National Vector Borne Disease Control Programme (NVBDCP)

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The **National Vector Borne Disease Control Programme (NVBDCP)** is a centrally sponsored scheme of the Government of India aimed at preventing and controlling major vector-borne diseases. It operates under the **National Health Mission (NHM)** and is implemented by the Directorate of NVBDC**P under the Ministry of Health and Family Welfare**.

The programme covers major diseases such as **malaria, dengue, chikungunya, Japanese encephalitis, kala-azar, and lymphatic filariasis**. It focuses on surveillance, early diagnosis, treatment, and vector control to reduce illness and deaths across the country.

What are Vector-Borne Diseases?

Vector-borne diseases are illnesses caused by pathogens such as **viruses, bacteria, or parasites** that are transmitted to humans through vectors like mosquitoes, ticks, and fleas. These diseases are common in tropical regions and can lead to serious health complications if not prevented or treated in time.

- Transmitted through vectors like mosquitoes, sandflies, ticks, and fleas
- Caused by **viruses**, **bacteria**, **or parasites**
- Spread through **bites of infected vectors**
- Common in **tropical and subtropical regions**
- Examples: Malaria, Dengue, Chikungunya, Japanese Encephalitis, Kala-azar
- Can lead to **severe illness or death** if untreated

Major Sub-Programmes under NVBDCP

The Major Sub-Programmes under the National Vector Borne Disease Control Programme (NVBDCP) focus on controlling and eliminating key vector-borne diseases through targeted interventions. These programmes have been highlighted below in brief.

1. Kala-azar Control Programme

Kala-azar (Visceral Leishmaniasis) is a serious parasitic disease transmitted by the bite of infected female sandflies.

- Endemic mainly in **Bihar, Jharkhand, West Bengal, and eastern Uttar Pradesh**, with a high burden in rural and poor communities
- Caused by *Leishmania donovani* parasite affecting internal organs like liver and spleen
- Focus on **early case detection** through active surveillance and rapid diagnostic kits
- Ensures **complete and free treatment** using effective drugs such as Amphotericin-B
- Implementation of **Indoor Residual Spraying (IRS)** to kill sandflies
- Distribution of **Long-Lasting Insecticidal Nets (LLINs)** in endemic areas
- Strong emphasis on **vector habitat reduction** and sanitation improvements
- Regional collaboration through agreements with neighboring countries for elimination
- Target: Reduce incidence to **<1 case per 10,000 population at block level**

2. National Filaria Control Programme (NFCP)

Lymphatic Filariasis is a chronic mosquito-borne disease that can lead to permanent disability such as elephantiasis.

- One of the **oldest public health programmes**, launched in 1955
- Caused mainly by *Wuchereria bancrofti* and *Brugia malayi* parasites
- Transmitted by mosquito species like **Culex, Anopheles, and Mansonia**
- Implementation of **Mass Drug Administration (MDA)** using DEC and Albendazole to entire at-risk population
- Introduction of **triple-drug therapy (IDA)** in select districts to accelerate elimination
- Focus on **morbidity management and disability prevention (MMDP)** for affected individuals
- Anti-larval measures and vector control in urban and rural areas
- Regular monitoring of **microfilaria rate** through night blood surveys
- Target: **Elimination of Lymphatic Filariasis as a public health problem**

3. Japanese Encephalitis (JE) Control Programme

Japanese Encephalitis is a viral brain infection transmitted by Culex mosquitoes and maintained in animal reservoirs.

- A **zoonotic disease**, with pigs and water birds acting as amplifying hosts
- High prevalence in **rural and agricultural regions**, especially rice-growing areas
- Focus on **vaccination campaigns**, particularly for children in endemic districts
- Strengthening **surveillance systems** for early detection of outbreaks
- Establishment of **specialized treatment facilities** and pediatric ICUs
- Vector control through **fogging, larval control, and environmental management**
- Public awareness regarding **safe animal rearing practices** and sanitation
- Emphasis on **case management to reduce fatality rates**
- Continuous monitoring by central and state health authorities

4. National Anti-Malaria Programme

Malaria is a life-threatening disease caused by *Plasmodium* parasites and transmitted by female Anopheles mosquitoes.

- Focus on **high-burden districts and tribal areas** where transmission is high
- Distribution of **Long-Lasting Insecticidal Nets (LLINs)** to vulnerable populations
- Use of **Rapid Diagnostic Tests (RDTs)** for quick and accurate detection
- Treatment using **Artemisinin-based Combination Therapy (ACT)**
- **Indoor Residual Spraying (IRS)** in high-risk areas
- Seasonal malaria chemoprevention in selected regions
- Strengthening surveillance through **real-time reporting systems**
- Community awareness on prevention and early treatment
- Goal: **Eliminate malaria by 2027** with phased reduction strategy

5. Dengue Control Programme

Dengue is a fast-spreading viral disease transmitted by Aedes mosquitoes that breed in clean stagnant water.

- Strong correlation with **urbanization and monsoon season**
- Focus on **source reduction** by eliminating breeding sites like water containers, coolers, and tyres
- Promotion of **weekly dry day** to prevent water stagnation
- Community-based campaigns for **behavior change and awareness**
- Strengthening of **laboratory diagnosis** using ELISA and NS1 tests
- Training healthcare workers for **clinical management of severe dengue cases**
- Emergency response measures during outbreaks, including **fogging and spraying**
- Coordination with municipal bodies for sanitation and waste management
- Aim: **Reduce incidence and prevent outbreaks through proactive measures**

6. Chikungunya Control Programme

Chikungunya is a viral disease characterized by fever and severe joint pain, transmitted by Aedes mosquitoes.

- Common in **urban and semi-urban areas**, often occurring alongside dengue outbreaks
- No specific antiviral treatment; focus is on **symptomatic relief** (pain and fever management)
- Prevention through **vector control and elimination of breeding sites**
- Public awareness campaigns on **personal protection and sanitation practices**
- Surveillance to monitor **spread and seasonal trends**
- Strengthening diagnostic facilities for early identification
- Integration with dengue control activities for better efficiency
- Focus on reducing **disease burden and improving quality of life** for affected individuals

Strategies Adopted Under NVBDCP

The National Vector Borne Disease Control Programme follows a comprehensive and integrated approach to prevent and control vector-borne diseases through medical, environmental, and community-based strategies.

- Emphasis on **Integrated Vector Management (IVM)** using a mix of biological, chemical, and environmental methods for effective and sustainable control
- **Disease surveillance systems** including active, passive, and sentinel surveillance for early detection and timely response to outbreaks
- **Early diagnosis and prompt treatment** through rapid diagnostic tests and free treatment facilities to reduce complications and deaths
- Implementation of **vector control measures** such as indoor residual spraying and distribution of insecticide-treated bed nets
- Focus on **environmental management** by eliminating stagnant water, improving sanitation, and reducing mosquito breeding sites
- Use of **biological control methods** like larvivorous fish and eco-friendly agents to control mosquito larvae
- Application of **chemical control measures** such as larvicides and fogging during outbreaks to reduce vector population
- Promotion of **community participation and awareness** through health education and public involvement in prevention practices
- Adoption of **behaviour change communication (BCC)** to encourage long-term preventive habits among people
- Strengthening **healthcare infrastructure and capacity building** through training of health workers and improving diagnostic facilities
- Ensuring **intersectoral coordination** among different departments like health, sanitation, and urban development
- Special interventions like **vaccination for Japanese Encephalitis** and **Mass Drug Administration for Lymphatic Filariasis** to target specific diseases

Achievements of NVBDCP

The National Vector Borne Disease Control Programme has made significant progress in reducing the burden of major vector-borne diseases through improved surveillance, treatment, and prevention strategies.

- Significant **reduction in malaria cases and deaths** over the past decades
- Around **70-80% decline in malaria mortality** compared to earlier baseline levels
- Nearly **97% reduction in Kala-azar cases** since the 1990s in endemic regions
- Improved **coverage of Mass Drug Administration (MDA)** for Lymphatic Filariasis
- Decline in **microfilaria rates**, indicating progress towards elimination
- Strengthened **disease surveillance and reporting systems** across states
- Expansion of **diagnostic and treatment facilities** in rural and urban areas
- Increased **public awareness and community participation** in vector control
- Progress towards **malaria elimination target by 2027**
- Better **intersectoral coordination** for disease prevention and control

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