

Medical IoT for diabetes and cybercrime

Axelle Apvrille and Aamir Lakhani

Virus Bulletin, October 2019

Who are we?



Axelle Apvrille

Principal Security Researcher at
Fortinet, @cryptax
Mobile malware, IoT, **Ph0wn CTF**



Aamir Lakhani

Senior Security Strategist at **Fortinet**
Dr Chaos: www.drchaos.com
Cyber defense, Darknet, APT



Medical database leaks, Ransomware attacks
Ordinary people do not care - do not understand
what cybercriminals do with the data



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what cybercriminals do with the data



Vulnerabilities on medical devices
e.g CVE-2019-10950 X-ray & imaging products: *“insecure telnet services that lack authentication requirements”*
Regarded as “yet another hack”, “not a real threat”

Diabetes

What threats for a diabetic patient using **medical IoT**?

Flash Glucose Monitoring system

Diabetes Technol Ther. 2009 Jun; 11(Suppl 1): S-11–S-16.

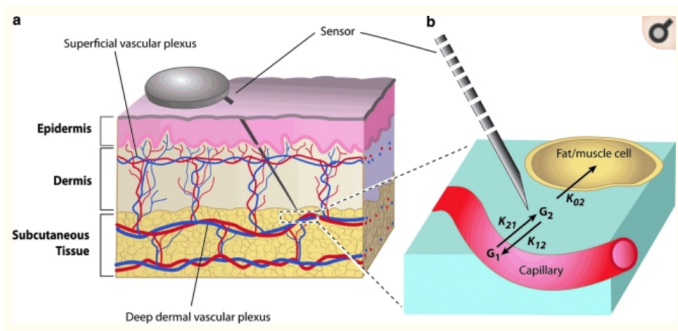
doi: [10.1089/dia.2009.0002](https://doi.org/10.1089/dia.2009.0002)

PMCID: PMC2903977

PMID: [19469670](https://pubmed.ncbi.nlm.nih.gov/19469670/)

A Tale of Two Compartments: Interstitial Versus Blood Glucose Monitoring

Eda Cengiz, M.D.[✉] and William V. Tamborlane, M.D.



That's me!

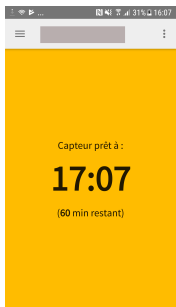
Screenshot from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2903977/>

Sensor life cycle

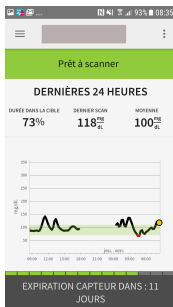
Assemble pack



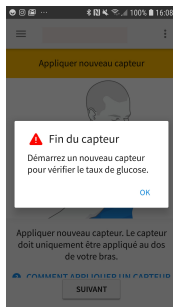
Apply sensor



Activate it (60 min)



Use it



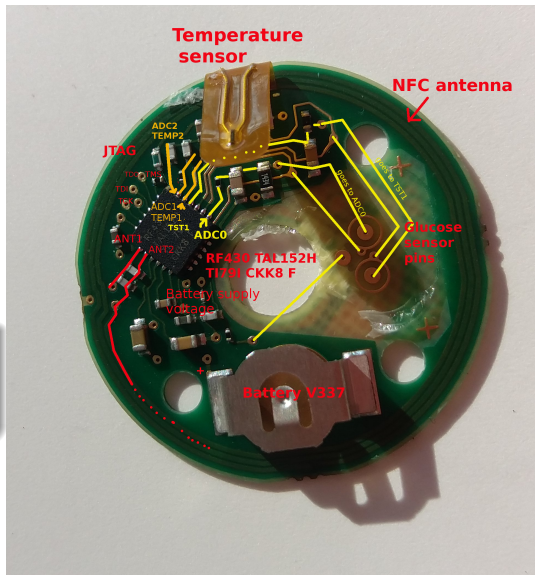
Expires after 14 days

Hardware

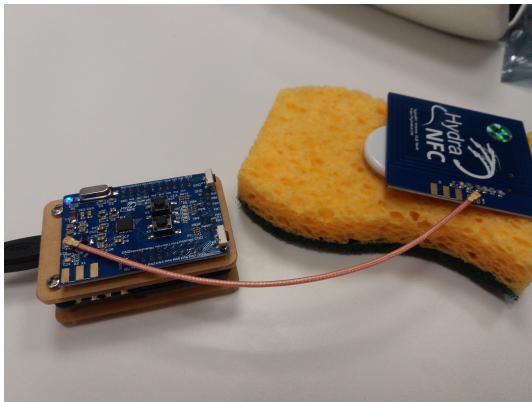
- Well designed
- Custom TI RF430 chip
- Low power consumption

Hardware attacks?

Unclear attack scenarios -
unless you are a VIP



NFC communication



A wet sponge with hot sugar replaces a human arm :)

- ISO 15693
- HydraBus NFC, Proxmark 3...
- Ferroelectric RAM with program code and user data
- **Anybody can read: no authentication**

Memory Map

```
Block 00 F4 18 B0 32 03 01 02 08
Block 01 00 00 00 00 00 00 00 00
Block 02 00 00 00 00 00 00 00 00
Block 03 E6 20 06 03 D2 02 C8 84
Block 04 A1 00 D0 02 C8 78 A1 00
Block 05 D0 02 C8 74 A1 00 D0 02
Block 06 C8 6C A1 00 CF 02 C8 6C
Block 07 61 00 CF 02 88 76 61 00
Block 08 E0 02 C8 A0 61 00 DE 02
.....
Block 0F C8 90 A1 00 1E 03 C8 68
Block 10 62 00 EC 02 C8 E8 61 00
Block 11 D7 02 C8 94 61 00 00 00
.....
Block 27 00 00 00 00 37 00 00 00
Block 28 BA 32 00 01 BA 32 00 01
```

Memory Map

Trend index
History index

Block 00	F4	18	B0	32	03	01	02	08
Block 01	00	00	00	00	00	00	00	00
Block 02	00	00	00	00	00	00	00	00
Block 03	E6	20	06	03	D2	02	C8	84
Block 04	A1	00	D0	02	C8	78	A1	00
Block 05	D0	02	C8	74	A1	00	D0	02
Block 06	C8	6C	A1	00	CF	02	C8	6C
Block 07	61	00	CF	02	88	76	61	00
Block 08	E0	02	C8	A0	61	00	DE	02
.....								
Block 0F	C8	90	A1	00	1E	03	C8	68
Block 10	62	00	EC	02	C8	E8	61	00
Block 11	D7	02	C8	94	61	00	00	00
.....								
Block 27	00	00	00	00	37	00	00	00
Block 28	BA	32	00	01	BA	32	00	01

Memory Map

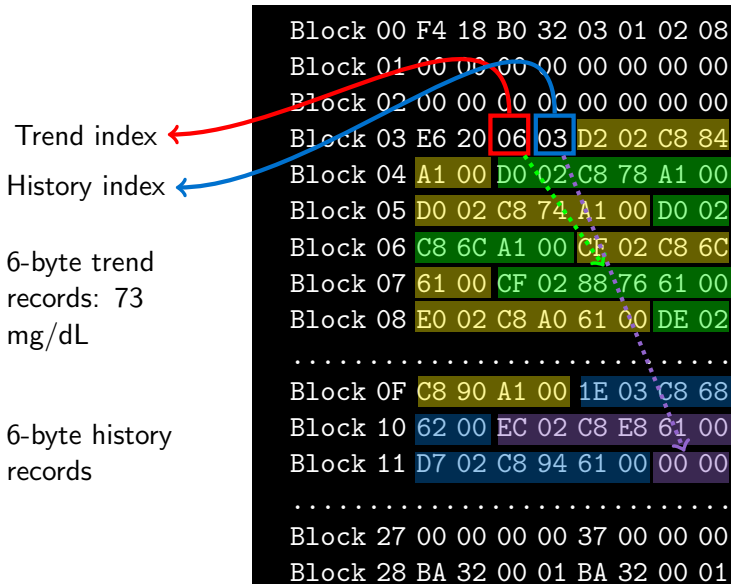
Trend index

History index

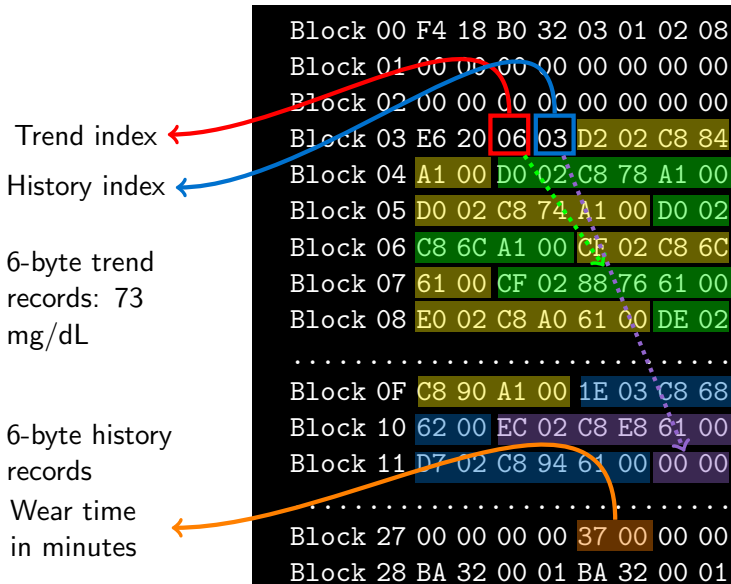
6-byte trend records: 73 mg/dL

Block 00	F4	18	B0	32	03	01	02	08
Block 01	00	00	00	00	00	00	00	00
Block 02	00	00	00	00	00	00	00	00
Block 03	E6	20	06	03	D2	02	C8	84
Block 04	A1	00	D0	02	C8	78	A1	00
Block 05	D0	02	C8	74	A1	00	D0	02
Block 06	C8	6C	A1	00	CF	02	C8	6C
Block 07	61	00	CF	02	88	76	61	00
Block 08	E0	02	C8	A0	61	00	DE	02
.....								
Block 0F	C8	90	A1	00	1E	03	C8	68
Block 10	62	00	EC	02	C8	E8	61	00
Block 11	D7	02	C8	94	61	00	00	00
.....								
Block 27	00	00	00	00	37	00	00	00
Block 28	BA	32	00	01	BA	32	00	01

Memory Map

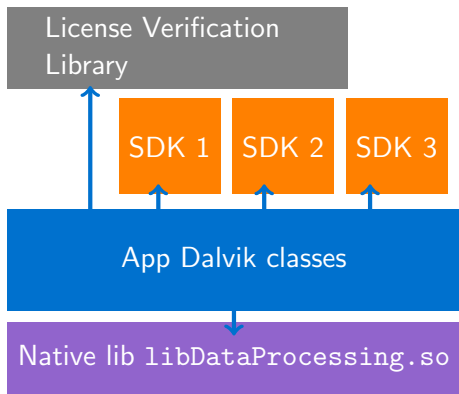


Memory Map



Mobile application

- **Well implemented**
- **Obfuscated** native library for key features: glucose measures, wear time
- More: check installs from Google Play, certificate pinning
- Several “useless” SDKs e.g `com.airbnb.lottie`, `com.evernote.android.job`
- Many **Open Source** alternatives



Mobile app: Firebase Analytics: a bit too nosy?

You click on a menu in the app?
It tracks it.

```
05-24 08:20:11.384 V/FA      (13108): Event recorded:
↳ Event{appId='com.*****', name='screen_view(_vs)',
↳ params=Bundle [{firebase_event_origin(_o)=auto,
↳ firebase_previous_class(_pc)=SplashActivity,
↳ firebase_previous_id(_pi)=-3985357911052850480,
↳ firebase_screen_class(_sc)=HomeActivity,
↳ firebase_screen_id(_si)=-3985357911052850479}]}
05-24 08:20:11.436 D/FA      (17498): Logging event (FE):
↳ SYS_UNEXPECTED, Bundle [{firebase_event_origin(_o)=app,
↳ firebase_screen_class(_sc)=HomeActivity,
↳ firebase_screen_id(_si)=-3985357911052850479}]
05-24 08:20:11.526 D/FA      (17498): Logging event (FE):
↳ user_engagement(_e), Bundle [{firebase_event_origin(_o)=auto,
↳ engagement_time_msec(_et)=290,
↳ firebase_screen_class(_sc)=HomeActivity,
↳ firebase_screen_id(_si)=-3985357911052850479}]
```

Threat summary



Hardware 



Event tracking in the mobile app



Sensor vulnerability currently under discussion



Reading the sensor













“Why would anyone target me? No interest!”

Corollary:

“Cybercriminals are not interested
in attacking a Diabetes app”

Often confused with - but different : “cybercriminals are not interested in my blood glucose level”

Malicious diabetes management apps

▼		Apr 28, 2018 8:21:31 AM - Android
▲		Signs of Diabetes (com.appman.signsofdiabetes) Detected Adware AirPush 56dda03b5326e9435e56c0378e0b05c51ed0a7989a54c301b058881c7cd13 Apr 22, 2018 3:41:50 PM - Android
▲		Signs of Diabetes (com.appman.signsofdiabetes) Detected Adware AirPush 26512a86b403978eabe968f611cc097a3b25c5e0030e1d5df9b0b16029930 Apr 21, 2018 3:34:23 PM - Android
▲		Signs of Diabetes (com.appman.signsofdiabetes) Detected Adware AirPush 91d9cedae03147f8ea5984cb324c05a291d0f45c7127b42547999362f46166e Apr 21, 2018 2:06:11 AM - Android
▲		Signs of Diabetes (com.appman.signsofdiabetes) Detected dbae980985479a2a911215ea728f44ca0c30bc7208563f0ce83b48f3cf3af Apr 16, 2018 3:08:30 AM - Android
▲		Diabetes Destroyer (com.wDiabetesDestroyer) Detected 67b7364cdf1433ec2b7db3143800fd3cd6e8180058228a507295ed9f0fa9f Mar 22, 2018 1:37:21 PM - Meyers Norma
▲		Diabetes - Glucose Diary 2.0.02 (fulledition.com.szyk.diabetes) Detected a38a594558e98472df75f6ae2cc2e611f8970a97df7f638abb3a827191b66e Dec 27, 2017 1:49:07 AM - ASDD
▲		Diabetic App.Guía Diabetes (com.mobincube.diabetic_appguia_diabetes.sc_HYLTBU) Detected 0137b909ef58cf050ac863a7631fdd2fe4acb75da0a66990cb464f861625 May 6, 2017 1:24:12 PM - Mobimonto Mobile
▲		DIABETES VIDA SANA (com.mobincube.consejos_de_salud.sc_3JGERJ) Detected efc283cedeb0540ac615099f1aab0cc62e72256af3c0ff32f5ab3f0d0951b3 Mar 17, 2017 5:23:47 PM - Mobimonto Mobile
▲		Diabetes Ke Upay (com.desitoteapp.DiabetesKeUpay) Detected Adware 76cd3e75af3a40f6cc0cbadca538cd3e79383d516aca84e539de51e10ea7b07

A few malicious apps we found

How long will I live?

Fill in the following form then click the button labeled "Calculate Life Expectancy". (We will try to guess the values you leave blank. So leave them blank if you think our guessing is better than yours. :-)

I am a smokes .

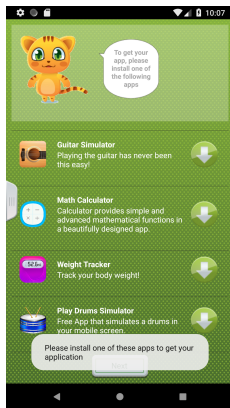
I am years old.

I a during the miles per year I travel in a car.

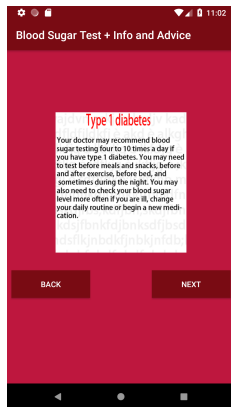
I exercise .

My home .

Form sent to remote server



Adkit prevents access to real app

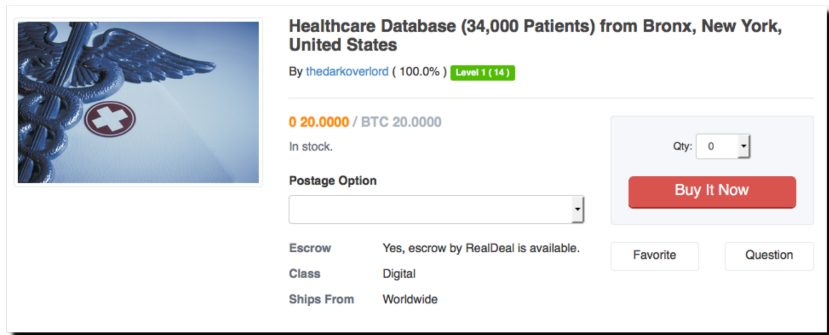


Ad and tracking installed apps, GPS, IP address etc

c70cdd58130419864b83cdc613f91fc440590a39b8873532444e54339e6958b5
a18a5594558e08472df75f6ae2cc2c61f1897f0a97df7fd38abba3827191b86e
34a605a3acbe4e090d2d5c9e308f0834062cce79f348cb7747d28ab49838dea0

The Darknet

Underground sale of medical records



Healthcare Database (34,000 Patients) from Bronx, New York, United States

By thedarkoverlord (100.0%) Level 1 (14)

0.200000 / BTC 20.0000

In stock.

Postage Option

Qty: 0

Buy It Now

Escrow Yes, escrow by RealDeal is available.

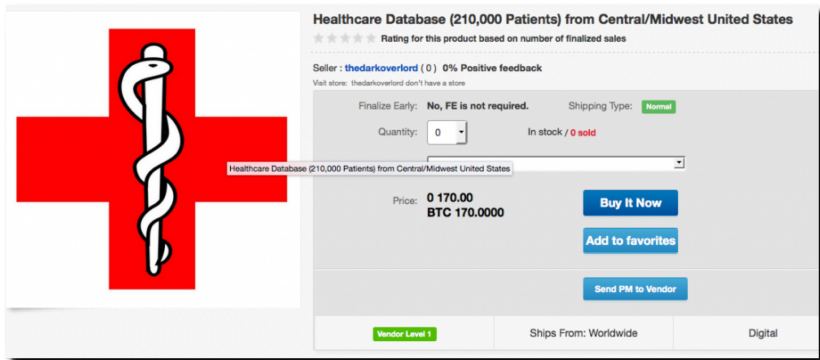
Class Digital

Ships From Worldwide

Favorite Question

Medical records sell high because they facilitate identity theft for bank accounts, loans, insurances...

Underground sale of medical records



The image shows a screenshot of an underground marketplace listing for medical records. On the left is a red cross with a white caduceus. The listing title is "Healthcare Database (210,000 Patients) from Central/Midwest United States". It has a 5-star rating and is sold by "thedarkoverlord" with 0% positive feedback. The price is 0.170.00 BTC (170,000). The listing includes buttons for "Buy It Now", "Add to favorites", and "Send PM to Vendor".

Healthcare Database (210,000 Patients) from Central/Midwest United States
☆☆☆☆☆ Rating for this product based on number of finalized sales

Seller: [thedarkoverlord](#) (0) 0% Positive feedback
Visit store: thedarkoverlord don't have a store

Finalize Early: **No, FE is not required.** Shipping Type: **Normal**

Quantity: In stock / 0 sold

Price: **0.170.00**
BTC 170.0000


[Buy It Now](#)
[Add to favorites](#)
[Send PM to Vendor](#)

Vendor Level 1 Ships From: Worldwide Digital

thedarkoverlord - known for focus on healthcare

Underground sale of medical records


100 QC FRESH PROFILES





Profile

Sold by: Monsta
Trust rating: High
Feedback score:100
[Contact Monsta](#)
[View Monsta's profile](#)

Buy now

500 CAD 

382 USD 

You are protected by **ESCROW** 

Product Description [Refund Policy](#) [Seller's Feedback](#)

100 QC (RANDOM CITIES) FRESH PROFILS [MIXED MALE/FEMALE] 20-100 YEARS OLD
FORMAT
FULL NAME
ADRESSE
SSN
DOB
HEALTH CARD
PHONE

Recent on the Canadian Headquarters - July 2019

Monsta with **234 positive feedback**

Very detailed medical records

The screenshot displays a comprehensive medical record interface. Key sections include:

- Demographics:** Patient information fields.
- Allergies:** Section for drug allergies, currently showing "No Known Drug Allergies".
- Encounter Time:** Table for recording patient encounters.
- User Defined Fields:** Custom data fields for the patient.
- Visits:** Table for tracking patient visits.
- Alert:** Section for patient alerts.
- Patient Comment:** Field for clinical notes.
- Orders/Results:** Table for medical orders and their results.
- Smoking Status:** Section for tracking smoking habits.
- Visit Type:** Table for recording different types of visits.
- Appointments:** Table for scheduling and tracking appointments.
- Medications:** Table for recording prescribed medications.

The interface also features a navigation bar at the bottom with tabs for various medical forms and a status bar at the very bottom showing the current encounter date and time.

Posted to show evidence and gain trust - by *thedarkoverlord* in October 2018

Underground sale for cheap medicine

Lantus SoloStar - Insulin - 100IU 10x3ml - Sanofi

+ Add Listing



Sold by pharmamed 2 5.00 Trust Level 1

FEATURES

Product class	Physical Package	Quantity left	Unlimited
Ships from	European Union		
Ships to	WorldWide		
Views	12	Visibility	Public
Ends In	Never	Payment	Escrow

Unit price: USD 149.60

0.01768093 BTC

Europe 3 Days - USD +11.51 / item

Buy Now

Maximum Quantity: Unlimited

Feedback

Buyer/Price

Date/Time

Rating

This product doesn't currently have any feedback.

Insulin supplement. Typical cost 400 USD.
On Nightmare, 149 USD. May 2019

Underground sale for cheap medicine

Humalog KwikPen - Insulin - 100IUx5x3ml - Lilly

+ Add Listing



Sold by pharmamed **2** **5.00** **Trust Level 1**

FEATURES

Product class	Physical Package	Quantity left	Unlimited
Ships from	European Union		
Ships to	WorldWide		
Views	13	Visibility	Public
Ends In	Never	Payment	Escrow

Unit price: USD 92.06

0.01088057 BTC

Europe 3 Days - USD +11.51 / item

Buy Now

Maximum Quantity: Unlimited

Feedback	Buyer/Price	Date/Time	Rating
----------	-------------	-----------	--------

This product doesn't currently have any feedback.

Bargain price for patients with no healthcare insurance. Fast acting insulin. Type 2 Diabetes. *DreamMarket*, January 2019

Underground sale for cheap medicine



Omnia Labs, Humalog-R 300iu Insulin Pen

51.63 EUR € 0.005701

29 In stock

Shipping options

Free if purchased on another item [0 EUR]

Vendor

[omnia labs](#) [+21]-0

Class

Physical

Escrow Type

Finalize Early

Ships From

Australia

Ships to

Worldwide

1 items sold since 2017-10-19 12:07:47

Favorite

Question

Report

Quantity:

Bitcoin (BTC)

Multisig COMING SOON

Buy Now

Details

Terms & Conditions

Feedback


Feedbacks

Feedback	From	Date	Price
a+ guaranteed. on time. efficient. the way business is meant to be done. will be back.	k***c [3]	2019-06-11 07:37:11 UTC	61.99 EUR


Product with positive feedback!
Berlusconi Market - July 2019

Lots of medicine for diabetes

invokana



Canagliflozin tablets 100 mg
Invokana 100 mg
3100 Tablets

@mrnadal 

Gold Account

↑ 1 M ↑ 5

Invokana is an oral medication for type 2 diabetes that helps to lower blood glucose levels by

150 - 290 USD Mail

Silk Roads 3.0, May 2019

Humulin NPH (Insulin)



- Payment methods: Western Union, MoneyGram, Bank (SWIFT) transfer, Bitcoin.
- Shipping methods: Airmail, EMS (available for certain products)
- Order to be made through website or via email
- Secure reshipment policy
- Product guarantee

Description Comments (0)

HUMULIN®

Lilly

Insulin, Human Biosynthetic
Antidiabetic Agent

Action And Clinical Pharmacology: Humulin is a polypeptide hormone consisting of a 21 amino acid A-chain and a 30 amino acid B-chain linked by two disulfide bonds.

Humulin is found to be chemically, physically, biologically and immunologically equivalent to pancreatic human insulin which differs slightly from porcine or bovine insulin in amino acid composition.

Studies indicate immunogenicity problems with biosynthetic human insulin (BH) produced by recombinant DNA technology are less likely than with insulin derived from animal origin. Biosynthetic human insulin is devoid of all protein contaminants of pancreatic origin normally present in trace amounts in all insulins of pancreatic origin. The purification procedures used in the manufacture of biosynthetic human insulin result in a product which contains an insufficient quantity of *E. coli* polypeptides to be antigenic in deliberately sensitized animals. No antibodies to *E. coli* polypeptides have been detected in specifically designed radioimmunoassay methods examining patient serum samples.

The administration of suitable doses of insulin to patients with diabetes mellitus, along with controlled diet and exercise, temporarily restores their ability to metabolize carbohydrates, fats and proteins;

Company: Lilly (France)

Usage: peptides

5 Cartridges x
3ml [100
IU/ml.] Total
1500IU

Price: **65\$**

brands: TOP PHARMA
GRADE
PRODUCTS

type (oral/injectable): PEPTIDES

Antidiabetic Agent

Rate: Not rated

BB Pro, June 2019

What quality? Willing to take the risk?



Metford 500 Glucophage (Metformin 500mg), 10 pills

4.02 EUR @ 0.00437

[View item](#)

Shipping options

Express shipping with tracking (12.85 EUR)

Vendor

Class

Escrow Type

Ships Free

Ships to

1 item sold since 2019-06-20 17:30:16

Details (118)

Physical

Full escrow

Unspecified

MultiState

Favorite Question Report

Quantity: 1

Buy Now



Berlusconi Market, July 2019

Pregabalin, in a box, on Tochka - July 2019

5 - 800mg Gabapentin Pills TEVA



0.00673

\$24,388

Vendor [fatassgbs123 \(720\) \(4.85\)](#)

Ships to United States, United States

Ships from United States

Escrow Yes

View offer

1kg. Pregabalin (Lyrica) powder

Vendor: [codicator](#)

High quality product, over 98%

Pregabalin (Lyrica) CAS 149555-50-8

Pregabalin is used to treat pain caused by nerve damage due to diabetes or to shingles (herpes zoster) infection. It may also be used to treat nerve pain caused by spinal cord injury. This medication is also used to treat pain in people with fibromyalgia.

It's also selling in the following markets:

Empire
Berlusconi market
Cypriotia
Nightmare

Shipping from China with track / net signature

We have GREAT SHIPPING SUCCESS RATE to EU, US, AUS, NZ, Canada and Russia, almost 100%.




Dream Market, Jan 2019. Beware side effects: suicide, cancer, abuse, addiction...

Pregabalin powder, on Agartha - July 2019. Risks?!

Forged Health Cards

Health card scans, old items, forged cards: prices vary

Old health card qc



Sold by: 418masterid
Trust rating: Unproven
Feedback score: 0
[Contact 418masterid](#)
[View 418masterid's profile](#)

Buy now

150 CAD

114 USD


You are protected by ESCROW

Product Description Refund Policy Seller's Feedback

Old qc health card ramq shyning
24h free shipping

Quebec

Ontario Health Card (V1.0)



Sold by: mortifiedmonoxide
Trust rating: High
Feedback score: 100
[Contact mortifiedmonoxide](#)
[View mortifiedmonoxide's profile](#)

Buy now

200 CAD

154 USD

You are protected by ESCROW

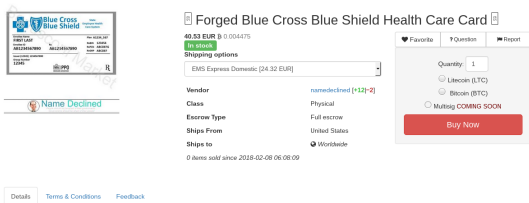
Product Description Refund Policy Seller's Feedback

A1 Ontario health card
medical card
600 dpi (double resolution than current market ids)
pvc
Trio available with ON dl and sin

Ontario

Canadian Headquarters, July 2019

Forged Health Cards



Forged Blue Cross Blue Shield Health Care Card

40.53 EUR 0.004475

In stock

Shipping options

EMS Express Domestic (24.32 EUR)

Vendor: [namedeined](#) (+12*2)

Class: Physical

Escrow Type: Full escrow

Ships From: United States

Ships to: Worldwide

0 items sold since 2018-02-06 06:08:09

Quantity: 1

Litecoin (LTC)

Bitcoin (BTC)

MultiSig COMING SOON

Buy Now

Details Terms & Conditions Feedback

Details

This listing is for a forged Blue Cross Blue Shield health insurance card / proof of insurance card. These cards are printed double sided and are plastic heat laminated cards. They are waterproof and you will get two cards with the order; both cards will be identical and the second is just a spare or back up in case the first is lost, stolen, damaged, has a defect or is ceased. The back of the card will scan with all the proper info so if real info is used it will show up in the system, or even smart phone applications may be used to scan and read the back of it. These are used to provide proof that you have health insurance in the United States (BCBS may exist outside the US and can be forged to be used outside the US). This item works very well as a back up form of ID to pair with a fake drivers license or fake passport or even one of my forged drivers license, social security cards, auto insurance cards, or school IDs. When using a fake ID or assuming a fake identity it is best to not have a wallet that has simply cash and a fake drivers license only. Having a forged health care card and other forged IDs of mine along with maybe a prepaid debit card from your local store sell your cover identity. If your fake ID is questioned this can be pulled out to back it up and eliminate any question, it may save you. In addition it may be used as a secondary form of ID to open up a PO box under a fake identity and fake info. Keep in mind that the post office does not cross check the info you provide them when opening a PO box they merely take down the info that they view on your IDs and log it in the computer. They do not have the power to access BCBS databases to verify nor do they verify any of the info. If say by chance you are able to steal info about a real BCBS insurance policy you may use that info and get a fake from me and use that policy and assume that persons policy, possibly even get a few visits covered before they catch on.

Prior to forging this fake I obtained scans of a few BCBS cards as well as a few real ones. What I found is the cards vary year to year of issue and vary if issue by a 3rd party authorized insurance reseller. So if you have a real BCBS card and it varies from the one I have provided in the picture and use as a template it does not mean that mine will not pass or that mine is useless. I simply took the best looking one and used that layout. Just like Social Security cards change every decade, but never expire these will still be accepted and still can be used and have nothing to worry about as all my forgeries have always passed and are of the highest quality as my reviews and mass amount of orders being placed will verify.

Below is the order form / information needed to make the card. If you have info of yours to provide or real info you wish to use then fill it all in, but if you do not then simply make up a number that fits the proper amount of digits and format with spaces, letters, and all symbols included. IF YOU DO NOT FILL OUT THE INFO PROPERLY YOUR ORDER MAY BE CANCELED. Make sure all letters excluding the ship to address are in all uppercase. You are responsible to generate random numbers if you do not have ones to provide.

1. Name to be on Card: FIRST LAST
2. Enrollee ID: AB1234567890
3. Rx ID: AB1234567890
4. Issuer: (12345) 1234567890
5. Group Number: 12345

Forged printed double-sided plastic Blue Cross Blue Shield card.
For sale on Berlusconi Market, July 2019

Other items: day off, prescriptions etc



★★ DOCTORS NOTES PACK ★★

4.28 EUR 0.000478

In stock

Vendor

BlgDawgScott [+1|-0]

Class

Digital

Escrow Type

Full escrow

0 items sold since 2019-04-17 18:38:03

♥ Favorite	? Question	🗉 Report
Quantity: <input type="text" value="1"/>		
<input type="radio"/> Litecoin (LTC)		
<input type="radio"/> Bitcoin (BTC)		
<input type="radio"/> Monero (XMR)		
<input type="radio"/> Multisig COMING SOON		
<input type="button" value="Buy Now"/>		

Details

Terms & Conditions

Feedback

Details

Hi!


Need the day off work/school?

This pack has a HUGE variety of signed doctors notes.


Forged pack of a variety of doctors notes. Take the day off ;-)
Alibis etc. For sale on Berlusconi Market, July 2019.

Other items: day off, prescriptions etc

Forged Kaiser Permanente Pharmacy Receipt



Sold by namedeclined **8** **5.00** **Trust Level 1**

Verified vendor  **Dream Market : Sales: 1650, Rating: 4.88**

FEATURES

Product class	Digital Product	Quantity left	Unlimited
Views	58	Visibility	Public
Ends In	Never	Payment	Escrow

Total Purchase Price : USD 26

Shipping : Digital Delivery 1 Days - USD +0 / item

[Buy Now](#)

Forged pharmacy receipts. On Nightmare, July 2019.

Other items: day off, prescriptions etc



Forged Rowland Pharmacy Prescription Rx Labels - 1 Year Supply

81.05 EUR 0.009048

In stock

Shipping options

EMS Express Domestic [24.32 EUR]

Vendor

namedeclined [+12]-2

Class

Physical

Eserow Type

Full escrow

Ships From

United States

Ships to

Worldwide

0 items sold since 2018-02-08 07:08:54

Favorite Question Report

Quantity:

Litecoin (LTC)

Bitcoin (BTC)

Multisig COMING SOON

Buy Now

Forged UK pharmacy prescriptions. On Berlusconi Market - July 2019.

Cheap diabetic treatments underground,
but with **uncertain quality**

Cheap diabetic treatments underground,
but with **uncertain quality**

Cybercriminals do not care if you have **diabetes**,
but **they make money out of it**

Cheap diabetic treatments underground,
but with **uncertain quality**

Cybercriminals do not care if you have **diabetes**,
but **they make money out of it**

Your smartphone may get infected. **Be extra cautious if you
use it for medical purposes!**

Contacts: aapvrille or alakhani (at) fortinet (dot) com

Thanks to

Anonymous diabetic contacts :) and
@travisgoodspeed @PagetPhil @TuxDePoinssise @aurelsec @trufae
@_j3lena_ @Baldanos @r00tbsd @doegox @herrmann1001

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