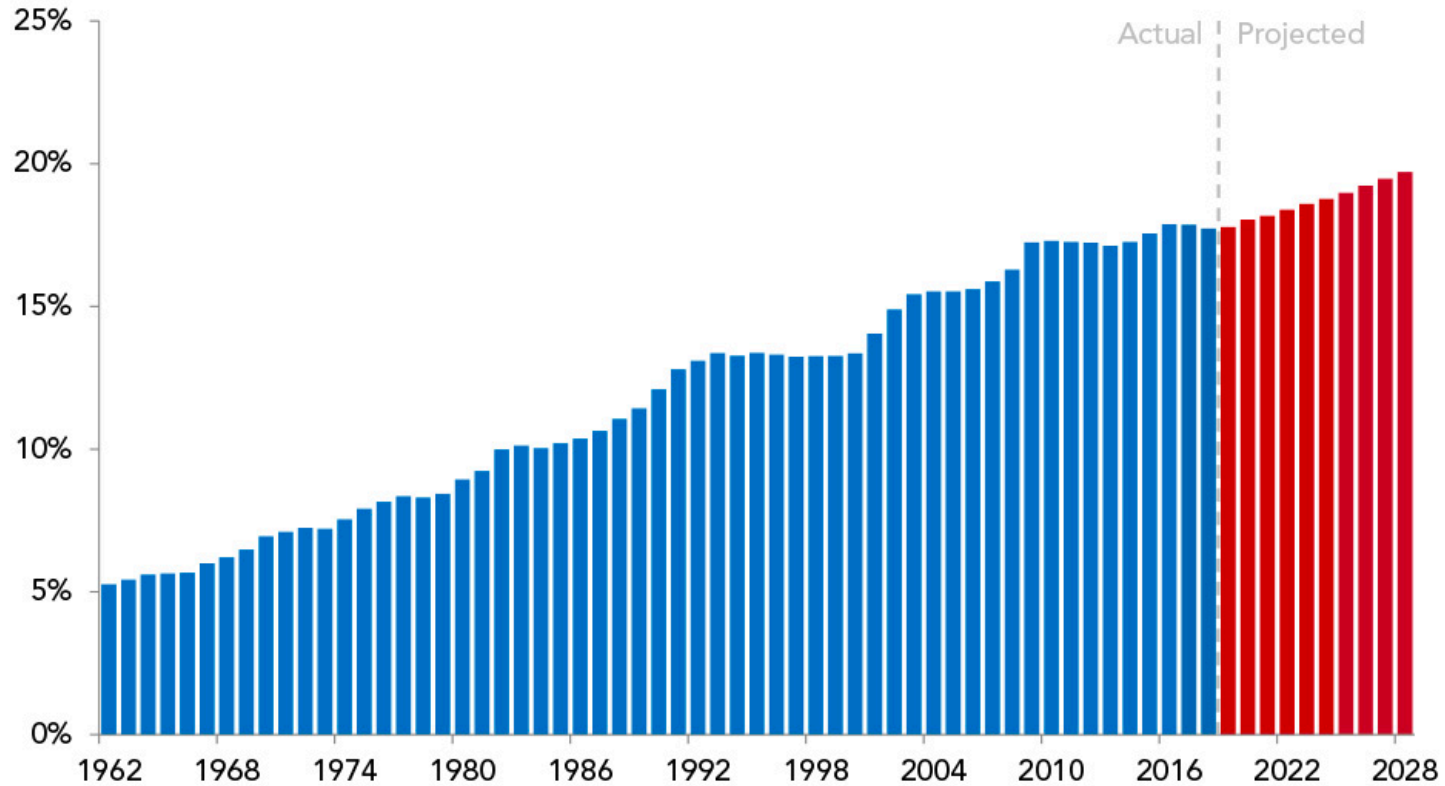
April 2021 | simon@medstack.co

MedStack is a **turnkey security and privacy compliance** solution that fast tracks the path-to-scale for digital health companies.

$2.5M thus far

US % share of GDP spent on healthcare

Sources: Centers for Medicare and Medicaid Services, 2020

And in Canada ...

National average healthcare wait times
grew > 2.5x
between 1993 and 2020

Healthcare spend is 11.6% of GDP,
a 4.2% increase per year,
and the second highest of all public healthcare nations

Sources: Fraser Institute, Effective Public Healthcare Panacea Project, 2020

Why do we need to scale digital health?

Chronic conditions drive **75% of healthcare spend** and pressure capacity with long-term patient engagements

Diagnostic errors and unnecessary test prescriptions may be traced back to a **lack of data and context**

The introduction of Electronic Health Records alone **has not improved the quality of patient care,** according to physicians

The treatment of chronic conditions is characterized by:

Long-term patient engagement

Complex, co-morbid symptoms

Coordination across care teams

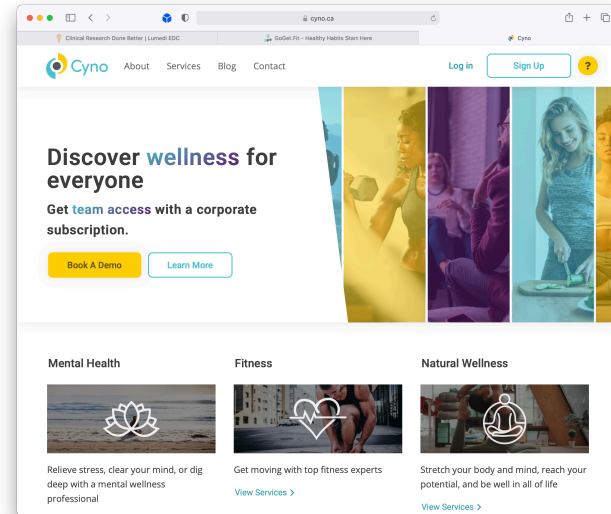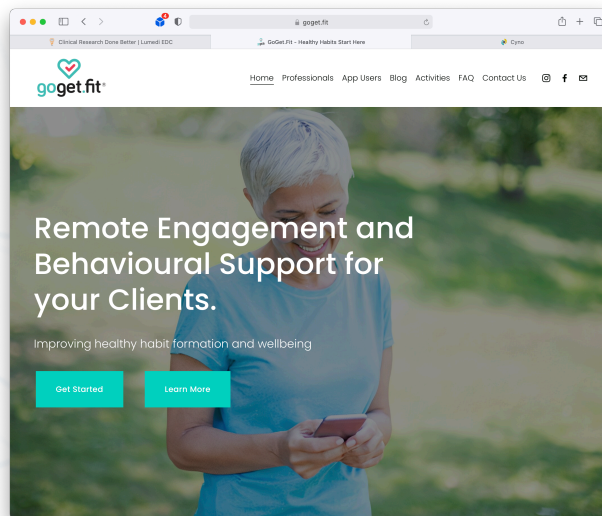Sources: CMS 2017, CDC 2016, Scripps Research 2019, MedScape 2016

Large ecosystem opportunity

A $1.3T market by 2025, growing 19% from 2020 and 31% in 2021 alone
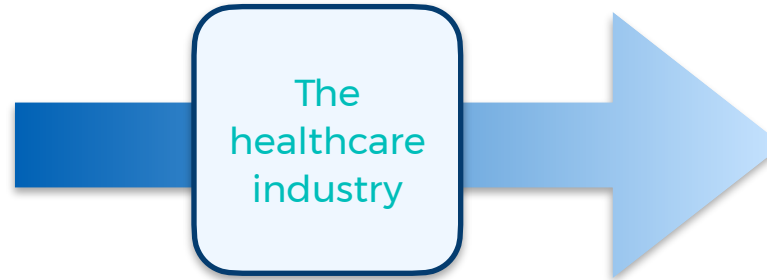
Powered by a record
440 venture deals in 2020, worth $14B
(almost 50% YoY growth)

And driving 2,314 exabytes of data, up 1400% since 2013

Sources: Research and Markets 2020, Rock Health 2020, Statista 2020, Crunchbase, Pitchbook 2021, a16z 2021

Here's the **challenge**

HIPAA

PIPEDA
The Personal Information Protection and Electronic Documents Act

NIST

AICPA SOC 2
Formerly SAS 70 Reports

ISO 27001

HITRUST®

GDPR

The healthcare industry

All vendors and solutions

Privacy compliance is a stack of requirements

[How is access granted / revoked? | How is access tracked / logged? | How is data protected?
How is data backed up? | What happens if there's a breach?]

|	
Administrative Policies	Employee training, HR policies, workstation and office security, password policies
Technical Safeguards	Encryption, network security, Internet proxy, intrusion detection, backups, audit logging, monitoring, admin account security
Physical Safeguards	Physical security, server isolations, disaster management

MedStack codifies, manages and guarantees 67% of the HIPAA Security Rule
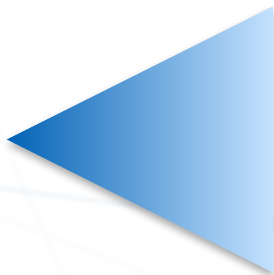
Administrative Policies

Technical Safeguards

Physical Safeguards

Search Keyword

Total: **849**

Results Per Page

ENCRYPTION OF DATA AT REST

★ ★ ★ ★ ★ | 🗂 30 | 📅 2020-12-22 | `backup` `cryptography` `curated` `data at rest` `encryption` ＞

See policy: Cryptography Section: Encrypt all data at rest Section: Use the best reasonably available c... vendor cryptographic methods and implementations

INFORMATION SECURITY INCIDENTS (POLICY)

★ ★ ★ ★ ★ | 🗂 28 | 📅 2021-01-18 | `curated` ＞

See policy: Information security incidents

SEGREGATION OF ENVIRONMENTS

★ ★ ★ ★ ★ | 🗂 28 | 📅 2020-12-22 | `curated` `Network security management` ＞

See policy: Network security management Section: Segregate the networks of each each customer usi... networks. Note: The MedStack customer is responsible for operating separate clusters for their separa...

ANTI-VIRUS, MALWARE AND ENDPOINT PROTECTION

★ ★ ★ ★ ★ | 🗂 26 | 📅 2021-01-18 | `curated` ＞

ISO 27001	MedStack
8.2 & 8.3 & A.18.2	Risk management
A.5	Documentation
A.6	Information Security
A.6.1.4 & A.7.2	Awareness, Training, and Reminders
A.6.2	Mobile devices and teleworking
A.7	Human resource security
A.7.2.3	Disciplinary process
A.8.1	Asset Management
A.8.2	Information classification
A.8.3	Media handling
A.9	Access control
A.9.4.5 & A.12.x & A.14.x & A.17.2 & A.18.1.2	Software development and operations
A.10.1	Cryptography
A.11.1	Secure areas
A.11.2	Workstation
A.12.2	Malware Protection
A.12.3	Backup
A.12.4	Logging and monitoring

BUG | 💬 TEAM CHAT ●

	County's systems and the CSP systems?	
11.	Has the CSP ever been involved in any security incidents or breaches? If so, please provide the date and cause of the incident, including related press releases and remediation processes.	

Section 3: Data Ownership, Retention, and Backu...

12.	Will the County retain all ownership and intellectual property rights of the data stored on the systems owned and maintained by the CSP?	
13.	Does the CSP reserve the right to use, disclose, make public, or share with 3rd parties any data entered or stored by the County on systems owned and maintained by the CSP?	
14.	What is default retention period of any data stored on the CSP's systems, and what is the process for modifying this retention period?	
15.	What is the backup method for any data stored with the CSP?	
16.	Do you utilize open encryption methodologies any time your infrastructure components need to communicate with each other via public networks (i.e. Internet-based replication of data from one environment to another)?	
17.	Does Howard County have the ability and right to move or transfer its data to another Cloud Service Provider at anytime?	
18.	Does Howard County have the ability to export its data? Please explain the various reporting capabilities available.	
19.	Does Howard County have the ability to permanently and securely delete all data,	

<> Code | Issues 19 | Pull requests 1 | Actions | Projects 0 | Wiki

Branch: master ▾ **compliance** / **policies** / **logging_and_monitoring.yml**

sbwoodside Merge pull request #25 from MedStack/hitrust-followup-2020-01

1 contributor

155 lines (141 sloc) | 6.79 KB

```
 1    ---
 2
 3    title: Logging and monitoring
 4
 5    Metadata:
 6      responsible officer: CTO
 7      date:
 8        effective: 2018-06-20
 9        revised: 2019-10-17
10        reviewed: 2018-06-20
11
12    References:
13      - code: ISO
14        section: A.12.4
15        title: Logging and monitoring
16        text: To record events and generate evidence.
17        _metadata:
18          maturity: 1
19          threat:
```

Encryption

Network
Security

Monitoring

Audit
Logging

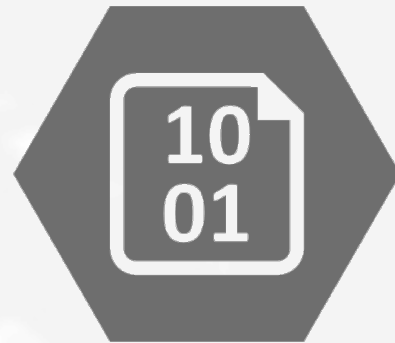Backups

Certificate & Key
Management

MedStack cloud infrastructure components

Anything that can be deployed to a Docker container

Managed scalable databases

File / object storage

Control

prod-canada

Region
Central Canada

Infrastructure provider
Azure

Hourly backups
Yes

Encryption at rest
Yes

Nodes
Compute resources operating in the Docker environment.

STATUS	SIZE	LABELS	CONTAINERS
⊘ Ready	Medium: 2 cores, 4 GiB	Manager	■ ■ ■ ■ ■ ■
⊘ Ready	Medium: 2 cores, 4 GiB	sessionHolder=true	■ ■ ■ ■ ■
⊘ Ready	Medium: 2 cores, 4 GiB	db=true	■ ■

Database servers
Database resources available to the cluster.

STATUS	DATABASE	CATEGORY	VCPUS	MEMORY (GIB)
⊘ Ready	PostgreSQL 9.5	Basic	1	2.0

the resource. Whether or not
`configs` , `volumes` ,
ts) are replaced entirely.

ny_id /clusters/

🔒 ⏻ Try It

ompany_YA

luster_b8QmP5Mk

ervice_jsmt5q6u9eyjntfzcsjgvqc

edis

cURL   Node   **Ruby**   JavaScript   Python

```ruby
require 'uri'
require 'net/http'
require 'openssl'

url = URI("https://dashboard.medstack.co/api/v1/company_id/clusters/cluster_id/services/service_id")

http = Net::HTTP.new(url.host, url.port)
http.use_ssl = true
http.verify_mode = OpenSSL::SSL::VERIFY_NONE

request = Net::HTTP::Put.new(url)
request["Accept"] = 'application/json'
request["Content-Type"] = 'application/json'

response = http.request(request)
puts response.read_body
```

● 201 Created   ● 400 Bad Request   ● 404 Not Found

● 500 Internal Server Error

```
{
    "id" : "string"
    "name" : "string"
    "image" : "string"
    "replicas" : 0
    "command" : "string"
    "args" : "string"
```

ANNUAL ⬤▭ MONTHLY

Choose the annual or monthly plan that's right for you. Infrastructure services and active security management are added on top.

STARTUP

$1,199 USD

+ infrastructure & security (20%) per month *

SAVE $3,600

GET IN TOUCH

SCALEUP

$2,399 USD

+ infrastructure & security (20%) per month *

SAVE $7,200

GET IN TOUCH

ENTERPRISE

Get in touch to discuss your company's unique requirements.

CONTACT SALES

COMPLIANCE

Real-time auditable policies	✓	✓	✓
Security assessments / questionnaires	1 per year	3 per year	✓
Evidence generation & SOC 2 audit support	✗	✓	✓

ADMINISTRATION

24/7 email support	✓	✓	✓
Sales and marketing support materials	✓	✓	✓
Number of seats	3	10	✓

@medstack | April 2021
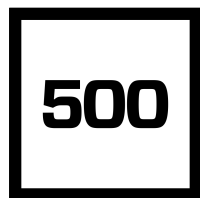
Strong **team** with expertise in security, digital health, compliance, DevOps, platforms, startups

MEDSTACK™

MedStack.co
info@medstack.co
877-371-7292
@medstack
linkedin.com/company/medstack

proudly supporting

FFC
Founders
for Change

upsidefoundation
SHARE THE UPSIDE