

SmartHIV Manager: a web-based decision support system for HIV services

Shola Adeyemi, PhD¹, Eren Demir, PhD², Usame Yakutcan, PhD^{2*}, Adekunle Adeoti, MBBS, MMedSci, FMCP, FWACP³, Nneoma Idikaa, PhD¹, Kemal Taskiran, BSc, MSc¹

(1) Bohemian Smartlytics Ltd, Haverhill, UK. (2) University of Hertfordshire, Hatfield, UK. (3) Ekiti State University/Ekiti State University Teaching Hospital, Ado-Ekiti, Nigeria.

BACKGROUND

Despite the remarkable developments in the management of people living with HIV/AIDS (PLWHA), there is **no user-friendly platform** that helps key decision-makers to improve their HIV services.

SmartHIV Manager, a module within **SmartHIV Solution**, is a web-based operational planning platform developed for the **management of HIV services**.

METHODOLOGY

- The decision support system (DSS) mimics **the journey of real-life HIV patients through HIV care** (from diagnosis to treatment) with associated key resources captured.
- The system was tested and validated via information from HIV treatment centers in **Kenya, South Africa and Nigeria**.
- Over **hundred input parameters** established to power the HIV pathway of care.

DESIGN

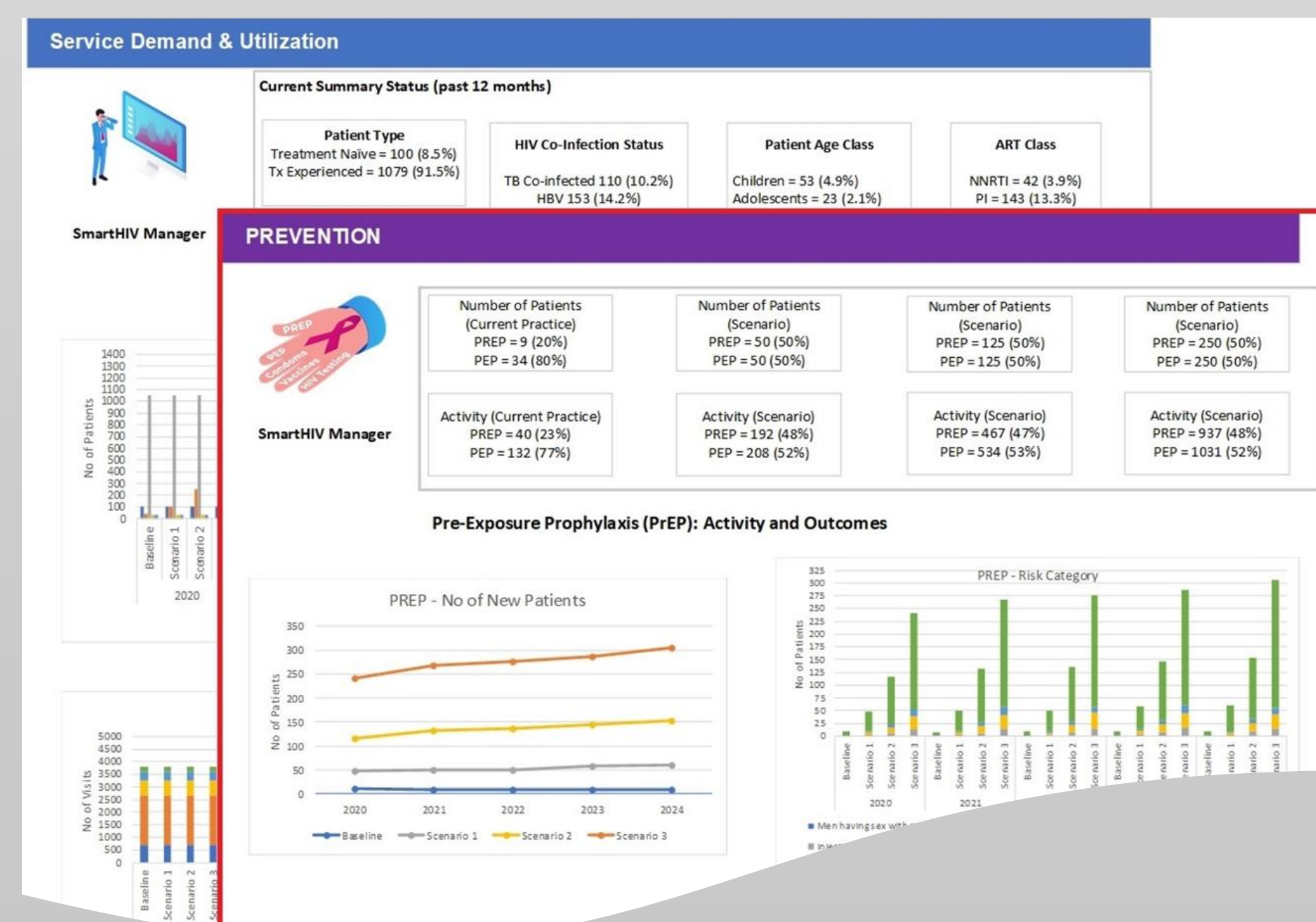
Five different dashboards are developed, showing wide range of outputs and the impact of interventions, namely,

- service demand and utilization,
- prevention strategies,
- human resource management,
- budgeting and financial planning,
- UNAIDS target.

MODEL INTERFACE



DASHBOARDS



RESULTS

- Increasing prevention measures and how to reach UNAIDS 90-90-90 target** is demonstrated for a service in Nigeria.
- The number of people offered **PrEP/PEP** (from a baseline of 43 to 500), averted 81 cases over a 5-year period.
- The outputs guided the service to increase **the number of naïve patients** to provide treatment annually **by 20%** (with a 5% annual growth rate) to **achieve UNAIDS target by 2025**.

Table 1 Selected Key Outputs at the end of 5-year

No of Monitoring Visits	Baseline	Prevention Scenario	UNAIDS Scenario
Monitoring (PLWHA)	20,753	20,333	22,379
PREP/PEP (Prevention)	1096	19,499	1092
UNAIDS 90-90-90	Baseline	UNAIDS Scenario	
PLWHA - Population	1913	1913	
Diagnosed (First 90)	1441 (75%)	1721 (81%)	
On Treatment (Second 90)	1441 (100%)	1549 (100%)	
Suppressed (Third 90)	1276 (89%)	1394 (87%)	
Population vs Suppressed	67%	73%	

PLWHA, people living with HIV/AIDS; PREP, pre-exposure prophylaxis; PEP, post-exposure prophylaxis; UNAIDS, the joint United Nations programme on HIV/AIDS

CONCLUSION

- SmartHIV Manager** is designed to be used by **any HIV service globally** with various features and functionalities.
- The web-based system **supports effective HIV/AIDS management, control and service delivery**.

Contact: u.yakutcan@herts.ac.uk

Website: www.bsmartlytics.com