

## Opinion

# VIONE: An Innovative Electronic Health Record Medication Optimization Methodology

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## PROJECT INFORMATION

VIONE methodology is an award winning, USA based patient safety project that transformed our national landscape with High Reliability Organization (HRO) concepts. VIONE's clinical, academic, research, leadership, modern technology tools achieve sustainable reductions and optimization of Potentially Inappropriate Medications (PIM) and adverse outcomes such as hospitalizations, falls, death, clinical waste, etc. VIONE exemplifies successful project initiation, refinement, incremental expansion to regional, national, and international therapeutic and global alliances. Decision support tools are seamlessly integrated into the workflow. To date, over 11,000 medical providers decribed over 1 million medication orders in 112 veterans affairs (VA) medical facilities with cost avoidance of over 100 million US dollars within 6-years.

## BACKGROUND INFORMATION

### Problem

Prevalence and adverse outcomes from polypharmacy or the use of more medications than medically necessary, overuse, misuse and underuse of medications are long standing and widely acknowledged global concerns. There is no universal consensus to address PIMs that may cause harm and even death. Not all medications are good for all patients - all the time. About 45% of prescribed medications are not taken by patients, leading to environmental pollution, unsafe practices, clinical waste, and compromised quality of care. A physician developed innovative VIONE methodology addresses these challenges. Initially launched on a 15-bed inpatient unit, it spread to 112 VA programs. Using 5 filters of Vital, Important, Optional, Not indicated, Every medication has an indication, it decreases pill burden, improves patient safety, compliance, and cost-effectiveness. VIONE utilizes strong practices in population health management and informatics with real time data capture, reporting, and visualization of tracking and success metrics.

VIONE invests in global and therapeutic alliances to create, promote, and sustain green environments through knowledge exchange channels and networking. VIONE promotes prospective data driven population VIONE health risk stratification tools, score cards, decision support tools, dashboards to identify high-risk Veterans.

## GOALS OF VIONE PROJECT

### Specific goals and strategic objectives include:

1. Decrease polypharmacy related preventable harm across the continuum of care while sharing lessons learned and best practices.
2. Provide clinical decision support tools that identify veterans at highest risk of adverse events due to polypharmacy through networking and knowledge exchange.
3. Empower medical providers, pharmacists, multidisciplinary health care professionals, patients, surrogate decision makers, stake holders and key leaders to practice patient safety efforts. Expand advocacy and influence on national, international alliances, academic curricula.
4. Promote sustainable green environments through minimizing pollution and waste.

### Outcomes to Date: 2016-2022

Clinical outcomes include empowerment of patients and providers, redesigning healthcare delivery models, successful de-prescribing of over 1 million unnecessary medications with a cost avoidance of over 100 million US dollars, impacting over 460,000 veterans in rural and urban settings, across continuum of care, in various inpatient, outpatient, home care and virtual care settings in various age groups. Quality of clinical care, patient safety, reduced emergency department visits, reduced hospitalizations, improved cost-effectiveness data are attached. Several individual provider

and patient testimonials, case reports and presentations case reports and presentations illustrate the reach, impact, scalability and sustainability of VIONE medication optimization methodology. Our outcomes serve as motivators, catalysts, and force multipliers. Scientific reports on positive and negative deviance in adaptation of practices have a global impact as the insights gained in the past 2-years from VIONE project help to understand, adopt, and disseminate sustainable clinical practices successfully through actionable steps. We worked with physicians, pharmacists, medical informatics, data analytics managers, electronic health record work experts, nursing, administrators, pharmacy benefits and management office, national opinion leaders and sponsors, Veterans advisory board members, health literacy specialists, department of defense for inter-operability of record access, etc. Maintaining Implementation through Dynamic Adaptations (MIDAS) Quality Enhancement Research Initiative (QUERI program) recently completed VIONE implementation evaluation and found statistically significant outcomes illustrating that VIONE adoption led to an

average decrease of 2.5 medications per patient, patients 65 and older were prescribed 0.3 fewer potentially inappropriate Beer's medications, patients were less likely to have an Emergency Department visit or hospitalization over a 6-month period compared to their patients seen prior to VIONE adoption. *"VIONE is less resource intensive. The return on investment is huge. VIONE sustained during coronavirus disease (COVID) surges with virtual health capability"*.

VIONE project received local, regional, and prestigious national awards.

*"VIONE has impacted over 460,000 patients in 112 national clinical practices, deprescribing over 1 million medication orders, achieving cost avoidance of over 109 million US Dollars in 6-years"*.

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