SkinIO - Mobile App for Total Body Photography

Primary Point of Contact

Name:	Kyoko Crawford
Organization:	SkinIO
Email Address:	kyoko@skinio.com

The Problem – Please define the dermatologic clinical problem worth solving, the current solutions, and the strengths and weaknesses of the current solutions.

Currently, there is no easily accessible and implementable way for dermatologists to detect and track potentially suspicious changes in patients' skin on an appropriately frequent schedule. Current solutions include installing capital-intensive, proprietary imaging systems that take up entire exam rooms or calling in medical photographers at high hourly rates to photograph patients. The high-quality photos from either of these methods can realistically only be procured when the patient is at the dermatologist's office or clinic and the photo data is not longitudinal.

On the other hand, there are an increasing number of mobile apps in the space that allow patients to photograph their skin (predominantly focusing on individual lesions) to assess either via virtual consult or algorithm whether a particular lesion is suspicious. While these apps are much more accessible for patients, most focus on analyzing individual lesions and not the full body, which places the onus of targeting the correct spot on the operator, who may often be an uninformed patient.

Your solution - Describe how your solution is different and why it is valuable.

SkinIO is a total body photography solution that enables medical staff and patients alike to easily capture repeatable high-quality photographs of entire body regions using latest generation mobile devices (e.g. iPads and iPhones). As a mobile (and web) app, SkinIO is backed by a HIPAA-compliant cloud-based server infrastructure, which allows photo data to be securely accessible by patients and their physicians at any time. Patient photos are also automatically processed by a proprietary image processing engine that utilizes both computer vision and machine learning to highlight lesions on the skin images and most importantly, track their evolution as additional photographs are captured over time. Because SkinIO is a mobile app on commodity hardware such as iOS devices, no additional imaging

hardware is needed and patients will also be able to capture these photographs more frequently at home.

Clinical hypothesis - Summarize the scientific or technical basis of the drug, device, diagnostic, or other product or service you are developing, and briefly provide evidence that supports its approach as useful and feasible.

The basis for developing such a solution that easily tracks the evolution of skin lesions over time is that leading indicators for skin cancers are either the appearance of new moles or changes in existing moles. The current standard of care in dermatology makes it very difficult for practitioners to accurately track such changes due to the infrequency of patient visits and lack of visual history against which to compare during an in-person screening. Last year, SkinIO completed a Phase I clinical trial with the Department of Dermatology at the Northwestern University Feinberg School of Medicine to evaluate the sensitivity of the SkinIO image processing algorithm, resulting in compelling results of 92% sensitivity in detecting either new lesions or changes to existing lesions.

Product profile and development plan - Describe the product or service (i.e. some information of what it is) and what stage it is in (e.g. concept, preclinical, prototyped, closed beta, etc. as applicable). Also please include the next major milestone (and costs to that milestone) in the product's development.

While SkinIO is technologically a mobile app with a cloud-based backend that automatically reminds patients to take follow-up photos on a regular schedule (e.g. every 3 months) and processes those images to look for changes, SkinIO is designed to be a service that connects patients with their physicians so that together, they can track patients' skin over time. SkinIO highlights lesions and potential changes in skin but is NOT a diagnostic. Instead, SkinIO visually highlights detected changes so that the patient's physician can more easily review a detection to judge whether it is of concern or not. SkinIO is currently on a patient payment model where a patient would pay $150 for an annual subscription to SkinIO's technology to take follow-up photos every 3 months AND his/her doctor's medical review. Physicians on SkinIO would be able to bill for the initial full-body set taken in office at no cost from SkinIO and then would be compensated $25 per review session of a patient's follow-up photos (additional $75/year on a quarterly schedule).

SkinIO is market-ready and officially available on the Apple App Store (Android version forthcoming). Our next major milestone is to deploy the product with 25 - 30 dermatologists in major dermatology markets by the end of 2017.

Value of your solution – What is your rough estimate of the yearly market revenue potential (and what are some for the basic assumptions underlying that estimate, e.g. this product could be used by X individuals per year, and so forth)?

Assuming a dermatologist enrolls roughly 1 patient/day on SkinIO (where the patient pays for a $150/year subscription to the service) and 220 working days, if 1000 dermatologists are on the SkinIO system, the yearly revenue would be $39 million with compensation payouts to participating dermatologists at about $19.6 million.

Competitive advantage – What approach(es) are you utilizing to preserve a competitive advantage (e.g. patent protection, rapidly develop and market next generation products, etc.)?

We are filing a patent application on our proprietary image processing algorithm and rapidly developing complementary apps to handle other skin conditions such as acne and eczema.