

Review

A National Multidisciplinary Consensus to Develop an HIV Pre-Exposure Prophylaxis (PrEP) Referral Framework in Romania

Oana Săndulescu ^{1,2,3} , Anca Streinu-Cercel ^{1,2,3,*}, Cătălina Poiană ^{1,4,5}, Viorel Jinga ^{1,6} , Beatrice Mahler ^{1,4,7} , Gheorghe Gindrovel Dumitra ^{4,8,9} , Sandra Adalgiza Alexiu ¹⁰ , Simona Negreș ^{11,12}, Cristina-Elena Zbârcea ^{11,12} , George-Sorin Țiplică ^{1,13,14} , Mihai Mitran ^{15,16}, Robert Stoica ^{1,17,18} , Mariana Mărdărescu ², Șerban Benea ^{1,2,19}, Adrian Gabriel Marinescu ², Victor Daniel Miron ^{1,2,20} , Elena Mătășaru ², Odette Chirilă ², Sorin Petrea ^{2,21}, Iulian Petre ²², Mihai Lixandru ²³ and Adrian Streinu-Cercel ^{1,2,3}

- ¹ Faculty of Medicine, Carol Davila University of Medicine and Pharmacy, 050474 Bucharest, Romania; oana.sandulescu@umfcd.ro (O.S.)
- ² National Institute for Infectious Diseases “Prof. Dr. Matei Balș”, 021105 Bucharest, Romania
- ³ Academy of Romanian Scientists, 050044 Bucharest, Romania
- ⁴ Romanian College of Physicians, 023965 Bucharest, Romania
- ⁵ National Institute of Endocrinology, 011863 Bucharest, Romania
- ⁶ Department of Urology, Clinical Hospital “Prof. Dr. Theodor Burghel”, 061344 Bucharest, Romania
- ⁷ Marius Nasta Institute of Pneumology, 050159 Bucharest, Romania
- ⁸ Family Medicine Department, University of Medicine and Pharmacy of Craiova, 200349 Craiova, Romania
- ⁹ Romanian National Society of Family Medicine, 030167 Bucharest, Romania
- ¹⁰ Association of General Practitioners, 021482 Bucharest, Romania
- ¹¹ Romanian College of Pharmacists, 030167 Bucharest, Romania
- ¹² Faculty of Pharmacy, Carol Davila University of Medicine and Pharmacy, 020956 Bucharest, Romania
- ¹³ Romanian Association for Dermatology and Venerology, 061715 Bucharest, Romania
- ¹⁴ Dermatology II Department, Colentina Clinical Hospital, 020125 Bucharest, Romania
- ¹⁵ Romanian Society for Obstetrics and Gynecology, 011062 Bucharest, Romania
- ¹⁶ Department of Obstetrics-Gynecology, Clinical Hospital “Panait Sirbu”, 060251 Bucharest, Romania
- ¹⁷ Urology III Department, Fundeni Clinical Institute, 022328 Bucharest, Romania
- ¹⁸ Romanian Association of Urology, 022328 Bucharest, Romania
- ¹⁹ Romanian Unit for Technical Assistance and Management of the National Programme for Prevention, Surveillance and Control of HIV Infection, 021105 Bucharest, Romania
- ²⁰ Society for Research and Innovation in Infectious Diseases, 020125 Bucharest, Romania
- ²¹ Society for Infectious Diseases and HIV/AIDS, 021105 Bucharest, Romania
- ²² National Union of Organization of Persons Affected by HIV/AIDS (UNOPA), 022504 Bucharest, Romania
- ²³ Romanian Society Against AIDS (ARAS), 050471 Bucharest, Romania
- * Correspondence: anca.streinuercel@umfcd.ro

Abstract

Background: Despite major advances in antiretroviral therapy, HIV transmission remains an important public health challenge. Pre-exposure prophylaxis (PrEP) is a highly effective prevention strategy, offering a significant opportunity to further reduce new HIV infections through expanded access and optimized implementation. **Methods:** A national multidisciplinary consensus process was conducted to define principles and operational pathways for PrEP referral and linkage in Romania. Experts from different medical fields, professional societies, academic institutions, and community-based organizations participated in structured discussions. **Results:** The consensus highlighted relevant knowledge gaps related to HIV prevention and PrEP among specialists working outside the field of infectious diseases, including difficulty recognizing risk factors for HIV, uncertainty about next steps after identifying risk factors, and uneasiness discussing sexual health. The consensus also emphasized a shared commitment of these professional societies to address these gaps through pragmatic, specialty-adapted training. Key priorities included improved HIV risk recognition in routine care, development of communication skills, and clear referral pathways to PrEP services. Existing barriers were also discussed, underscoring the importance



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of multidisciplinary networks and community engagement. **Conclusions:** This consensus provides a structured, context-adapted framework to support the upcoming nationwide implementation of PrEP in Romania. By strengthening provider education, clarifying clinical pathways, and fostering interdisciplinary collaboration, it offers a foundation for equitable and sustainable HIV prevention.

Keywords: HIV; multidisciplinary; PrEP; prophylaxis; prevention; Romania

1. Introduction

The global impact of the human immunodeficiency virus (HIV) epidemic remains substantial, with an estimated 40 million people living with HIV and 1.3 million new infections in 2024 [1]. While incidence has declined globally, the reduction is uneven, with new cases persisting or rising in Eastern Europe, Central Asia, and other regions [2]. The World Health Organization (WHO) European Region has seen progress in viral suppression through antiretroviral therapy (ART), but more than 30% of people living with HIV still have transmissible viral load levels, and late diagnosis and disparities in care persist [3,4]. The rate of late diagnosis is reported at 52.4% across Europe [5], and at 54% in Romania [6], attesting to HIV's silent long-term progression and stressing the need for enhanced public health response for earlier diagnosis and for prevention. Importantly, epidemiologic studies and modeling analyses demonstrate that a substantial proportion of new HIV transmissions are attributable to individuals who are unaware of their HIV status [7].

The Joint United Nations Programme on HIV / AIDS (UNAIDS) has set the ambitious goal of ending AIDS as a public health threat by 2030, with a central focus on achieving zero new cases of HIV, a vision operationalized through interim targets such as the 95-95-95-95 strategy [1,8]. By 2024, only 87% of people living with HIV globally knew their status, 77% were on ART, and 73% had achieved viral suppression, and progress toward the UNAIDS targets remains uneven [1].

Pre-exposure prophylaxis (PrEP) is a highly effective intervention for preventing HIV in individuals at increased risk [9,10]. Randomized controlled trials and systematic reviews consistently show a significant reduction in incident HIV among persons receiving PrEP compared to placebo or to no PrEP, with effectiveness strongly correlated to adherence [11]. PrEP efficacy and effectiveness have been consistently demonstrated across different populations at risk, including men who have sex with men (MSM) [12], transgender persons [13], and heterosexual men and women [14]. Recent biomedical advances in PrEP further allow tailoring the regimen to the individual needs of the recipient, from daily to event-driven (on-demand) [15], to tenofovir disoproxil fumarate (TDF)-sparing options such as tenofovir alafenamide/emtricitabine (TAF/FTC) [16] and long-acting (LA) injectable options such as cabotegravir LA 600 mg every 2 months i.m. [13] and lenacapavir LA 927 mg every 6 months s.q. [17].

While the effectiveness of PrEP for HIV prevention has been widely demonstrated, access to PrEP varies markedly across different regions in Europe, with significant disparities between Western, Central, and Eastern Europe. In Western Europe, PrEP is largely available and often reimbursed, leading to substantial reductions in new HIV cases among key populations [3,18,19]. However, even in these regions, less than 10% of those who could benefit from PrEP have access [18], and out-of-pocket costs remain a barrier for many [20].

In Central and Eastern Europe, several further barriers limit access, with PrEP available in only a minority of settings and often not covered by national health systems [3,19–21]. The estimated PrEP access rate in Central and Eastern Europe ranges from less than 1%

to 80%, but most countries fall at the lower end of this interval [21]. Barriers include lack of awareness among at-risk populations, limited provider knowledge, low perceived HIV risk, and substantial stigma [19,21,22]. Women, migrants, and marginalized groups face additional barriers, with PrEP provision and guidance for women notably less standardized across Europe [22]. Governmental provision pathways are reported to be associated with better adherence and lower discontinuation rates compared to non-governmental pathways [23].

Access to ART in Romania is free for all people living with HIV [24,25], but PrEP has so far not been reimbursed or formally provided. At the end of 2025, Romania is preparing for nationwide implementation of PrEP as part of its comprehensive HIV prevention strategy, which highlights the need for a unified national PrEP framework. Importantly, a substantial proportion of individuals at risk of HIV access healthcare through specialties other than infectious diseases (ID), highlighting the need for broad multidisciplinary engagement.

Recognizing these implementation challenges and the imperative to expand HIV prevention capacity beyond ID specialists, we have conducted a national multidisciplinary consensus process to guide and facilitate referral and linkage to PrEP. Through a collaborative effort among Romanian medical professional societies, academic institutions, professional colleges, and community-based organizations we aimed to define a coherent, evidence-based framework for PrEP referral adapted to the national healthcare context. This consensus builds on international clinical evidence while addressing local structural, professional, and social determinants of HIV prevention.

2. Methods

2.1. Design and Objectives

We applied a structured multidisciplinary expert consensus methodology to define nationally relevant agreed principles and logistical steps for operationalizing and optimizing PrEP referral. The process followed a structured agenda addressing continuing professional development needs to increase knowledge and awareness about PrEP, identification of PrEP candidates, collaboration across healthcare disciplines and community-based organizations, and implementation barriers and facilitators. This paper is the result of a consensus project conducted under institutional approval from the National Institute for Infectious Diseases “Prof. Dr. Matei Balș” Romania, which covered the methodology for the review and expert consensus development.

2.2. Consensus Process

The consensus process consisted of a series of multidisciplinary online meetings leading up to an in-person meeting held in November 2025 in Bucharest, Romania and hosted by the Romanian Senate’s Committee for Health.

2.3. Consensus Participants

Participants were purposively selected to ensure representation of relevant stakeholders for identifying PrEP candidates. These included healthcare practitioners, academic experts, representatives of professional colleges and societies, and of community-based organizations. The consensus reflects the collective work of the National Institute for Infectious Diseases “Prof. Dr. Matei Balș” Bucharest, the Unit for Technical Assistance and Management of the National Programme for Prevention, Surveillance and Control of HIV Infection in Romania, the Romanian College of Physicians, the Romanian College of Pharmacists, the Society for Research and Innovation in Infectious Diseases Romania, the Romanian Society for Obstetrics and Gynecology, the Romanian Association for Dermatology and Venerology, the Romanian National Society of Family Medicine, the Association of

General Practitioners, the Romanian Association of Urology, the Carol Davila University of Medicine and Pharmacy Bucharest, the National Union of Organization of Persons Affected by HIV/AIDS (UNOPA), the Romanian Society Against AIDS (ARAS), and the Society for Infectious Diseases and HIV/AIDS Romania.

2.4. Data Collection and Synthesis

Expert input was collected through three rounds of moderated plenary discussions and written feedback. Comprehensive written meeting reports were produced and served as the primary source documents for this manuscript. The authors synthesized the content into thematic domains reflecting areas of consensus. Draft text was circulated for review among designated representatives of participating institutions, and revisions were made iteratively until consensus approval was achieved.

3. Results

3.1. Knowledge Gaps and Training Needs Related to PrEP Among Healthcare Professionals

The current consensus identified educational needs related to HIV prevention and PrEP, specialty-specific training priorities for non-ID specialists, and system-level factors influencing interdisciplinary collaboration and linkage to PrEP following HIV risk recognition. These domains reflect key areas identified during multidisciplinary discussion as critical for the development of a feasible and sustainable PrEP implementation framework in the Romanian context.

To date, in Romania, HIV has largely remained within the scope of ID specialists. However, current epidemiological dynamics indicate that recognition of risk factors for HIV acquisition should involve all healthcare workers. Early identification of HIV risk enables timely implementation of prevention measures, including PrEP, which has been demonstrated to be highly effective and safe.

The implementation of PrEP in Romania inherently requires a multidisciplinary approach. Accordingly, increasing HIV-related knowledge, and PrEP-specific awareness in particular, become essential across non-ID specialties. Several such interrelated educational needs related to HIV prevention and PrEP were identified (Table 1). Proposed solutions included pragmatic educational measures designed to be feasible within busy clinical settings, including short modular training, options for online continuing medical education, specialty-adapted screening tools, communication skills development, and clearly defined referral pathways.

Table 1. Educational needs, corresponding actions, and key stakeholders for PrEP implementation.

Educational Need	Proposed Action	Key Stakeholders
Limited knowledge on PrEP among non-ID specialists	Short, modular HIV/PrEP education integrated into CPD/CME	Professional societies; academic institutions
Difficulty recognizing risk factors for HIV	Specialty-adaptable screening tools and clinical algorithms	Professional societies; clinicians; healthcare managers
Uneasiness discussing sexual health	Scenario-based communication training	Medical educators; community organizations
Uncertainty about next steps after identifying risk factors for HIV	Clear referral pathways and action checklists	ID services; PrEP clinics; health authorities
Low sustainability of educational impact	Recurrent, low-burden educational updates	Professional networks; scientific societies

CME—continuing medical education; CPD—continuing professional development; HIV—human immunodeficiency virus; ID—infectious diseases; PrEP—pre-exposure prophylaxis.

While overarching educational needs and action-oriented training principles were identified across specialties, the discussions also highlighted the importance of tailoring PrEP-related education to the specific clinical contexts in which different healthcare profes-

sionals practice. Specialty-specific training was considered essential to ensure that PrEP knowledge is translated into feasible and context-appropriate clinical training.

For general practitioners, training initiatives should prioritize the systematic identification of individuals at increased risk of HIV during routine preventive and chronic care consultations. Emphasis should be placed on conducting sensitive, nonjudgmental sexual health assessments, normalizing discussions around sexual behavior, and recognizing contextual risk factors that may not be immediately disclosed by patients.

In obstetrics and gynecology, educational efforts should focus on the recognition of women soliciting birth control, presenting with sexually transmitted infections (STIs), and those exposed to structural or social vulnerabilities, including sex workers. Incorporating PrEP counseling into reproductive and sexual health care pathways is essential for addressing gender-specific barriers to HIV prevention.

Training for dermatology and venereology specialists should reinforce their frontline role in HIV prevention by promoting systematic PrEP counseling for patients presenting with STIs. Given the bidirectional relation between STIs and HIV acquisition risk, these specialists are uniquely positioned to initiate prevention discussions and facilitate timely referral to PrEP.

Urologists usually encounter male patients in consultations that are not primarily framed as HIV-related but are closely linked to sexual health (urethritis, recurrent STIs, genital lesions, sexual dysfunction or requests for STI screening following risk events), that may serve as proxy for an increased risk of acquiring HIV. As such, their training should emphasize the routine integration of sexual history-taking conducted in a nonjudgmental and inclusive manner. Urologists should be able to rapidly distinguish indications for PrEP versus post-exposure prophylaxis (PEP). When exposure is recent (typically within 72 h), urgent linkage to PEP pathways is required; when HIV risk is recurrent or anticipatable, referral for PrEP initiation is indicated. Counseling should consistently emphasize that PrEP is highly effective against HIV when used correctly, but does not protect against other STIs, underscoring the need for combination prevention and periodic STI screening.

Endocrinologists, particularly those involved in gender-affirming care, manage transgender individuals, a population disproportionately affected by HIV due to intersecting social, behavioral, and structural risk factors. Training for endocrinologists should include awareness of HIV epidemiology in transgender populations, recognition of sexual health risk factors, and the integration of PrEP discussions into comprehensive, affirming care models. Collaboration with primary care, ID, or sexual health services should be encouraged to facilitate seamless access to PrEP while maintaining continuity of gender-affirming treatment.

Emergency medicine physicians frequently encounter individuals with recent HIV exposure or acute STIs. Training should focus on rapid HIV risk assessment, differentiation between indications for PrEP or PEP, rapid counseling, and immediate referral pathways.

Mental health professionals may care for individuals with psychosocial vulnerabilities associated with increased HIV risk. Training should support recognition of sexual health risk factors, substance use (including injecting drug use and chemsex), basic PrEP counseling, and collaboration with PrEP-prescribing services, while addressing adherence-related challenges.

Pharmacists represent an important point of contact upstream of the healthcare system and should receive targeted training in risk-recognition, counseling, appropriate guidance on HIV testing or self-testing, and clear referral pathways to PrEP clinics. Their role is particularly relevant in reaching individuals who may not routinely engage with traditional medical services. The pharmacies per se could also serve as community awareness hubs,

by displaying QR codes with links to essential medical information related to PrEP and combined prevention methods.

Finally, for ID specialists, advanced training should encompass standardized prescribing protocols, communication skills, adherence support strategies, laboratory monitoring, management of side effects, and patient preparation for long-acting injectable PrEP formulations. These specialists also play a pivotal role in mentoring other healthcare providers and contributing to the development of local PrEP care networks.

3.2. Interdisciplinary Collaboration and Linkage to PrEP Following Risk Recognition

Effective implementation of PrEP requires coordinated interdisciplinary collaboration and clearly defined pathways for referral to PrEP and linkage to prevention following HIV risk recognition. Creating standardized workflows may foster the translation of risk recognition into timely preventive action. Several potential barriers to PrEP referral were highlighted during the consensus process, and solutions tailored to the national context were proposed—these are described below.

Limited examination time and competing clinical priorities are likely to constrain the ability of clinicians across specialties to initiate PrEP-related discussions during routine care. In this context, the integration of brief PrEP counseling messages and streamlined referral algorithms into existing clinical workflows may facilitate consistent prevention practices without imposing additional burden on clinicians.

The lack of formalized referral pathways for PrEP initiation and follow-up may represent a key structural barrier to implementation. Clear, standardized pathways linking non-ID specialists with ID specialists and dedicated PrEP services could support continuity of prevention care and reduce delays following identification of eligible individuals.

Fragmented interdisciplinary collaboration may further undermine effective PrEP delivery. The establishment of multidisciplinary PrEP networks involving clinicians from multiple specialties, pharmacists, and representatives of community organizations may provide a foundation for coordinated prevention efforts and shared responsibility across the healthcare system.

Pharmacists represent a potentially underutilized point of access within HIV prevention pathways. Expanding their role through targeted training in HIV risk recognition, PrEP-related information, HIV testing guidance, and referral mechanisms may enhance early linkage to prevention services.

Finally, systemic barriers to patient engagement may be overcome through collaboration with community-based organizations. Such partnerships have the potential to strengthen outreach, education, and adherence support, contributing to a more inclusive and accessible PrEP implementation framework.

Figure 1 summarizes the conceptual framework, illustrating the progression from HIV and PrEP education among non-ID specialists to risk recognition, initial preventive action, and linkage to PrEP services through interdisciplinary collaboration.

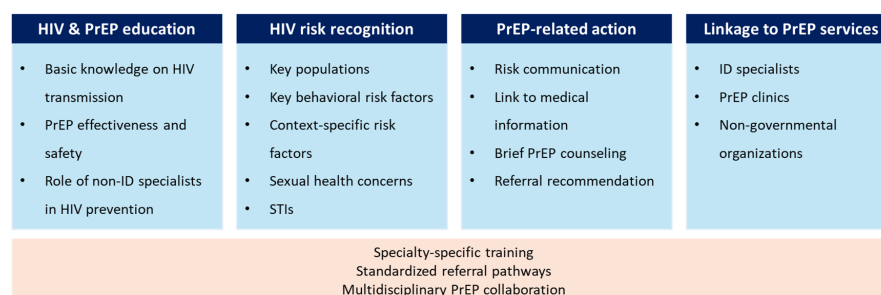


Figure 1. Conceptual framework for PrEP implementation through collaboration with non-infectious diseases specialists.

4. Discussion

At the level of the WHO European Region, a joint report by the European Centre for Disease Prevention and Control (ECDC) and the European AIDS Clinical Society (EACS) indicated that only 41% of healthcare workers reported having knowledge of PrEP [26]. In this context, including in Romania, healthcare workers demonstrate limited awareness not only regarding PrEP but also regarding HIV infection more broadly.

The findings of the current consensus process underscore that successful PrEP implementation cannot be achieved through isolated clinical initiatives, but requires structural alignment between policy, clinical practice, professional education, and community engagement.

Ensuring access to PrEP for all individuals who may benefit from it requires recognition that populations at risk are not homogeneous and interact with the healthcare system through multiple entry points (Figure 2). Three broad categories of individuals emerge as particularly relevant for PrEP implementation. First, individuals who self-identify as being at risk and actively seek PrEP represent a group with high motivation but variable access, often constrained by lack of information regarding service availability and referral pathways. Second, individuals in whom healthcare professionals identify HIV risk factors during routine care constitute a substantial proportion of potential PrEP candidates; however, as highlighted through the present consensus, risk recognition in this group is frequently inconsistent across specialties and requires targeted training. Third, the general population may benefit from broader awareness of PrEP as part of health literacy efforts, even in the absence of immediate eligibility, as such knowledge can facilitate earlier engagement with prevention services when risk emerges.

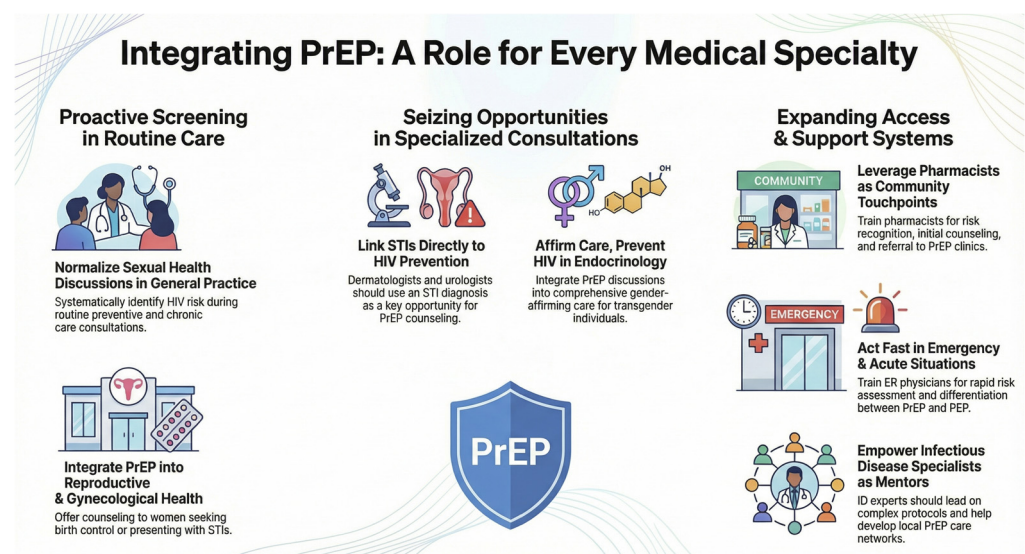


Figure 2. Key areas of PrEP referral integration across multiple healthcare provider levels.

The emphasis placed by this consensus on healthcare worker education is supported by international evidence demonstrating that higher levels of provider knowledge are associated with increased HIV screening rates and more effective risk reduction counseling. Importantly, PrEP represents only one component of a broader combination prevention framework that also includes PEP [27,28], consistent condom use [29], treatment as prevention (Undetectable = Untransmittable, U = U) [29,30], harm reduction interventions for people who inject drugs [31], voluntary male circumcision in specific epidemiological contexts [32], and routine HIV [30] and STI screening [27]. Familiarity with this integrated prevention approach is essential for non-ID specialists, as prevention opportunities frequently arise outside specialized HIV services.

Addressing these distinct groups necessitates differentiated yet complementary approaches. At the population level, improving health literacy through general education on HIV prevention remains a foundational component. Such efforts support normalization of prevention discussions and reduce stigma, thereby creating an enabling environment for PrEP uptake. At the clinical level, accurate and integrated information regarding PrEP and HIV risk behaviors is essential, particularly within a broader framework that also encompasses hepatitis B and C viruses and STIs, in line with the World Health Organization's public health sector strategy [33,34]. Importantly, the present consensus underscores that information alone is insufficient in the absence of clear and navigable patient pathways. Practical tools, such as standardized referral procedures, designated contact points, and unified educational materials, are likely to facilitate timely linkage to PrEP services following risk recognition, while maintaining routine HIV and STI screening as integral components of sexual health care.

The role of healthcare professionals across disciplines is central to this process. Continuing professional development and targeted training for physicians, pharmacists, and nurses emerged as key enablers of PrEP implementation, supporting not only knowledge acquisition but also the development of communication skills and confidence in initiating prevention-related discussions. As demonstrated by the specialty-specific training priorities identified through this consensus, aligning educational content with real-world clinical contexts increases the likelihood that PrEP-related knowledge will be translated into action.

Taken together, these findings suggest that PrEP implementation in Romania would benefit from a coordinated, multi-level strategy that integrates population-level education, clinician-focused training, and system-level support mechanisms. Such an approach aligns with international HIV prevention frameworks while responding to local healthcare structures and practice patterns. By strengthening prevention literacy, clarifying clinical and referral pathways, and fostering interdisciplinary collaboration, a solid foundation can be established for sustainable and equitable PrEP delivery within the Romanian healthcare system.

Experiences from other countries showed that the most effective methods for delivering education to healthcare workers to improve HIV prevention are brief behavioral counseling, individualized skills-based interventions, and face-to-face approaches [28,35].

Integrating HIV education into routine clinical care, primary care, and syndemic care curricula enhances the reach and sustainability of prevention efforts [36]. Differentiated service delivery models are effective for reaching marginalized populations and reducing barriers to access. These approaches shift the focus from facility-based to community- and patient-centered care, improving both efficiency and effectiveness of prevention interventions [37,38].

Key factors associated with improved knowledge and attitudes among healthcare workers include targeted training, dissemination and use of up-to-date guidelines, direct experience caring for people living with HIV, and addressing structural inequities in healthcare delivery. Programs that incorporate these elements are more likely to achieve sustained improvements in HIV prevention knowledge and practice [37,39].

This consensus should be interpreted in light of certain limitations. The findings reflect expert agreement rather than empirical implementation data, and the feasibility of proposed pathways will depend on future policy decisions, resource allocation, and regulatory frameworks. Nevertheless, the multidisciplinary nature of the consensus, the inclusion of professional and community stakeholders, and the alignment with international HIV prevention evidence strengthen its relevance and applicability. By articulating clear educational priorities, specialty-specific roles, and system-level enablers, this work provides a structured foundation for the forthcoming national PrEP program.

5. Conclusions

In conclusion, the consensus articulates an implementation strategy that is consistent with international evidence: PrEP referral processes should be integrated across different care settings, supported by provider education, standardized clinical guidance, risk screening tools, and robust collaboration with community partners. These elements collectively address known obstacles in PrEP delivery and position Romania to achieve meaningful reductions in HIV incidence.

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