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Research Article

Integrating Cancer Prevention and Early Detection into Primary Healthcare in India

An Evidence-Informed Narrative Review of Community-Based Strategies, Population Screening, Risk Reduction, Early Diagnosis and Continuity of Care for Strengthening Non-Communicable Disease Control

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ABSTRACT

Background: Cancer represents a major and increasingly complex non-communicable disease (NCD) challenge, with substantial implications for population health, health-system capacity and socioeconomic well-being. Although advances in cancer diagnosis and treatment have improved outcomes for several malignancies, the public-health burden remains strongly influenced by preventable risk factors, inadequate awareness, delayed presentation, limited screening uptake, diagnostic delays and discontinuities across the cancer-care pathway. In India, these challenges are particularly important because of the country's large and diverse population, substantial rural-urban disparities, variable healthcare accessibility and dependence on primary healthcare for population-level prevention and early detection.

Objective: This narrative review aims to examine the role of primary healthcare in integrating cancer prevention and early detection within the broader NCD-control framework in India, with particular emphasis on community-based risk reduction, health promotion, population screening, early recognition of symptoms, diagnostic referral, continuity of care and health-system integration.

Methods: An evidence-informed narrative review approach was adopted. Relevant literature concerning cancer epidemiology, modifiable risk factors, community-based prevention, population-based screening, primary healthcare, early diagnosis, referral pathways, digital health, community health workers and continuity of cancer care was conceptually synthesized. Particular attention was given to evidence relevant to the Indian public-health context and to

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identifying implementation gaps and opportunities for strengthening the cancer-control continuum.

Results: The literature indicates that effective cancer control requires a shift from predominantly treatment-oriented approaches toward an integrated prevention-to-care continuum. Tobacco and alcohol exposure, unhealthy diet, physical inactivity, obesity, environmental exposures and selected infectious agents constitute important targets for primary prevention. Community engagement and health literacy can improve recognition of risk factors and warning symptoms, while appropriately implemented screening programmes can facilitate earlier identification of selected cancers. Primary healthcare facilities and community health workers can function as critical points for risk assessment, health education, screening coordination, referral and follow-up. However, fragmented referral pathways, inadequate diagnostic capacity, workforce constraints, socioeconomic barriers, geographical inequity and loss to follow-up can weaken the effectiveness of otherwise well-designed programmes.

Conclusion: Cancer prevention and early detection should be positioned as integral components of comprehensive primary healthcare and NCD control in India. A Community-to-Care Cancer Control Continuum, linking population risk reduction, community awareness, screening, early diagnosis, referral, treatment linkage and survivorship-oriented follow-up, may provide a useful conceptual framework for strengthening cancer control. Future research should evaluate context-specific implementation models, equity-sensitive screening strategies, digital innovations and measurable pathways from community-level intervention to cancer outcomes.

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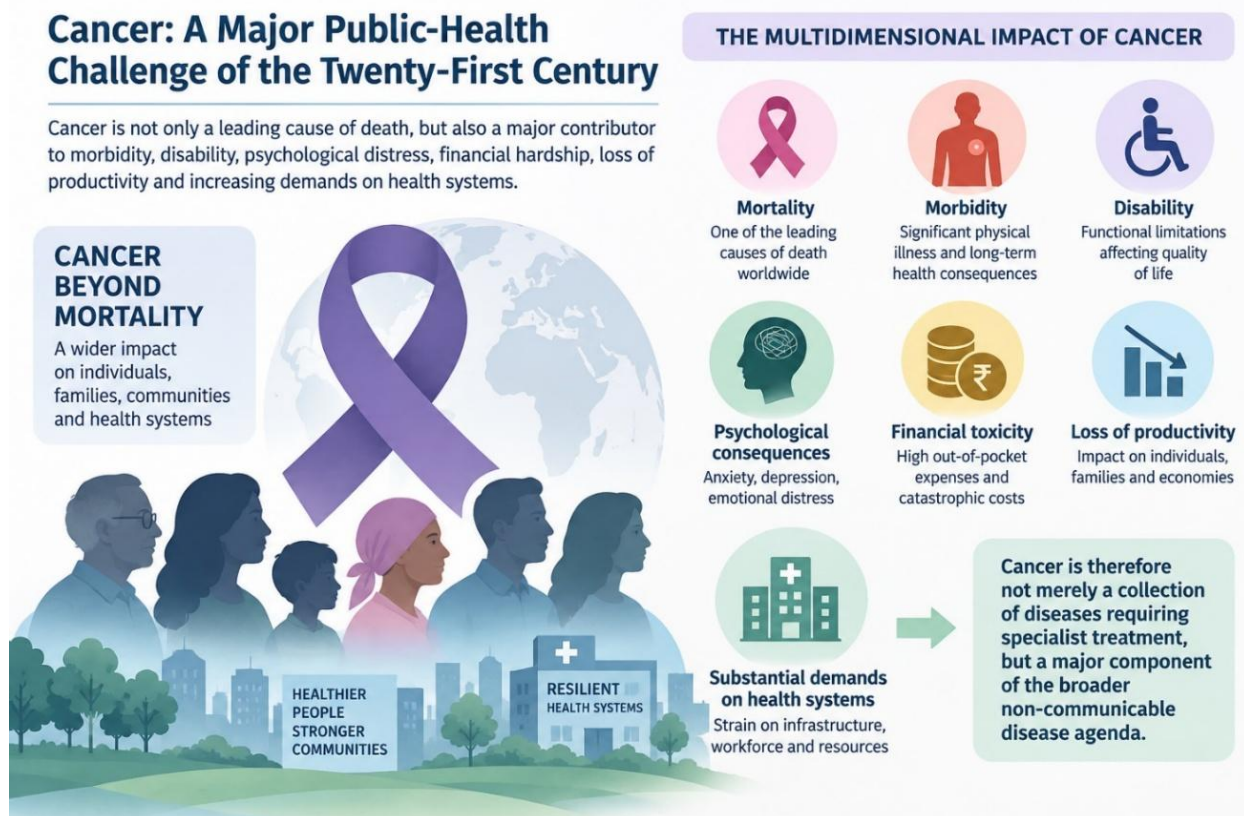
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KEYWORDS: Cancer prevention; cancer screening; early detection; primary healthcare; community medicine; non-communicable diseases; India; health promotion; referral; continuity of care.

INTRODUCTION

Cancer has emerged as one of the defining public-health challenges of the twenty-first century. Its importance extends beyond mortality and morbidity to include disability, psychological consequences, financial toxicity, loss of

productivity and substantial demands on health systems. Cancer should therefore be understood not merely as a collection of diseases requiring specialist treatment but as a major component of the broader non-communicable disease agenda.



The public-health response to cancer has traditionally been dominated by diagnosis and treatment. Although these remain essential, a substantial proportion of the cancer burden can be influenced through population-level interventions addressing preventable risk factors, vaccination, health promotion, screening and early diagnosis.

The role of **primary healthcare** is particularly important in this context. Primary healthcare represents the point at which health promotion, disease prevention, community participation, screening, early recognition and longitudinal care can be brought together. In a country as geographically and socioeconomically diverse as India, specialist oncology services alone cannot provide an adequate population-level response.

Cancer control therefore requires a continuum extending from the community to the health system:

Risk reduction → Health literacy → Risk assessment → Screening → Early recognition → Diagnostic confirmation → Referral → Treatment linkage → Follow-up → Survivorship and rehabilitation

The effectiveness of this continuum depends not only on the availability of individual interventions but also on how effectively these interventions are connected.

This review examines cancer prevention and early detection through a **community medicine and primary-healthcare lens**, with emphasis on the Indian context.



2. Why Cancer Should Be Embedded within the NCD Framework

Non-communicable diseases share several characteristics: long duration, complex causation, interaction between biological and social determinants, substantial behavioural components and the need for sustained healthcare engagement.

Cancer shares many of these characteristics.

Major modifiable exposures include:

- tobacco use;
- harmful alcohol consumption;
- unhealthy dietary patterns;
- overweight and obesity;
- physical inactivity;
- selected occupational exposures;
- environmental pollution;
- ultraviolet radiation; and
- certain infectious agents associated with carcinogenesis.

This creates an important opportunity for integration.

Instead of developing completely separate prevention systems for each disease, primary healthcare can address **common risk factors across multiple NCDs**.

For example:

Tobacco cessation

can simultaneously contribute to prevention of:

- oral cancer;
- lung cancer;
- oesophageal cancer;
- cardiovascular disease;
- chronic respiratory disease; and
- several other tobacco-associated conditions.

Similarly, promotion of physical activity, healthy diet and healthy body weight has relevance to both cancer and cardiometabolic diseases.

Thus, cancer prevention can be incorporated into existing NCD platforms rather than treated as an isolated programme.

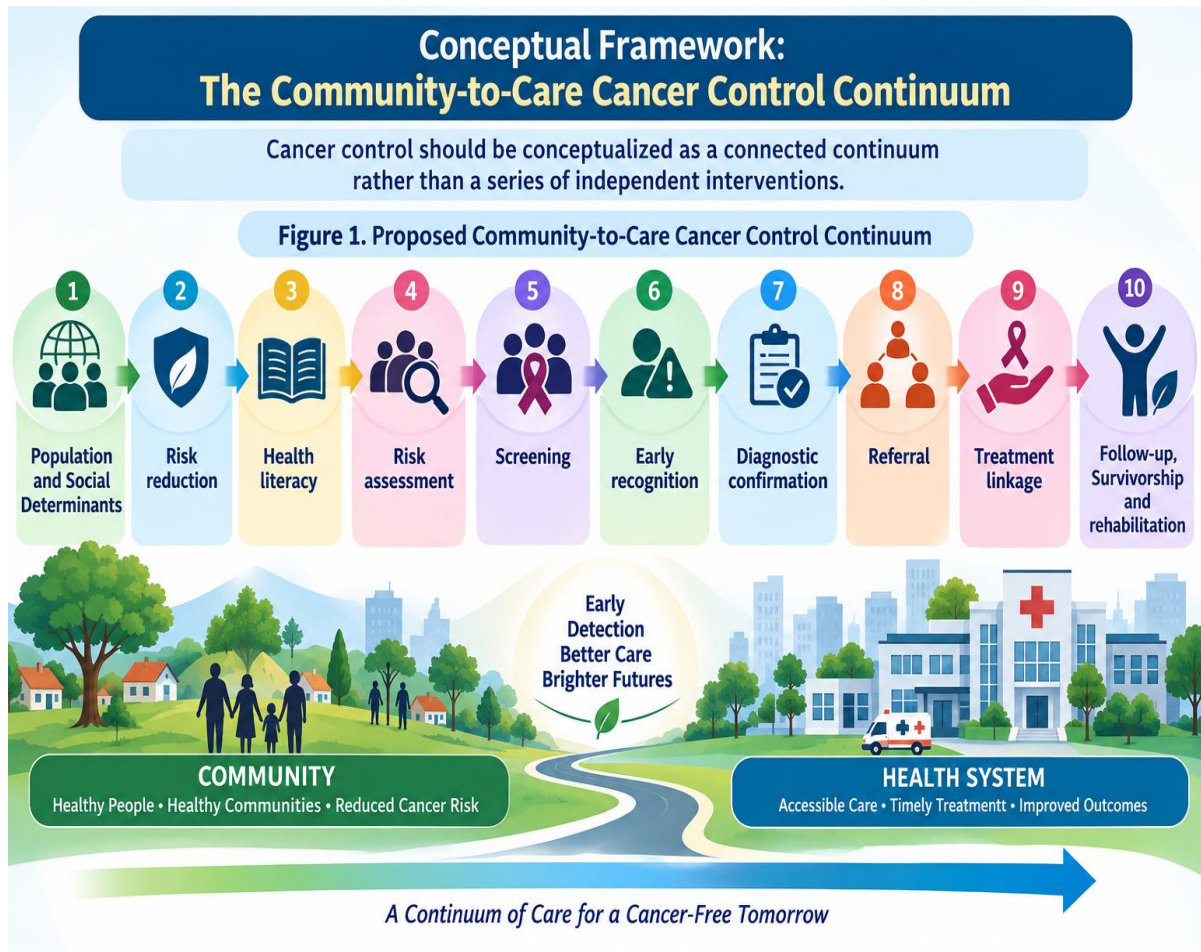
3. Conceptual Framework: The Community-to-Care Cancer Control Continuum

A central proposition of this review is that cancer control should be conceptualized as a connected continuum rather than a series of independent interventions.



Figure 1. Proposed Community-to-Care Cancer Control Continuum

This framework emphasises that screening alone cannot produce population-level benefit unless positive results are connected to timely diagnosis and appropriate care.



4. Cancer Prevention: The First Public-Health Opportunity

Cancer prevention represents the earliest point at which public-health intervention can modify disease risk.

A comprehensive prevention strategy should operate at multiple levels.

4.1 Tobacco Control

Tobacco remains one of the most important preventable causes of cancer.

In India, tobacco-related prevention has particular importance because tobacco is consumed in multiple forms, including smoking and smokeless tobacco.

Community-based tobacco control should include:

- prevention of tobacco initiation;
- tobacco cessation counselling;
- identification of tobacco users;
- brief behavioural interventions;
- referral for cessation support;
- community education;
- school-based prevention;
- enforcement of tobacco-control regulations.

Primary healthcare providers can integrate tobacco assessment into routine consultations rather than limiting tobacco counselling to dedicated clinics.

5. Alcohol and Cancer Prevention

Alcohol consumption is associated with increased risk of several cancers.

From a community medicine perspective, intervention should extend beyond individual counselling.

A comprehensive approach includes:

Population policy → Community education → Risk communication → Individual counselling → Early intervention

Health workers can identify harmful consumption patterns and provide brief interventions or referral where appropriate.

6. Diet, Obesity and Physical Inactivity

The relationship between lifestyle and cancer provides an opportunity to integrate cancer prevention into existing NCD programmes.

Primary healthcare can promote:

- balanced diets;
- increased consumption of appropriate plant-based foods;
- reduction of excessive energy-dense foods;
- healthy body weight;
- regular physical activity;
- reduction of sedentary behaviour.

The important public-health principle is that **cancer prevention does not require a separate lifestyle programme.**

The same infrastructure used for cardiovascular disease, diabetes and obesity prevention can support cancer prevention.

7. Infection-Associated Cancer Prevention

Some cancers are strongly associated with infectious agents.

Important examples include:

- human papillomavirus and cervical cancer;
- hepatitis B and hepatocellular carcinoma;
- Helicobacter pylori and gastric cancer.

This creates opportunities for **primary prevention through vaccination, infection prevention, appropriate treatment and screening strategies.**

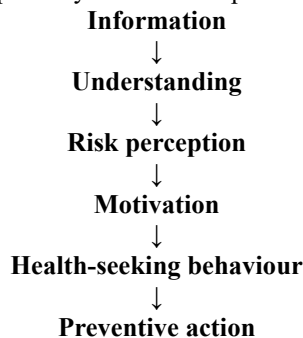
HPV vaccination, in particular, illustrates the importance of linking immunization policy with long-term cancer prevention.

8. Community Health Literacy and Cancer Prevention

Knowledge alone does not necessarily produce healthier behaviour.

A more useful public-health construct is **action-oriented health literacy.**

The pathway can be conceptualized as:



This distinction is particularly important for populations where misconceptions, stigma, fear and fatalistic beliefs may contribute to delayed presentation.

Community health workers can play a critical role in translating technical cancer information into locally understandable communication.

9. Community Health Workers as a Link between Population and Primary Healthcare

Community health workers represent a potentially important bridge between households and health facilities.

Within cancer control, their potential functions include:

- health education;
- identification of risk behaviours;
- tobacco cessation support;
- promotion of vaccination;
- awareness regarding cancer warning signs;
- mobilization for screening;
- facilitation of referral;
- follow-up of individuals with abnormal screening results;
- support for treatment adherence;

- communication between households and healthcare facilities.

The role should, however, be carefully designed to avoid inappropriate expansion of workload without adequate training, supervision and referral support.

10. Population-Based Cancer Screening

Screening occupies an important position between primary prevention and early diagnosis.

However, screening should not be equated simply with testing. An effective screening programme requires:

Eligible population identification

Screening

Positive result identification

Diagnostic evaluation

Confirmation

Treatment initiation

Follow-up

If the pathway stops after screening, the population benefit may be substantially reduced.

Therefore, the appropriate public-health question is not:

“How many people were screened?”

but rather:

“How effectively did screening lead to timely diagnosis and appropriate care?”

This distinction has major implications for programme evaluation.

11. Breast Cancer

Breast cancer represents an important component of the cancer burden and requires attention to both awareness and timely diagnosis.

Community-level strategies may include:

- awareness of breast health;
- recognition of warning symptoms;
- reduction of barriers to seeking care;
- appropriate screening approaches according to national recommendations;
- efficient referral;
- diagnostic linkage.

The primary healthcare system can contribute to the identification of symptomatic individuals and facilitate movement through the diagnostic pathway.

12. Cervical Cancer

Cervical cancer provides a particularly important example of the potential for prevention and early detection.

Its control involves several interconnected strategies:

HPV prevention

•

Screening

•

Early identification of abnormalities

•

Diagnostic evaluation

•

Treatment of precancerous lesions

•

Follow-up

The cervical cancer pathway demonstrates why prevention, screening and primary healthcare should not operate as separate silos.

13. Oral Cancer

Oral cancer is particularly relevant to community medicine in India because of the country's substantial tobacco and smokeless-tobacco burden.

Primary healthcare and community-level interventions may emphasize:

- tobacco cessation;
- recognition of persistent oral lesions;
- identification of high-risk individuals;
- screening where recommended;
- prompt referral;
- reduction of diagnostic delay.

Community awareness concerning persistent oral ulcers, unexplained growths, abnormal patches and other concerning symptoms may contribute to earlier healthcare contact.

14. Early Diagnosis: The Missing Link

One of the most important distinctions in cancer control is the difference between **screening** and **early diagnosis**.

Screening generally targets apparently healthy populations.

Early diagnosis focuses on individuals who already have symptoms or signs suggestive of cancer.

The latter requires:

Symptom recognition → Healthcare seeking → Clinical assessment → Diagnostic investigation → Confirmation →

Referral

Delays can occur at every stage.

Patient-level delay

- lack of awareness;
- fear;
- stigma;
- financial limitations;
- competing responsibilities.

Provider-level delay

- missed warning signs;
- inadequate diagnostic facilities;
- inappropriate empirical treatment;
- delayed referral.

Health-system delay

- limited specialist availability;
- transportation barriers;
- fragmented referral;
- diagnostic waiting periods;
- financial barriers.

Therefore, reducing diagnostic delay requires a **multi-level intervention**, not merely awareness campaigns.

15. Referral Pathways and Continuity of Care

A cancer-control system is only as strong as its weakest transition.

An individual may successfully move from:

Community → Screening

but fail to move from:

Screening → Diagnosis

or:

Diagnosis → Treatment

or:

Treatment → Follow-up

This phenomenon can be understood as **care-continuity loss**.

A robust referral system should include:

1. clear referral criteria;
2. designated referral facilities;
3. communication between levels;
4. tracking of referred patients;
5. mechanisms for follow-up;
6. feedback to the referring facility.

The primary-healthcare facility should not necessarily provide every component of cancer care. Rather, it should function as an **effective coordinator and navigator within the health system**.

16. Digital Health and Cancer Control

Digital health technologies provide opportunities to strengthen the cancer continuum.

Potential applications include:

- electronic screening registers;
- digital risk assessment;
- appointment reminders;
- referral tracking;
- teleconsultation;
- patient navigation;
- follow-up reminders;
- community-health-worker decision support;
- population-level surveillance.

A useful model is:



Such systems may reduce information loss between levels of care.

However, digital interventions must account for:

- digital literacy;
- connectivity;
- language;
- privacy;
- interoperability;
- workforce workload;
- data quality;
- cybersecurity;
- unequal access to technology.

Digitalization should therefore **strengthen human-centred healthcare rather than replace it.**

17. Health Equity in Cancer Prevention and Early Detection

Cancer prevention and screening programmes can inadvertently widen health inequalities if they disproportionately reach populations that already have better access to healthcare.

Potentially underserved populations include:

- rural communities;
- economically disadvantaged groups;
- geographically remote populations;
- individuals with limited health literacy;
- older adults;
- marginalized communities;
- populations with limited access to specialist services.

Equity-oriented cancer control therefore requires:

Universal policy + targeted implementation

rather than assuming that the same intervention will produce equal benefits across all populations.

18. Barriers to Integration

Several barriers can undermine cancer integration into primary healthcare.

Health-system barriers

- workforce shortages;
- competing NCD priorities;
- inadequate diagnostic infrastructure;
- fragmented referral systems;
- limited monitoring mechanisms.

Community barriers

- stigma;
- misconceptions;
- fear of cancer;
- low perceived susceptibility;
- cultural barriers.

Economic barriers

- transportation costs;

- diagnostic expenses;
- treatment-related financial burden;
- loss of wages.

Geographic barriers

- distance from diagnostic centres;
- uneven distribution of oncology services;
- rural–urban disparities.

Programme barriers

- inadequate follow-up;
- incomplete documentation;
- poor linkage between screening and treatment;
- insufficient programme evaluation.

19. Opportunities for Strengthening Cancer Control

The review identifies several strategic opportunities.

19.1 Integrate cancer into existing NCD services

Cancer prevention can be incorporated into routine NCD risk assessment rather than creating completely parallel structures.

19.2 Strengthen community participation

Community-based organizations, health workers and local leadership can improve awareness and programme acceptance.

19.3 Build screening-to-treatment pathways

Screening programmes should include mechanisms for diagnostic confirmation and referral.

19.4 Introduce patient navigation

A designated navigation mechanism can help individuals move through complex healthcare pathways.

19.5 Use digital tools selectively

Technology can support tracking, reminders and communication where infrastructure permits.

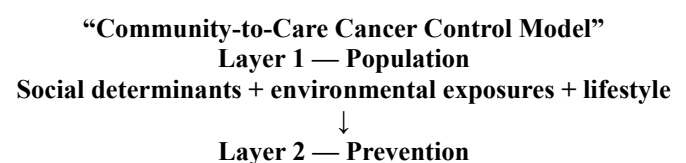
19.6 Measure outcomes beyond screening coverage

Programme indicators should include:

- screening coverage;
- positivity;
- diagnostic completion;
- time to diagnosis;
- treatment initiation;
- loss to follow-up;
- stage at diagnosis;
- equity indicators.

20. Proposed Public-Health Model

Based on the synthesis presented in this review, we propose the following:





21. Research Gaps

The literature indicates several areas requiring further investigation.

Gap 1

Limited evidence on integrated **community-to-diagnosis pathways** rather than isolated screening interventions.

Gap 2

Insufficient evidence regarding the long-term effectiveness of community-health-worker involvement in cancer control.

Gap 3

Need for better understanding of **screening-to-treatment loss**.

Gap 4

Limited evaluation of equity-sensitive cancer-screening models.

Gap 5

Need for implementation research examining how digital health can function within routine primary healthcare.

Gap 6

Limited evidence on locally adapted health-literacy interventions.

Gap 7

Need to evaluate cancer-control interventions using **patient-centred and system-level outcomes**, rather than screening coverage alone.

22. Implications for Community Medicine

Cancer control provides an opportunity to expand the role of Community Medicine beyond conventional health education and screening.

The discipline can contribute to:

- population risk assessment;
- epidemiological surveillance;
- programme planning;
- screening evaluation;
- implementation science;
- health-system research;
- community participation;
- health economics;
- health equity;
- behavioural interventions;
- digital public health.

Thus, cancer control should be viewed as a **population-health and health-system challenge**, not exclusively as an oncology problem.

Homoeopathic Materia Medica and Supportive Symptom-Oriented Care in Cancer

Selected Homoeopathic Materia Medica: Symptom-Oriented Therapeutic Considerations in Patients Receiving Cancer Care

Homoeopathic Remedy	Characteristic Symptom Picture	Possible Supportive Context*	Important Clinical Consideration
Arsenicum album	Marked anxiety, restlessness, weakness, insecurity and exhaustion	Anxiety/restlessness associated with illness	Should not replace psychological or medical management
Nux vomica	Irritability, hypersensitivity, nausea, digestive discomfort and sensitivity to stimuli	Symptom-oriented consideration for gastrointestinal discomfort	Persistent vomiting/nausea requires medical evaluation
Phosphorus	Fatigue, anxiety, sensitivity, thirst and tendency to easy exhaustion	Supportive symptom framework in selected patients	Symptoms require correlation with clinical status
Sepia	Fatigue, emotional exhaustion, weakness and altered well-being	Supportive consideration for selected constitutional symptom patterns	Does not constitute cancer treatment
Ignatia amara	Emotional distress, grief, anxiety and variable functional symptoms	Supportive consideration for emotional symptoms	Significant depression/anxiety requires appropriate mental-health care
Gelsemium	Weakness, fatigue, trembling, drowsiness and apprehension	Symptom-oriented consideration for fatigue/anxiety	New or severe neurological symptoms require evaluation
Carbo vegetabilis	Marked weakness, exhaustion, abdominal discomfort and sensation of needing air	Historical materia-medica consideration for severe weakness	Breathlessness is a clinical red flag requiring assessment
China officinalis	Weakness and exhaustion associated traditionally with fluid/blood loss	Historical symptom-oriented consideration for fatigue	Anaemia, bleeding or nutritional deficiency must be investigated
Phytolacca decandra	Throat/oral discomfort, glandular symptoms and marked soreness	Symptom-oriented materia-medica consideration	Persistent oral/throat lesions require cancer evaluation

Condurango	Traditionally associated with oesophageal/gastric symptomatology and difficulty swallowing	Historical materia-medica reference	Dysphagia is a red-flag symptom requiring prompt investigation
Hydrastis canadensis	Thick, tenacious secretions, digestive weakness and mucosal complaints	Supportive symptom-oriented consideration	Persistent gastrointestinal symptoms require conventional evaluation
Lycopodium clavatum	Bloating, abdominal distension, digestive discomfort and early satiety	Symptom-oriented consideration for gastrointestinal complaints	Persistent weight loss/early satiety requires investigation

* **Interpretation:** This column refers to traditional homoeopathic materia-medica symptom associations and should **not be interpreted as evidence that the remedy treats, reduces, or prevents malignancy**,

Homoeopathy and Supportive Cancer Care:

Homoeopathic materia medica may be discussed within an integrative-care framework as a historical and complementary system of symptom description and individualized therapeutic consideration. In the context of cancer care, however, such considerations should remain supportive and symptom-oriented rather than being presented as alternatives to

evidence-based cancer screening, diagnosis, surgery, radiotherapy, systemic therapy, palliative care or other established interventions. Any complementary intervention should be evaluated for potential interactions, delays in appropriate treatment and patient safety. Persistent, progressive or unexplained symptoms should prompt appropriate medical investigation and referral.

23. Future Directions

Future cancer-control strategies in India should increasingly emphasize:

Prevent → Identify → Confirm → Refer → Treat → Follow → Recover



The effectiveness of this approach will depend on strengthening the interfaces between communities, primary healthcare facilities, diagnostic services and specialized cancer centres.

Future research should prioritize:

1. implementation research;
2. rural cancer-control models;
3. community-health-worker interventions;
4. digital referral systems;
5. equity-sensitive screening;

6. patient navigation;
7. cost-effectiveness;
8. cancer-care cascades;
9. stage-at-diagnosis monitoring;
10. longitudinal evaluation of primary-healthcare interventions.

24. CONCLUSION

Cancer represents a major component of the non-communicable disease burden and requires a comprehensive public-health response extending beyond specialist treatment.

In India, primary healthcare provides a strategic platform for integrating cancer prevention, community awareness, risk assessment, screening, early diagnosis, referral and continuity of care. The success of cancer-control programmes should not be measured solely by the number of individuals reached or screened. Rather, the critical measure is whether individuals move successfully through the entire pathway from risk reduction to timely diagnosis and appropriate care.

The proposed Community-to-Care Cancer Control Continuum provides a conceptual framework for linking population

prevention with primary healthcare, diagnostic services and cancer treatment. Such integration may help reduce fragmentation, improve continuity, strengthen health equity and increase the public-health impact of cancer-control programmes.

Ultimately, the most effective cancer-control system is not one that begins at the oncology centre—it is one that begins within the community and continues throughout the health system.

Suggested Table for the Manuscript

Table 1. Integrated Community-Based Framework for Cancer Control within Primary Healthcare

Domain	Community-Level Intervention	Primary Healthcare Role	Expected Outcome
Risk reduction	Tobacco/alcohol counselling, lifestyle education	Risk assessment & counselling	Reduced exposure
Health literacy	Awareness campaigns	Individual counselling	Improved knowledge and action
Vaccination	Community mobilization	Immunization services	Reduced infection-associated cancer risk
Screening	Mobilization of eligible population	Screening coordination	Earlier identification
Early diagnosis	Recognition of warning symptoms	Clinical assessment	Reduced diagnostic delay
Referral	Patient navigation	Referral coordination	Timely specialist assessment
Treatment linkage	Follow-up support	Coordination with higher centres	Earlier treatment initiation
Continuity	Community follow-up	Monitoring and counselling	Reduced loss to follow-up
Survivorship	Family/community support	Longitudinal care	Improved quality of life

Table 2. Major Barriers and Potential Solutions for Community-Based Cancer Control

Challenge	Public-Health Consequence	Potential Strategy
Low awareness	Delayed presentation	Health-literacy interventions
Screening hesitancy	Low coverage	Community engagement
Geographic barriers	Missed diagnosis	Outreach/mobile services
Weak referral	Loss after positive screening	Referral tracking
Diagnostic capacity gaps	Delayed confirmation	Strengthened diagnostic networks
Financial barriers	Delayed care	Financial protection
Workforce constraints	Poor programme implementation	Training and task-sharing
Digital divide	Unequal access	Inclusive digital-health design

Author Contributions

Dr Sachin Madhukarrao Bhise: Conceptualization of the review topic and development of the Community-to-Care Cancer Control Continuum; formulation of the review framework; literature identification and synthesis; analysis and interpretation of the evidence; development of tables and conceptual figures; drafting of the manuscript; critical revision of the manuscript; and overall coordination of the study.

Dr. Sneha Khatri: Contribution to literature searching and evidence appraisal; interpretation of relevant evidence concerning cancer prevention, screening, early detection and

primary healthcare; critical evaluation of the manuscript; contribution to the discussion and clinical/public-health interpretation; review and refinement of tables and conceptual framework; and final approval of the manuscript.

Both authors: Participated in the development and critical revision of the manuscript, approved the final version, and agree to be accountable for all aspects of the work, including the accuracy and integrity of the content.

CRedit Author Statement

CRedit taxonomy as:

Contributor Role	Dr Sachin Madhukarrao Bhise	Dr. Sneha Khatri
Conceptualization	✓	✓
Methodology	✓	✓
Literature search	✓	✓
Evidence synthesis	✓	✓
Analysis & interpretation	✓	✓
Conceptual framework development	✓	✓
Tables & figures	✓	✓
Original manuscript drafting	✓	—
Critical revision	✓	✓
Supervision/coordination	✓	—
Final approval	✓	✓

Accountability for the work	✓	✓
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REFERENCES

1. Asthana S, Patil RS, Labani S. Tobacco-related cancers in India: a review of incidence reported from population-based cancer registries. *Indian J Med Paediatr Oncol.* 2016;37(3):152-157. doi:10.4103/0971-5851.190357.
2. Bellhouse S, McWilliams L, Firth J, Yorke J, French DP. Are community-based health worker interventions an effective approach for early diagnosis of cancer? A systematic review and meta-analysis. *Psychooncology.* 2018;27(4):1089-1099. doi:10.1002/pon.4575.
3. Brand NR, Qu LG, Chao A, Ilbawi AM. Delays and barriers to cancer care in low- and middle-income countries: a systematic review. *Oncologist.* 2019;24(12): e1371-e1380. doi:10.1634/theoncologist.2019-0057.
4. Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2024;74(3):229-263. doi:10.3322/caac.21834.
5. Chen M, et al. Patient navigation in cancer treatment: a systematic review. *Curr Oncol Rep.* 2024;26(5):504-537. doi:10.1007/s11912-024-01514-9.
6. Dalton M, Holzman E, Erwin E, Michelen S, Rositch AF, Kumar S, et al. Patient navigation services for cancer care in low- and middle-income countries: a scoping review. *PLoS One.* 2019;14(10): e0223537. doi: 10.1371/journal.pone.0223537.
7. GBD 2019 Cancer Risk Factors Collaborators. The global burden of cancer attributable to risk factors, 2010-19: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet.* 2022;400(10352):563-591. doi:10.1016/S0140-6736(22)01438-6.
8. Kurkure AP, Yeole BB. Social inequalities in cancer with special reference to South Asian countries. *Asian Pac J Cancer Prev.* 2006;7(1):36-40.
9. Kulothungan V, Ramamoorthy T, Sarveswaran G, Jadhav SY, Mathur P. Association of tobacco use and cancer incidence in India: a systematic review and meta-analysis. *JCO Glob Oncol.* 2024;10: e2400152. doi:10.1200/GO.24.00152.
10. Mathur P, Sathishkumar K, Chaturvedi M, Das P, Sudarshan KL, Santhappan S, et al. Cancer statistics, 2020: report from National Cancer Registry Programme, India. *JCO Glob Oncol.* 2020; 6:1063-1075. doi:10.1200/GO.20.00122.
11. Ministry of Health and Family Welfare, Government of India. Operational guidelines: prevention, screening and control of common non-communicable diseases: hypertension, diabetes and common cancers (oral, breast, cervix). New Delhi: National Health Mission; 2016.
12. Qu LG, Brand NR, Chao A, Ilbawi AM. Interventions addressing barriers to delayed cancer diagnosis in low- and middle-income countries: a systematic review. *Oncologist.* 2020;25(9): e1382-e1395. doi:10.1634/theoncologist.2019-0804.
13. Rajaraman P, Anderson BO, Basu P, Belinson JL, D'Cruz A, Dhillon PK, et al. Recommendations for screening and early detection of common cancers in India. *Lancet Oncol.* 2015;16(7): e352-e361. doi:10.1016/S1470-2045(15)00078-9.
14. Sankaranarayanan R, Esmy PO, Rajkumar R, Muwonge R, Swaminathan R, Shanthakumari S, et al. Effect of visual screening on cervical cancer incidence and mortality in Tamil Nadu, India: a cluster-randomised trial. *Lancet.* 2009;370(9585):398-406.
15. Sankaranarayanan R, Ramadas K, Thomas G, Muwonge R, Thara S, Mathew B, et al. Effect of screening on oral cancer mortality in Kerala, India: a cluster-randomised controlled trial. *Lancet.* 2005;365(9475):1927-1933. doi:10.1016/S0140-6736(05)66658-5.
16. Sankaranarayanan R, Ramadas K, Thara S, Muwonge R, Thomas G, Anju G, et al. long-term effect of visual screening on oral cancer incidence and mortality in a randomized trial in Kerala, India. *Oral Oncol.* 2013;49(4):314-321. doi: 10.1016/j.oraloncology.2012.11.004.
17. Sinha DN, Suliankatchi Abdulkader R, Gupta PC. Smokeless tobacco-associated cancers: a systematic review and meta-analysis of Indian studies. *Int J Cancer.* 2016;138(3):700-710. doi:10.1002/ijc.29884.
18. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2021;71(3):209-249. doi:10.3322/caac.21660.
19. Syrnioti G, et al. social determinants of cancer disparities. *Ann Surg Oncol.* 2023. doi:10.1245/s10434-023-14200-0.
20. Torre LA, Islami F, Siegel RL, Ward EM, Jemal A. Global cancer in women: burden and trends. *Cancer Epidemiol Biomarkers Prev.* 2017;26(4):444-457. doi: 10.1158/1055-9965.EPI-16-0858.
21. Whiteman DC, Wilson LF, et al. The fractions of cancer attributable to modifiable factors: a global review. *Cancer Epidemiol.* 2016; 44:1-12.
22. Wild CP, Weiderpass E, Stewart BW, editors. World cancer report: cancer research for cancer prevention. Lyon: International Agency for Research on Cancer; 2020.

23. World Health Organization. Cancer control: knowledge into action: WHO guide for effective programmes—prevention. Geneva: World Health Organization; 2007.
24. World Health Organization. Guide to cancer early diagnosis. Geneva: World Health Organization; 2017.
25. World Health Organization. A short guide to cancer screening: increase effectiveness, maximize benefits and minimize harm. Copenhagen: WHO Regional Office for Europe; 2022.

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