

## Individual Assignment

### TOPIC: LifeLabs 2019

#### ● Introduction

LifeLabs, a community lab services provider which performing more than 100 million lab tests annually serving 19 million patients in Canada (Wikipedia, 2022). This lab was built and started to provide services 50 years ago. What is more, LifeLabs is indirectly owned by OMERS which is a Canadian public pension fund.

With this website, users can make an appointment of having a test to their body in order to diagnose, treat, monitor and prevent diseases.

While making the appointment here, LifeLabs requires some personal information including health insurance card, name, date of birth, address etc. After the test, patients can see the results include COVID-19, infections, oncology (basic tests); genetic tests; naturopathic tests and also heart monitoring.

#### ● Incident

However, in the late October 2019, up to 15-million Canadians hit by Lifelabs data breach, patients' personal information and lab test results were under the control of hackers.

In this incident, hackers get the access to the personal information includes:

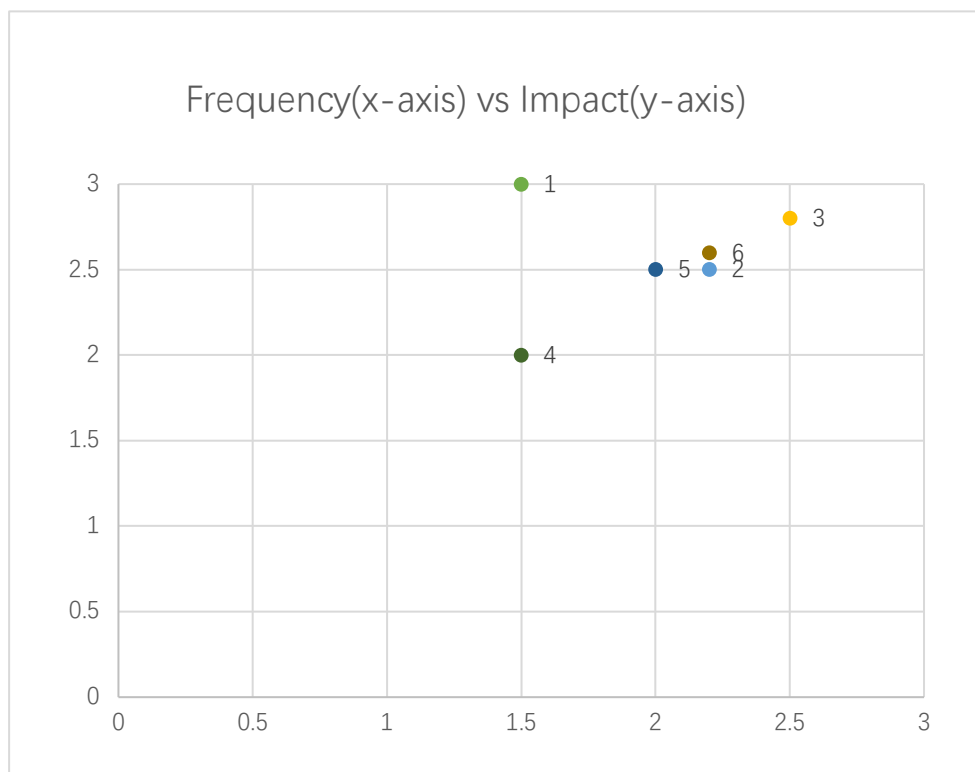
1. Names & Address;
2. Email;
3. Logins & Passwords;
4. Health Card Numbers;
5. Lab Test Results;

According to their staff, the date of the first breach is in 2016 or even earlier, and at that time, the hackers have obtained the medical test results of 85,000 people. And also, the company said they paid an undisclosed money(ransom) for getting the data back without being published by hackers. Luckily, this incident did not give a high risk to customers private information and no public disclosure on the website or somewhere else. (FANOUS, 2019)

## ● Factors lead to the breach

1. Non-encrypted data; (in 2019, when journalist had an interview with the CEO of LifeLabs, he even not sure if they encrypted user's personal information while store them in the database). (Brown, 2019)
2. Awareness of protect data containers; (One hard drive held the result of ECGs, or electrocardiograms, gathered at three local facilities between 2007 and 2013 and which contained the personal information about 16,000 patients has gone missing in 2013.) (The Canadian Press, 2013)
3. Weakness of the database; (According to the cybersecurity specialist's speech) (CAVOUKIAN, 2019)
4. Store too big scale of information in the same database;
5. Weakness of the firewalls; (According to the cybersecurity specialist's speech) (CAVOUKIAN, 2019)
6. Insufficient Data Breach Response.

The frequency and impact of risks are analyzed in the followed photo:



## ● Solutions:

For encrypt data:

1. Build the awareness of encryption personal information;
2. Use suitable methods to encrypt data (in this case, they can consider Hash function to encrypt and then store data).

For build the awareness of protecting data:

1. Keep the data system have guards and care, and try not to let it out of the office building.

For the database:

1. Strengthen the database by:
  - a) Make at least two or three private passwords to the database;
  - b) Implement higher encryption protocols to lower the possibility of data being sealed off;
2. One system can contain several databases and can save equally amount of data in different databases, this can effectively avoid have a too big scale of data breach.

For the firewalls:

1. Build stronger firewalls, to prevent others easily access to the intrasystem.

For the response of data breach:

1. Company should set up the reminder once their system or database is being attacked.

For other suggestions:

1. Hire and build an expert team to ensure the system is safe enough;
2. Do regular risk control of data, data memory and system itself.

## Bibliography:

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- CAVOUKIAN, D. (2019, 12 18). LifeLabs data breach. (T. YAZDANI, Interviewer)
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