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## BACKGROUND

- The last update of the International Initiative on Thrombosis and Cancer (ITAC) evidence based clinical practice guidelines (CPGs) for the treatment and prophylaxis of venous thromboembolism (VTE) in cancer patients has been published in the *Lancet Oncology* on September 5, 2019.
- Implementation of CPGs in daily oncology practice is challenging in this fragile and complex patient population.
- Mobile health (mHealth) tools, which allow direct access to updated medical knowledge, are increasingly used by health care professionals, when they include validated and high-quality contents.
- The development of a mobile app for the treatment of VTE in cancer patients based on the regularly updated ITAC-CPGs is warranted to allow a patient-centered approach and to improve patient care and outcomes.

## AIM

- To describe the process development and contents of a clinical decision support tool to implement the ITAC-CPGs for the treatment and prophylaxis of VTE in patients with cancer.

## METHODS

- We constructed a multilayer framework to translate the ITAC-CPGs into executable knowledge.
- We used the Web-Roadmap methodology for science information, which includes planning, analysis, design, implementation and evaluation (Computing Practices and Letters 2002).
- The app was developed using the Java programming languages.

## RESULTS

- Two ITAC experts followed an iterative process of CPGs executive summary and algorithms elaboration.
- An alpha version of the app was then designed by a computer scientist supervised by both experts for revision at each step, to support the development of 3 validated modules:
  - ✓ **Module 1 : Primary prophylaxis of VTE in patients with cancer**
  - ✓ **Module 2 : Treatment of non-catheter-related VTE in patients with cancer**
  - ✓ **Module 3: Treatment of catheter-related VTE in patients with cancer**
- A beta version of the app was evaluated for usability by other members of the ITAC steering committee who have more than 10 years of clinical practice experience in the management of cancer-associated VTE. The flagged usability-related problems were revised according to the evaluator comments.
- The final workable mobile ITAC app platform consists of an iOS and Android front end which is compatible with iPhones, iPads, Android phones, and tablets.
- This tool allows a practical, step-by-step patient-centered approach for the prophylaxis and treatment of VTE in any cancer patient, based on simple decision-tree algorithms. By answering a series of questions, health care users can quickly determine a recommended course of action for any given patient based on his clinical scenario (an example is provided in Figure 1).
- A large amount of information and recommended processes are integrated into a single easy-to-use handheld tool.
- In 2021, the ITAC app is available in **English, French, Spanish, Portuguese and Russian** in any **iOS** (iTunes App Store) or **Android** (Google Play) devices for free.
- By June 20, 2021, the ITAC app had been downloaded by 4092 health care professionals worldwide.

## CONCLUSIONS

By translating written ITAC-CPGs into timely and effective decision-making algorithms, the multi-language ITAC app will allow physicians and other healthcare professionals to overcome cancer-associated management challenges worldwide.

Figure 1. Case of A 67-year-old obese (BMI = 35 kg/m<sup>2</sup>) female with normal renal function scheduled to have liver resection for an isolated hepatic metastasis following a colon resection 2 years ago for colon cancer.



6 clics  
1 minute  
Any VTE and cancer situation

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