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Using Mobile Apps to Reduce Transfusion Complications

Georgia Health Policy Center

REdHHoTT Program Brief

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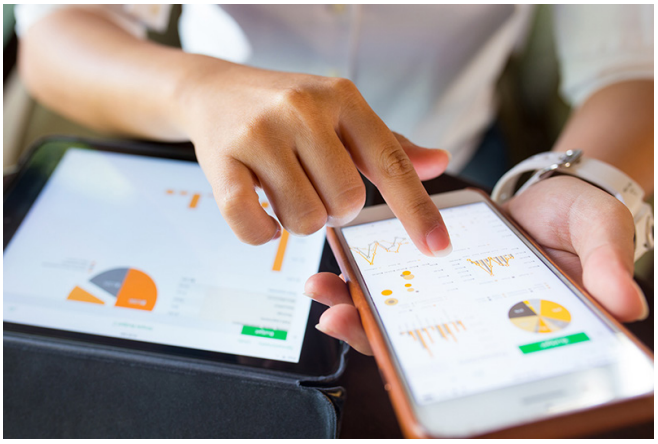
Using Mobile Apps to Reduce Transfusion Complications

Blood transfusions are one form of treatment for sickle cell disease (SCD) and thalassemia. While transfusions may be lifesaving, there are risks of complications. This risk is higher when a complete patient transfusion history, including a history of antibodies developed in response to previous blood transfusions, is not available to providers.[1,2]

Use of mobile applications that are able to track blood transfusions for patients with SCD and thalassemia may reduce transfusion-related complications, as in the case of intermittent transfusions to treat acute crises or other urgent, symptomatic episodes. Georgia REdHHoTT reviewed available mobile apps that may aid patients with providing their transfusion histories when they present for care at providers other than their known specialist.



Methods

An initial Google search to identify apps used the keywords *sickle cell apps*, *thalassemia apps*, and *health tracking apps*. Additionally, the websites OneSCDvoice.com and Thalassemia.org were used to find patient support organizations' webpages and social media handles. Websites and open forums of these organizations were searched for user comments regarding mobile apps. A national consortium of sickle cell organizations asked members about apps' pros and cons and shared their responses with REdHHoTT.

REdHHoTT also contacted key stakeholders via email and phone to identify additional apps. These stakeholders included those who participated in the 2017 Sickle Cell Data Collection convening in Georgia who reported having or caring for a family member with sickle cell disease, as well as local and national advocacy organizations.

Results

The search identified 11 mobile applications that could be used by people with hemoglobin disorders in order to improve provision of information about transfusion history. Features relevant to patients and providers were compared across the identified apps based on website descriptions.

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[1] Harm, S. K., Yazer, M. H., Monis, G. F., Triulzi, D. J., AuBuchon, J. P., & Delaney, M. (2014). A centralized recipient database enhances the serologic safety of RBC transfusions for patients with sickle cell disease. American Journal of Clinical Pathology, 141(2), 256-261.

[2] Delaney, M., Dinwiddie, S., Nester, T. N., & Aubuchon, J. A. (2013). The immunohematologic and patient safety benefits of a centralized transfusion database. Transfusion, 53, 771-776.

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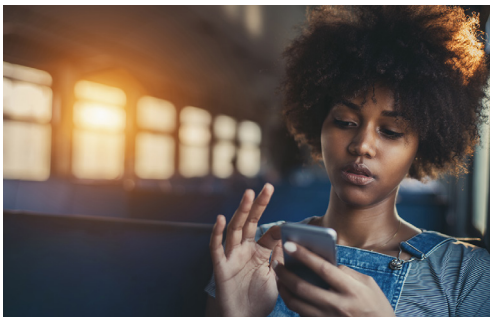
The features reviewed include:

- Free to patients: the cost to the patient to use the application
- Patient data portals: allow both provider and patient access to stored personal health information
- Stores photos: allow patients to take, upload, and store photos important to their health information
- Antibodies: allows a place for patients to track antibodies developed in response to previous blood transfusions
- Transfusion history: allows a place for patients to document transfusion history
- Information for patient: provides information to the patient about their condition
- Information for provider: provides clinical practice information to the provider on the patient's condition
- Emergency access: allows access to the application, even if the phone is locked, if the patient is unconscious

Comparison of Features

Identified Apps*	My-Medical App	Care-Passport	Thal-Tracker	Sickle-O-Scope	ThaliMe	Voice Crisis Alert	NotOk	Little George & the Dragon	Sickle Cell Services	Ash pocket Guides	Sickle-Buddy
Free to Patients											
Patient data portal											
Stores photos											
Place for antibodies											
Place for transfusion history											
Information for Patient											
Information for Provider											
Emergency Access											

* Information as of May 11, 2018. While thorough, this search may have not captured all mobile applications available for use.



Conclusions

While there are several apps available for patients with SCD or thalassemia, only two were identified that include a place specifically for storing antibody and transfusion history: ThalTracker and ThaliMe. Adoption and use of such apps could help providers make more informed treatment recommendations regarding blood transfusion when treating a new patient who has thalassemia or SCD.

An accurate transfusion history is essential to reducing the risk of transfusion-related complications, particularly for patients with SCD and thalassemia receiving care from more than one provider. While, ultimately, interoperable medical records and a centralized transfusion registry would improve transmission of transfusion-related histories, mobile apps can play an important, immediate role in improving transfusion safety.

The Georgia Health Policy Center is a data-coordinating center for multi-institutional projects focused on surveillance of and health promotion for individuals with blood disorders, including the REdHHoTT project —Registry and Education for Hemovigilance in Hemoglobinopathy Transfusion Therapy in Georgia. RedHHoTT aims to characterize and reduce complications associated with therapeutic blood transfusions in people with SCD and Thalassemia.

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Improving transfusion practice through data sharing and education