

Menstrual Metrics

An Analysis of Privacy and Security in Menstrual Health Tracking Applications

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Introduction

I completed research on the privacy and security measures of smartphone apps and wearable computing that track menstrual health.

Why did I do it?

1. Personal curiosity and concern; I use one!
2. Clarity; data management by apps is largely unknown and misunderstood²
3. Reproductive and menstrual health needs to be talked about aka feminism

How did I do it?

I looked at two smartphone apps and one app-wearable device combo: Clue, Glow, and LEAF.

Questions asked:

- What security measures are in place?
- What are they telling their users?
- What details are shared or omitted?
- What are the consequences?

Legislation

Legislation regarding personal health data depends on the geographic location of the server that stores the information.

- *PIPEDA*
- *Digital Privacy Act* amendments
- Provincial legislation
eg: Ontario's *PHIPA*, Alberta's *PIPA*
- Legislation per country and between members of European Union
- Effects of Brexit unknown
- Privacy legislation at state level with a patchwork understanding and application⁷
- *HIPAA* does not apply to devices not administered by a physician or hospital⁸



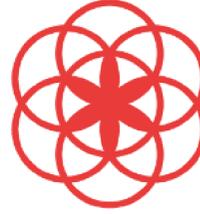
US Supreme Court rulings (1976, 1979) set precedent that there is "no legitimate expectation of privacy in information that is voluntarily turn[ed] over to third parties."⁹

Informed consent is VITAL.

Summary For Developers:

- Provide a copy of privacy policies and Terms of Service in language that is clear and accessible.
- Ask for access to specific data or smartphone functions on an as-needed basis and explain how it affects the app's use.

App Analysis



Clue³

- + stores health data separate from identifiers
- + encrypted transmission from app to server
- + authentication & remote erasure
- +/- synchs data with FitBit
- +/- shares (anonymized) data with third parties



Glow⁴

- + firewalls & data encryption
- auto acceptance of policy
- retains personal & financial info even if account is deleted
- data shared with unspecified third parties
- data breach in 2016⁵



LEAF⁶

- + outlines user rights
- unclear policy application
- data shared with unspecified third parties
- users must consent to data being transferred outside of their country

Privacy Policies

App stores don't require developers to include a privacy policy or provide one in accessible language. In one study 32% of health apps didn't provide either option.¹⁰

Users do not read these policies and are not aware of what happens with their data. This is not informed consent.



92% of health tracking apps use unencrypted data storage.¹¹



24% of health tracking apps transmit personal data without informing the user.¹²



An estimated 1.5 billion people will be using health tracking apps or devices by 2018.¹³



Personal data cannot be copyrighted because it consists of facts, not creations or expressions.¹⁴

Summary For Users:

- Learn how to read privacy policies and Terms of Service.
- Read through app prompts before accepting them.
- Look up security protections in place within apps.
- Email an app developers for clarification on policies that explain exactly how personal data is going to be used
- Be proactive and learn more about your personal digital security.

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