# Policy and Institutional Framework

# For

# Islamabad Deworming Initiative

*Office of Member (Social Sector & Devolution) and Health Section*

Planning Commission
Ministry of Planning, Development and Reform
Government of Pakistan

*In Collaboration with*

Line Ministries and Departments
Interactive Research & Development
Evidence Action &
Indus Health Network

TABLE OF CONTENTS


Acknowledgements 4
List of Acronyms 5
1. Background 6
2. The Need for Deworming in ICT 7
3. Goals of a Deworming Program in ICT 7
4. Establishing a Deworming Program in ICT 8
4.1. Target Population 8
4.1.1. School-Age Children 9
4.1.2. Children Under 5 Years and Women of Reproductive Age 9
4.2. Delivery Model 9
4.2.1. Delivery Model for Targeting School-Age Children 9
4.2.2. Delivery Model for Targeting Children Under 5 Years and Women of Reproductive Age 9
4.3. Program Stakeholders and Governance Structure 10
4.3.1 Multi-Stakeholder Committee for Deworm Islamabad Initiative - Composition and Roles 10
4.3.2 Implementation Committee (School-Based Deworming)- Composition and Roles 11
4.3.3 Implementation Committee (Deworming of Children Under 5 and Women of Reproductive Age)- Composition and Roles 12
4.4 Roles of the Planning Commission, Ministry of Planning, Development & Reform (M/o PD&R): 13
4.5 Roles of Health Stakeholders 14
4.6 Roles of Education Stakeholders 15
4.4. Alignment of Deworming with Global Guidelines, Targets and Commitments 17
4.5. Alignment of Deworming with Other Health and Education Programs and Policies in ICT and at National 17
5. Implementation Strategy for School-Based Deworming 18
5.1. Program Planning & Management 18
5.2. Drug Procurement & Management 19
5.2.1. Transportation and Storage of Drugs 19
5.2.2. Adverse Event Management 20
5.3. Training & Distribution 20
5.4. Public Awareness & Mobilization 21
5.5. Mass Drug Administration 22
5.6. Monitoring & Evaluation 22
5.6.1. Process Monitoring 23
5.6.2. Reporting of Coverage Data – Reverse Cascade 23
5.6.3. Independent Monitoring 24

**6. Program Financing** **24**
**7. Enforcement** **24**

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**List of Acronyms**

| | |
|---|---|
| CA&DD: | Capital Administration & Development Division |
| CDA: | Capital Development Authority |
| DMA: | Directorate of Municipal Administration |
| EMIS | Education Management Information System |
| FDE: | Federal Directorate of Education |
| FE&PT: | Federal Education & Provisional Training |
| GHD: | Global Health Directorate |
| HMIS | Health Management Information System |
| IB&NH | Information Broadcasting & National Heritage |
| ICT: | Islamabad Capital Territory |
| IDEAS: | Institute of Development & Economic Alternatives |
| IEC: | Information, Education & Communication |
| IHN: | Indus Health Network |
| IRD: | Interactive Research & Development |
| M&E: | Monitoring & Evaluation |
| M/o: | Ministry of |
| MCI: | Metropolitan Corporation Islamabad |
| MDA: | Mass Drug Administration |
| NHSR&C | National Health Services, Regulations & Coordination |
| P&D: | Planning & Development |
| PD&R: | Planning Development & Reform |
| PSDP | Public Sector Development Program |
| RA&IFH: | Religious Affairs & Inter Faith Harmony |
| SS&D: | Social Sector & Devolution |
| STH: | Soil-Transmitted Helminths |
| ToR: | Terms of Reference |
| WHO: | World Health Organization |

## 1. Background

The World Health Organization (WHO) estimates that over 1.5 billion people are infected globally with soil-transmitted helminths (STH), with 835 million children in need of treatment[1]. STH infections result from poor sanitation and hygiene conditions and tend to have highest prevalence in children of school-going age. The consequences of chronic worm infections in children are both widespread and debilitating. Worm infections interfere with nutrient uptake; can lead to anemia, malnourishment and impaired mental and physical development; and pose a serious threat to children's health, education, and productivity. Infected children are often too sick or tired to concentrate at school, or to attend at all. STH exacts a clear toll on human capital, hindering economic development, yet not all at-risk children are currently treated.

The WHO-recommended strategy is to control morbidity caused by STH infections through the periodic treatment with deworming medicines, without previous individual diagnosis, of at-risk populations. At-risk populations defined by WHO are the following groups living in areas where prevalence of STH exceeds 20% in the particular population group: young children (12-23 months of age); preschool children (12-23 months of age); school-age children; adolescent girls (10-19 years of age); women of reproductive age and pregnant women[2]. Deworming medications are safe, even for those not infected, and screening for infections costs 4-10 times the cost of treatment itself. Targeting school-age children through school-based deworming - the administration of safe, effective deworming drugs to children at schools - is considered a development "best buy" due to its impact on educational and economic outcomes coupled with the relative low cost of delivery. The school-based approach provides an easy way to treat large numbers of children through existing infrastructure, reaching them where they already are and leveraging higher numbers of teachers relative to health workers.

On January 15, 2018, the Ministry of National Health Services, Regulations and Coordination (M/o NHSR&C) convened a meeting in Islamabad to discuss the status of STH in Pakistan and the opportunities and path forward for establishing a school-based deworming program. Launching a high-quality school-based deworming program to reach children at scale could dramatically reduce the harm caused by STH on millions of children in Pakistan in a cost-effective manner. A subsequent meeting was organized by the Ministry of Planning, Development & Reform (M/o PD&R) on May 15, 2018 to discuss the status of STH in Islamabad Capital Territory (ICT). The Chief of Health, M/o PD&R, emphasized the need to establish a school-based deworming program in ICT, with close collaboration between the Federal Directorate of Education, M/o NHSR&C, stakeholders from the local ICT administration, and technical assistance partners. The Federal Secretary, M/o PD&R, recommended the establishment of a Multi-Stakeholder Committee for Deworm Islamabad Initiative under the leadership of Member Social Sector & Devolution to oversee the school-based deworming program in ICT.

A technical assistance partnership of Interactive Research and Development (IRD), Indus Health Network (IHN) and Evidence Action are providing comprehensive technical assistance to the ICT administration and federal government to plan, implement and monitor a school-based deworming program in ICT. Together, these three organizations have extensive experience to support the government: IRD works in close collaboration with health and education ministries to manage health intervention programs across Pakistan; IHN focuses on creating excellence-driven, comprehensive, compassionate, free of charge and replicable healthcare system accessible to all; and, Evidence Action has an established track record of supporting ministries of health and education in countries in Asia and Africa to launch and strengthen school-based deworming programs.

This ***Policy and Institutional Framework*** sets out the overall strategy for a school-based deworming program in ICT and provides a framework for program implementation.

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[1] World Health Organization. (2016). Soil-transmitted Helminth Infections (PCT databank). http://apps.who.int/neglected_diseases/ntddata/sth/sth.html

[2] Preventive chemotherapy to control soil-transmitted helminth infections in at-risk population groups. World Health Organization (2017). http://apps.who.int/iris/bitstream/handle/10665/258983/9789241550116-eng.pdf?sequence=1

## 2. The Need for Deworming in ICT

IRD, IHN and Evidence Action, together with the Institute of Development and Economic Alternatives (IDEAS) and WHO, collaborated with Pakistan's federal and provincial governments to carry out the first nationwide STH prevalence survey amongst school-age children in 2016. The WHO recommendation is that in areas where the prevalence of STH within particular at-risk population groups (see section 1) is between 20 and 50%, the particular at-risk populations should be dewormed once a year, and in areas with >50% prevalence, at-risk populations should be dewormed twice a year. The findings from the survey indicate that the prevalence of STH in school-age children across ICT exceeds 20% (figure 1). In accordance with WHO recommendations, annual deworming of children is needed in ICT. While in a very limited area of ICT the prevalence exceeds 50%, annual deworming is recommended to promote operational feasibility, particularly in the initial stages of program launch.

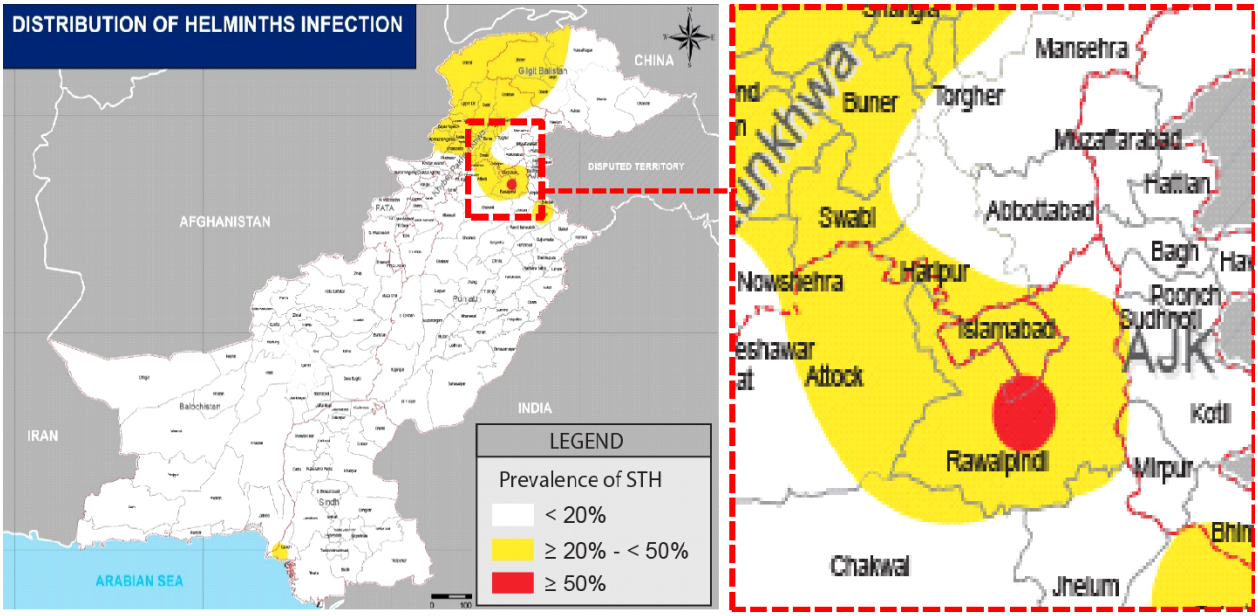



**Figure 1: STH prevalence in ICT**[3]

## 3. Goals of a Deworming Program in ICT

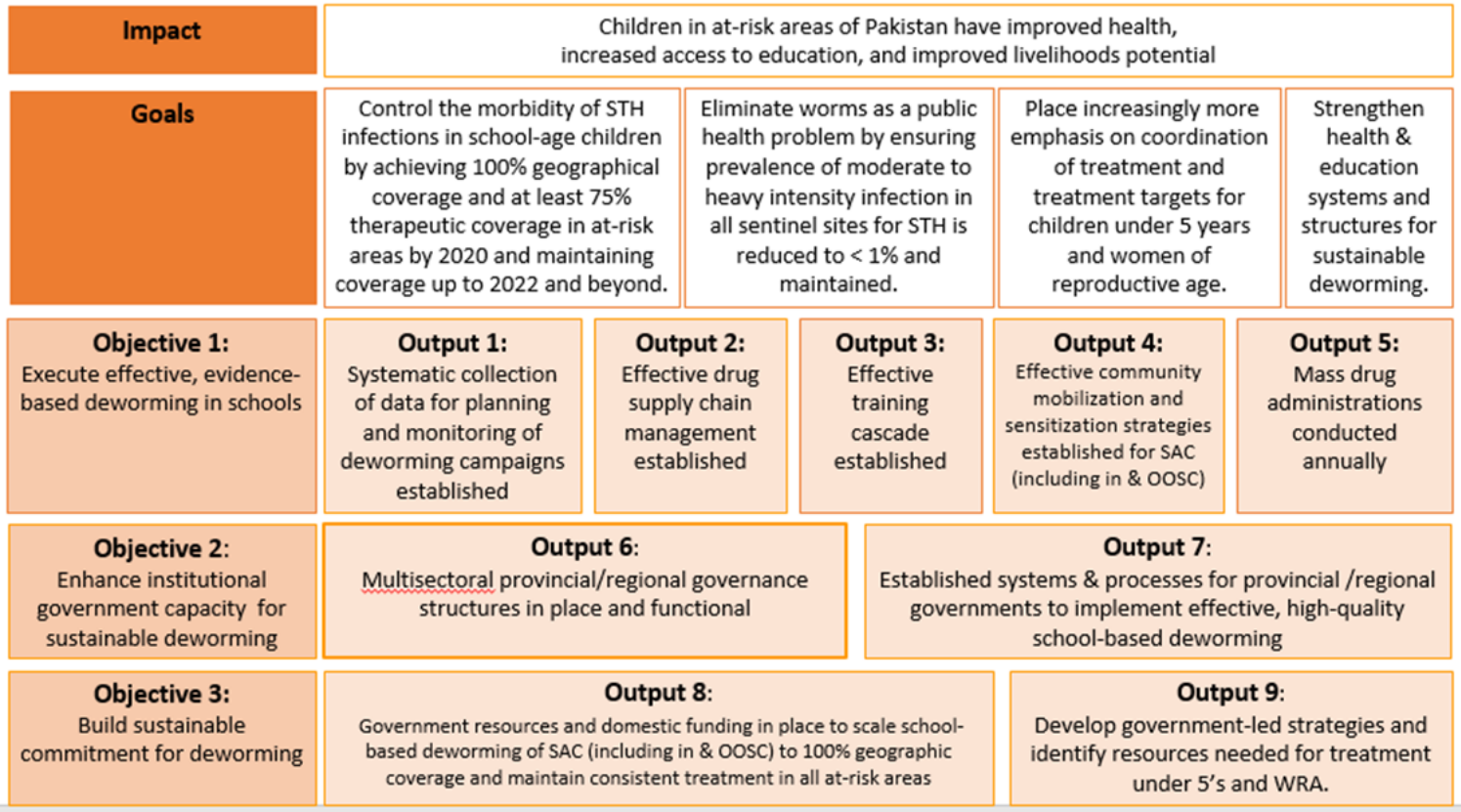
The aim of periodic administration of deworming medication is to control **morbidity**. Morbidity from STH is associated with the **intensity of infection**[4]. Periodic treatment of at-risk populations reduces the intensity of infection, protecting infected individuals from morbidity due to STH. **The goal of deworming in ICT is to reduce morbidity from STH to a level below which it would not be considered a public health problem**. STH is considered as a public health problem when the prevalence of STH infection of moderate and high intensity among school-age children is over 1%. To achieve this goal of morbidity control, it is important that deworming be sustained in at-risk areas. Implementing mass drug administrations (MDA) in accordance with WHO-recommended treatment strategies would allow the Government of ICT to prioritize resources and achieve the most cost-effective impact for the target population.

[3] Baseline Survey Report of Soil-Transmitted Helminths Prevalence in Pakistan (April 2017)

[4] Intensity of infection is a measure of the number of worms infecting an individual. WHO have three classifications of intensity of STH infection: light, moderate and heavy.

The theory of change for the program (figure 2) provides a framework for how the deworming program in ICT is expected to achieve its desired impact. The theory of change outlines the key objectives of the deworming program, the required outputs to achieve those objectives, how those outputs contribute to the goals of the program, and the ultimate impact of achieving the goals. Underlying this theory of change is that the Government of ICT is willing and able to commit funding and resources to build a sustainable program.

**Figure 2: Theory of Change**




## 4. Establishing a Deworming Program in ICT

With the need for mass deworming now established, the ICT administration and federal government have the opportunity to launch an evidence-based deworming program in ICT**.** Effectively targeting the three different target populations includes school-age children, children under 5 years and women of reproductive age, for mass deworming, requires different delivery models and compilation of stakeholders. School-based deworming is a key strategy that can be employed by the ICT administration and federal government to rapidly scale a cost-effective program treating at-risk school-age children (5 -15 years of age). The delivery model for targeting children under 5 years of age and women of reproductive age will be implemented by CDA/MCI and Health Department ICT Administration through their fixed facilities, outreach community-based workers, health service delivery outlets, and tertiary healthcare hospitals.

### 4.1. Target Population

Three at-risk populations in ICT will be targeted by deworming: school-age children (5-15 years); children under 5 years; and women of reproductive age (15-49 years).

### 4.1.1. School-*Age Children*

To achieve the goal of reducing morbidity caused by worm infection, the program target is to treat at least 75% of the school-age population in ICT. The national STH prevalence survey indicates that an estimated 570,000 children aged 5-15 years in ICT are at risk for STH Infection and stand to benefit from a mass deworming program, regardless of whether they attend public schools, private schools, religious schools, or are not enrolled in school. The program will strive to target all sub-populations. Stakeholders will assess the feasibility of reaching all sub-populations in the first year of the program; if deemed not feasible, stakeholders will endeavor to phase in sub-populations in subsequent years.

**School-age children: different sub-populations**

Deworming children in each of the target population groups (children enrolled at public schools, private schools, deeni madaris, and school-age children not enrolled at school) will provide unique challenges. Evidence Action has extensive experience supporting governments to target different population groups and the technical assistance partners will support the government stakeholders to devise strategies to reach all targeted

### 4.1.2. Children under 5 Years and Women of Reproductive Age

The Health Department ICT Administration, CDA/MCI and CA&DD will work out the size of the beneficiary population for these at-risk groups.

## 4.2. Delivery Model

### 4.2.1. Delivery Model for Targeting School-Age Children

School-age children can be cost-effectively targeted through school-based deworming, whereby treatment is delivered through existing education infrastructure, administered by teachers with support from the health system. This approach is highly cost-effective, well accepted by communities, and efficiently targets the population group at greatest risk for infection: school-age children. School-based deworming programs, implemented jointly by ministries of education and health, have proven successful in providing high treatment coverage and reducing STH infection in countries in Asia and Africa.

**The benefits of school-based deworming**

School-age children generally suffer the greatest intensity and morbidity and are particularly susceptible to developmental and behavioral deficits caused by worms; therefore, school-age children stand the most to gain from deworming. The school-based approach uses existing education infrastructure to reach children where they already are – at school. Teachers can be easily trained to safely deliver medication with oversight from the health system. School-based programs are designed to also reach non-enrolled children who can access free medication at schools alongside their enrolled counterparts. School-based deworming can reach upwards of 80% of school-age children through national programs implemented by Ministries of Health and Education. Tablets for school-age children are available at no cost through the WHO's drug donation program. The program model is extremely cost-effective, with a cost per child dewormed of less than US$0.50 per treatment.

Evidence Action has extensive experience providing support to governments to plan and implement school-based deworming programs, contextualizing program design to suit local needs in line with the existing evidence and cost-effective implementation modalities.

### 4.2.2. Delivery Model for Targeting Children under 5 Years and Women of Reproductive Age

This component will be implemented by Health Department ICT Administration through their fixed health facilities and outreach community-based workers (LHWs, CMWs and other such workers), health service delivery outlets of CDA/ MCI, and Tertiary Healthcare Hospitals under CA&DD. A PC-I shall be prepared (single or multiple as per decision of the stakeholders) to obtain federal government funding to this effect.

### 4.3. Program Stakeholders and Governance Structure

The deworming program will be led by the Ministry of Planning, Development & Reform and implemented by the key stakeholders within the federal government of Pakistan and ICT Administration, with comprehensive technical assistance for school-based deworming provided by Interactive Research & Development (IRD), Indus Health Network (IHN) and Evidence Action. The key government stakeholders are:

- Ministry of Planning, Development & Reform;
- Ministry of National Health Services Regulations & Coordination;
- Ministry of Federal Education & Professional Training;
- Capital Administration & Development Division
- Office of the Chief Commissioner ICT Administration, Ministry of Interior ;
- Capital Development Authority/Municipal Corporation Islamabad

The governance structure for the program will be composed of a **Multi-Stakeholder Committee for Deworm Islamabad Initiative** serving as the central decision-making body for the program, providing a forum for representatives from key stakeholders to meet regularly to partake in key decision-making processes for strategic leadership. Two separate **Implementation Committees** i.e. for school-age children and for children under 5 years of age and women of reproductive age with representation from all the relevant departments/sections will be formed to conduct the day-to-day implementation activities required for program delivery. The active involvement of all stakeholders will be a key determinant in the overall success of the program.

#### 4.3.1 Multi-Stakeholder Committee for Deworm Islamabad Initiative - Composition and Roles

The **Multi-Stakeholders' Committee** will be primarily responsible for program oversight, including strategy and program implementation, providing strategic leadership of the program including establishment of program goals, and ensuring progress towards overall goals.

The Multi-Stakeholder Committee will be comprised of the following members:

| S. No. | Title & Department | Status |
|---|---|---|
| 1 | Member, Social Sector & Devolution, Planning Commission, Ministry of Planning, Development & Reform, Islamabad | Chair |
| 2 | Chief Health, Planning Commission, Ministry of Planning, Development & Reform, Islamabad | Member |
| 3 | Director General Health Services, Capital Development Authority/Municipal Corporation Islamabad, Islamabad | Member |
| 4 | Sr. Joint Secretary (Dawah), Ministry of Religious Affairs & Interfaith Harmony , Islamabad | Member |
| 5 | Joint Educational Advisor, Ministry of Federal Education & Professional Training, Islamabad | Member |
| 6 | Deputy Director General (Health), Capital Administration & Development Division, Islamabad | Member |
| 7 | District Health Officer, Health Department – ICT Administration, Chief Commissioner Office, Ministry of Interior | Member |

| | | |
|---|---|---|
| 8 | Director (P&D), Federal Directorate of Education, Islamabad | Member |
| 9 | Deputy Director (P-I), Ministry of National Health Services Regulations & Coordination, Islamabad | Member |
| 10 | Director Youth Engagement, Interactive Research & Development, Karachi | Member |
| 11 | Project Director TB, Global Health Directorate, Indus Health Network, Islamabad | Member |
| 12 | Program Representative, Evidence Action, Islamabad | Member |
| 13 | Assistant Chief Health, Planning Commission, Ministry of Planning, Development & Reform, Islamabad | Member/ Secretary |

Key responsibilities of the Multi-Stakeholder Committee will include:

I. Defining and setting goals and overall strategy implementation for treatment and prevention of STH among at-risk children in ICT
II. Gathering of information and discussing potential mechanisms/platforms for treatment of children under 5 years and women of reproductive age, as well as harder to reach school-age children
III. Following up the achievement of program targets and key indicators, including coverage data
IV. Endorsement of work-plan/ operational plan
V. Endorsement of program budget
VI. Endorsement of training materials, IEC strategies and materials
VII. Endorsement of adverse event management protocol
VIII. Endorsement of Monitoring and Evaluation strategy of the program
IX. Review of program data and results to inform improvements in future rounds
X. Impact evaluation after multiple rounds of deworming

#### 4.3.2 Implementation Committee (School-Based Deworming) - Composition and Roles

The Implementation Committee (School-Based Deworming) will be primarily responsible for program development including formation of program related documents, materials, strategies, budgeting and work planning for the treatment of children ages 5 to 15. This Implementation Committee will meet on need basis prior to the Multi-Stakeholders' Committee meeting.

The Implementation Committee (School-Based Deworming) will be comprised of the following members:

| **S. No.** | **Title & Department** | **Status** |
|---|---|---|
| 1 | Joint Secretary (Education), Capital Administration and Development Division, Islamabad | Chair |
| 2 | Director (Administration), Federal Directorate of Education, Islamabad | Member |
| 3 | Director (Training), Federal Directorate of Education, Islamabad | Member |
| 4 | Additional District Health Officer, Health Department – ICT Administration, Chief Commissioner Office, Ministry of Interior | Member |
| 5 | Director (Health Services), Capital Development Authority/Municipal | Member |

| | | |
|---|---|---|
| | Corporation Islamabad | |
| 6 | Deputy Director (Programme-II), Ministry of National Health Services Regulations & Coordination, Islamabad | Member |
| 7 | Deputy Chief (Health), Planning Commission, Ministry of Planning, Development & Reform, Islamabad | Secretary |
| 8 | Representative from Auqaf Department ICT Administration, Chief Commissioner Office, Ministry of Interior | Member |
| 9 | Representative from Private Educational Institutions Regulatory Authority (PEIRA), Islamabad | Member |
| 10 | Programme Representative, Evidence Action, Islamabad | Member |
| 11 | Programme Manager, Interactive Research & Development | Member |
| 12 | Representative from World Health Organization | Member |
| 13 | Another co-opted | Member |

Key responsibilities of the Implementation Committee for school-based deworming will include:

I. Development of training materials, IEC material and strategies
II. Development of work / operational plan and adverse events management protocol
III. Development of program budget
IV. Coordination of program implementation and delivery, logistics and information flows by working closely with relevant stakeholders
V. Identifying and mobilizing necessary government personnel and resources to achieve program objectives
VI. Monitoring of program, including supportive supervision of program activities
VII. Reporting to the Multi-Stakeholder Committee for Deworm Islamabad Initiative on all key elements of the program for strategic oversight and decision-making, and making recommendations for program improvements.

#### 4.3.3 Implementation Committee (Deworming of Children Under 5 and Women of Reproductive Age)-Composition and Roles

The Implementation Committee (Deworming of Children under 5 and Women of Reproductive Age) will be primarily responsible for program development including formation of program related documents, materials, strategies, budgeting and work planning.

The implementation committee will be comprised of the following members:

| S. No. | Title & Department | Status |
|---|---|---|
| 1 | Joint Secretary (Health), Capital Administration and Development Division, Islamabad | Chair |
| 2 | Additional District Health Officer, Health Department – ICT Administration, Chief Commissioner Office, Ministry of Interior | Member |

| | | |
|---|---|---|
| 3 | Director (Health Services), Capital Development Authority/Municipal Corporation Islamabad | Member |
| 4 | Deputy Director (Programme-II), Ministry of National Health Services Regulations & Coordination, Islamabad | Member |
| 5 | Deputy Chief (Health), Planning Commission, Ministry of Planning, Development & Reform, Islamabad | Secretary |
| 6 | Programme Representative, Evidence Action | Member |
| 7 | Programme Representative, IRD | Member |
| 8 | Representative from World Health Organization | Member |
| 9 | Another co-opted | Member |

Key responsibilities of the Implementation Committee for children under five and women of reproductive age will include:

I. Development of training materials, IEC material and strategies
II. Development of work / operational plan and adverse events management protocol
III. Development of program budget
IV. Monitoring of program, including supportive supervision of program activities
V. Overseeing day-to-day implementation activities required for program delivery

**4.4 Roles of the Planning Commission, Ministry of Planning, Development & Reform (M/o PD&R):**

I. Chairing of the Multi-Stakeholder Committee , providing overall steering and coordination of the initiative
II. Provide facilitation amongst the key stakeholders for smooth implementation of the deworming program
III. Overall commitment for public financing of the program for long-term sustainability
IV. Overall monitoring of deworming program

**4.5 Roles of Health Stakeholders**

The health stakeholders include Ministry of National Health Services Regulations & Coordination, Capital Development Authority/Municipal Corporation Islamabad, Capital Administration & Development Division, and Health Department – ICT Administration. The individual roles of the departments are highlighted in the matrix below:

| Health Stakeholder | Roles & Responsibilities |
|---|---|
| **Ministry of National Health Services Regulations & Coordination** | I. Requisition of deworming medicines through the WHO global drug donation program for school-age children<br>II. Issue necessary directives to the relevant government ministries/departments (Ministry of Foreign Affairs, Drug Regulatory Authority of Pakistan) for the deworming medicine clearance<br>III. Storage of deworming medicines at the national level<br>IV. Issue necessary directives to the provincial departments of health for the receipt of deworming medicines from the central storage to the provincial storage facilities and ensure the necessary documentation of drug handing taking<br>V. Provide guidance on development of an adverse event management protocol<br>VI. Reporting of final coverage data to WHO |
| **Capital Development Authority/Municipal Corporation Islamabad** | I. Technical support, in line with WHO recommendations<br>II. Quantification of deworming medicines with the support from FDE for school-age children<br>III. Issuing necessary directives to health personnel for participation in the deworming program as required<br>IV. Sharing the data of women of reproductive age and children under the age of 5 years<br>V. Communication of the program to health facilities at all levels, making health staff aware of their role in community mobilization and responding to potential adverse events<br>VI. Provision of trainers to facilitate training at all levels of the training cascade<br>VII. Storage of ICT level deworming medicines and its distribution to the resource centers of FDE<br>VIII. Development of PC-1 for deworming of children under 5 and women of reproductive age |
| **Capital Administration & Development Division** | I. Issuing necessary directives to health personnel for participation in the deworming program as required<br>II. Sharing the data of women of reproductive age and children under the age of 5 years<br>III. Communication of the program to health facilities at all levels, making health staff aware of their role in community mobilization and responding to potential adverse events<br>IV. Provision of trainers to facilitate training at all levels of the training cascade<br>V. Development of PC-1 for deworming of children under 5 and women of reproductive age |
| **Health Department – ICT Administration** | I. Technical support, in line with WHO recommendations<br>II. Quantification of deworming medication with the support from FDE for school-age children<br>III. Issuing necessary directives to health personnel for participation in the deworming program as required<br>IV. Sharing the data of women of reproductive age and children under the age of 5 years<br>V. Communication of the program to health facilities at all levels, making health staff |

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|---|---|
| | aware of their role in community mobilization and responding to potential adverse events<br>VI. Provision of trainers to facilitate training at all levels of the training cascade<br>VII. Storage of ICT level deworming medicines and its distribution to the resource centers of FDE<br>VIII. Development of PC-1 for deworming of children under 5 and women of reproductive age |

**4.6 Roles of Education Stakeholders**

The education stakeholders include Ministry of Federal Education & Professional Training, Federal Directorate of Education, Capital Administration & Development Division, Chief Commissioner Office ICT Administration (Auqaf Department, Industries & Labor Welfare Department) and Private Educational Institutions Regulatory Authority (PEIRA). The individual roles of the departments are highlighted in the matrix below:

| Education Stakeholder | Roles & Responsibilities |
|---|---|
| **Ministry of Federal Education & Professional Training** | I. Sharing of relevant administrative data, including up-to-date data on numbers of schools (managed by the M/o FE&PT) and enrolment<br>II. Sharing of data on out-of-school children<br>III. Issuing necessary directives to education personnel of the requirements for participation in the deworming program<br>IV. Communication of the program to all schools, making teachers aware of their role in disseminating information to children and their parents, administering tablets to children, and reporting coverage<br>V. Support in the development of training materials, IEC strategies and materials<br>VI. Dissemination of IEC material and mobilization of school staff, school councils/committees in line with agreed community sensitization strategies<br>VII. Provision for trainers to facilitate training at all levels of the training cascade<br>VIII. Support CDA/MCI and Health Department ICT Administration for quantification of deworming medicines for school-age children |
| **Federal Directorate of Education** | I. Sharing of relevant administrative data, including up-to-date data on numbers of schools (public and private) including schools locations and enrolment<br>II. Sharing of data on out-of-school children<br>III. Issuing necessary directives to education personnel for participation in the deworming program as required<br>IV. Communication of the program to all schools, making teachers aware of their role in disseminating information to children and their parents, administering tablets to children, and reporting coverage<br>V. Development of training materials, IEC strategies and materials<br>VI. Dissemination of IEC material including mobilization of school staff and school councils/committees in line with agreed community sensitization strategies<br>VII. Provision of trainers and training facilities to facilitate training at all levels of the training cascade for public, private and deeni madaris<br>VIII. Receive and maintain record of the deworming medicines at the resource centers and its further distribution to the school teachers through the training cascade<br>IX. Compile and maintain the data of children dewormed submitted to the |

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| | resource centers by school teachers through reverse reporting cascade<br>X. Compile and maintain the data of the left-over deworming medicines returned by schools to the resource centers<br>XI. Collect and transfer the left-over drugs to the storage facilities of CDA/MCI and Health Department – ICT Administration<br>XII. Support CDA/MCI and Health Department ICT Administration for quantification of deworming medicines for school-age children<br>XIII. Reporting of coverage data through reverse cascade and sharing with M/o NHSR&C<br>XIV. Ensure the collection of approved attendance sheets of each training session for the disbursement to trainees |
| **Capital Administration & Development Division** | I. Lead the implementation of school-based deworming in ICT<br>II. Issuing necessary directives to education personnel for participation in the deworming program as required<br>III. Communication of the program to all schools, making teachers aware of their role in disseminating information to children and their parents, administering tablets to children, and reporting coverage<br>IV. Support in the development of training materials, IEC strategies and materials<br>V. Dissemination of IEC material and mobilization of school staff, school councils/committees in line with agreed community sensitization strategies |
| **Chief Commissioner Office ICT Administration (Auqaf Department, Industries & Labor Welfare Department)** | I. Sharing of relevant administrative data, including up-to-date data on numbers of deeni madaris, including locations and enrolment<br>II. Sharing of data on out-of-school children<br>III. Issuing necessary directives to all stakeholders for participation in the deworming program as required<br>IV. Communication of the program to all deeni madaris, making teachers aware of their role in disseminating information to children and their parents, administering tablets to children, and reporting coverage<br>V. Dissemination of IEC material including mobilization of school staff and school councils/committees in line with agreed community sensitization strategies<br>VI. Provision for trainers to facilitate training at all levels of the training cascade<br>VII. Support CDA/MCI and Health Department ICT Administration for quantification of deworming medicines for school-age children<br>VIII. Reporting of coverage data through reverse cascade and sharing with FDE |
| **Private Educational Institutions Regulatory Authority** | I. Issuing necessary directives to education personnel for participation in the deworming program as required<br>II. Communication of the program to all private schools, making teachers aware of their role in disseminating information to children and their parents, administering tablets to children, and reporting coverage<br>III. Dissemination of IEC material including mobilization of private school staff and communities in line with agreed community sensitization strategies<br>IV. Provision for trainers to facilitate training at all levels of the training cascade<br>V. Support CDA/MCI and Health Department ICT Administration for quantification of deworming medicines for school-age children<br>VI. Reporting of coverage data through reverse cascade and sharing with FDE |

### 4.7 Roles of the Technical Assistance Providers

IRD, IHN and Evidence Action will provide technical assistance to the school-based deworming program for the scale-up and institutionalization of the deworming program utilizing and strengthening government resources and systems where and as appropriate. The initial year of the program will include greater support in terms of drafting key documents and program materials, etc.; however, technical assistance will adjust or refocus with the growing capacity of the government in the subsequent years of the program.

- Provision of technical assistance to government stakeholders for **school-based deworming**, including support in the following areas:
  I. Development of a policy and institutional framework
  II. Development of a training cascade and training material
  III. Development of community mobilization strategies and materials
  IV. Development of a comprehensive adverse events management protocol
  V. Development of monitoring and evaluation strategies
  VI. Development of budgets and work plans
  VII. Support for the estimation of drug requirement, completion of the annual drug requisition form, and reporting to WHO
  VIII. Support for program monitoring to ensure the preparedness, process and reporting cascade in a timely manner Devise strategy, protocol, surveys and training material for the independent monitoring and coverage validation of school-based deworming by a contracted third party. Independent monitoring provides a non-biased assessment of program processes and coverage to guide strategies for future rounds of deworming

## 4.4. Alignment of Deworming with Global Guidelines, Targets and Commitments

In 2001, the World Health Assembly (WHA) passed resolution WHA54.19 endorsing regular treatment of groups at-risk of schistosomiasis and STH, particularly school-age children, as the best means to reduce mortality and morbidity resulting from STH, and improving health in infected communities.

STH is considered as a public health problem when the prevalence of STH infection of moderate and high intensity among school-age children is over 1%. To achieve this goal of morbidity control, it is important that deworming be sustained in at-risk areas. Implementing mass drug administrations (MDA) in accordance with WHO-recommended treatment strategies would allow the Government of ICT to prioritize resources and achieve the most cost-effective impact for the target population.

In 2012, the WHO Strategic and Technical Advisory Group for Neglected Tropical Diseases (NTDs) and partners published a roadmap for the control, elimination and eradication of NTDs, including targets for the period 2012–202[5]. The target set for STH was reaching 75% of at-risk school-age children with deworming medication by 2020.

NTDs have the greatest relevance for SDG 3 (the health goal) but affect and are affected by many of the other development areas covered under the 2030 Agenda.

## 4.5. Alignment of Deworming with Other Health and Education Programs and Policies in ICT and at National Level

The school-based deworming program is aligned with the National Education Policy 2017[6]; states, “Health departments should closely coordinate with the education department to provide health coverage to all students”.

[5] World Health Organization. (2012). Accelerating work to overcome the global impact of neglected tropical diseases – A roadmap for implementation

[6] Pakistan Education Policy 2017; chapter 13; physical education, health and sports in education; goals objectives and targets; P-105

The school-based deworming program is also aligned with the national and provincial multi-sectoral nutrition strategies that highlight the importance of nutrition sensitive programming such as deworming and addressing other underlying causes to overcome the malnutrition challenge in Pakistan.

Vision 2025 suggests addressing and raising population awareness campaigns about infectious diseases and other co-morbidities that can be fatal. Simultaneously, the program strongly encourages coordination of health policies amongst provinces to boost a healthy infrastructure promoting wellbeing of citizens[7].

## 5. Implementation Strategy for School-Based Deworming

School-based deworming will operate as an annual campaign, with deworming tablets administered by teachers at schools once a year, at no cost to children or families. Non-enrolled children will be encouraged to come to schools to receive treatment, with no bias in the program regarding enrollment status. Prior to deworming tablets being administered, training will be conducted to inform teachers and other personnel involved in the program about their responsibilities. The training will also serve as a means to provide schoolteachers with the resources they need to conduct deworming, including medicines, reporting forms, and IEC materials. The key stages involved in planning and implementing the deworming campaign are shown in figure 3, and full information is described in section 4 below. In order to ensure cost-effectiveness of the school-based deworming program, the various components of the implementation strategy will be evaluated for need and cost before a final program design can be determined. Existing government systems will be leveraged where possible, contributing to long-term program sustainability.

**Figure 3: Key stages involved in planning and implementing a school-based deworming campaign.** Reporting of data is a core component of monitoring and evaluation (M&E), but M&E will be employed throughout the various stages of the implementation strategy to ensure progress towards goals and inform programmatic decisions.

### 5.1. Program Planning & Management

For each annual round of deworming, it is important for all stakeholders to establish agreed, clear targets for the MDA using the most recent available population data. This will serve as a key metric of program performance, given the need to achieve high therapeutic coverage (> 75% of the target) to have a significant impact on worm infection in the target population.

Joint ownership and collaboration among stakeholders from Health, Education, and Planning Development & Reform will be critical to success of the deworming program. Given the multiple responsibilities of all stakeholders and the effort involved in establishing the deworming program, on-the-ground support from the technical assistance partners will help to coordinate logistics and other program details leading up to deworming days.

**When should school-based deworming be conducted?**
As schools and teachers are used as a mechanism for administering tablets to children, school-based deworming has to be implemented when schools are in session. To facilitate teachers and to help to maximize coverage, deworming should be conducted at a time during the school year when there is sufficient time in advance of deworming to allow for preparations (e.g. training of teachers, outreach to students and parents, distribution of medication and other materials to the schools), and sufficient time after deworming to allow for schools to report back to authorities. Accordingly, periods around school exams and holidays are best avoided.

7Vision 2025 – Ministry of Planning, Development & Reform, Government of Pakistan

Evidence Action's experience suggests that intense preparation and follow up activities are required both pre and post deworming. The stakeholders will need to undertake detailed planning to support a successful rollout of the deworming campaign and maximize the number of children dewormed, and provide all relevant stakeholders at each level (district, sector, and cluster) with clear guidance on their roles and responsibilities.

The technical assistance partners will support the government to develop a comprehensive **operational plan** for each round of deworming, specifying how key activities will be conducted. A key criterion for developing the operational plan for each round of deworming will be cost-effectiveness. Lessons learned during the course of implementation will be incorporated into future deworming rounds.

## 5.2. Drug Procurement & Management

The school-based deworming program will use **mebendazole 500 mg tablets** donated through WHO for the treatment of school-age children; mebendazole is on the "National Essential Medicines List" in Pakistan. For each annual round of deworming, M/o NHSR&C will lead the estimation of overall drug requirements, with support from the technical assistance partners as needed, obtaining the data from the ICT administration and consolidating with data from other regions at the national level. Joint Request for Selected Medicines (JRSM) will be submitted to the WHO Country Office – Pakistan, which then submits to WHO Headquarters from where the final order is placed to the drug manufacturer/pharmaceutical company. It takes 6 – 8 months for the manufacturing of drugs and delivery to the country of request. Pharma donor takes the responsibility of the costs associated with the shipping of drugs to the central point of the consignee. The drugs are planned to be stored in the central warehouse managed by the M/o NHSR&C or the WHO Country Office - Pakistan from where the required share of ICT will be dispatched to training centers, for which the education sector representative in the Implementation Committee will assign a focal person for drug coordination. For Non-School Based Deworming in ICT, procurement will be made by health sector using public funds and the medicines will be stored at the central stores of tertiary care hospitals, MCI and ICT Health Department and transported to the health facility level using their logistics system.

**Accessing freely donated mebendazole for school-age children**
Mebendazole is donated to national ministries of health through WHO in all endemic countries for the treatment of all children of school age. A set of forms has been developed to facilitate the process of requesting drugs through the WHO donation program. These forms constitute an official government request to WHO for the supply of preventive chemotherapy medicines. The forms must be signed and approved by the M/o NHSR&C to formally endorse the country's request for these medicines. All donations are subject to review and/or availability of medicines. In addition, use of donated medicines must be adequately reported to WHO upon completion of treatment activities.

As deworming medication for school-age children is provided free-of-charge through the WHO global drug donation program, and future donations depend on reporting of treatment coverage, the M/o NHSR&C is committed to reporting to the WHO the number of children dewormed during each MDA.

### 5.2.1. Transportation and Storage of Drugs

Integral to the program's success is the availability of sufficient quantities of drugs at schools in time for deworming day, requiring logistic supply chain management for transportation of mebendazole. The logistics of drug supply involves coordinated effort from Department of Health, Department of Education and Planning, Development & Reform. Upon receipt from the M/o NHSR&C, CDA/MCI, ICT Health Department/District Health Office, CA&DD will store the drugs at their main drug store and subsequently distribute through their established distribution cascades to their health facilities. The education department and health departments will do a mapping exercise to link the health facilities with the nearest education training centers/clusters. The technical assistance partners will provide technical support for the design of an appropriate distribution cascade and preparation of a drug-bundling plan for distribution of the deworming drugs along with the other program materials during training sessions (see section 5.3.)

### 5.2.2. Adverse Event Management

An **Adverse Event Management Protocol** is an essential program document, intended to ensure that all parties involved in deworming understand what to do and who to contact in case an adverse event occurs. Deworming drugs are very safe; however, teachers, children, and communities can sometimes attribute unrelated events to deworming if there is a lack of awareness. The possibility of adverse events requires that protocols are established and circulated to all teachers and health centers so that the health functionaries are ready to handle any emergency. The technical assistance partners will work with the stakeholders to develop the protocol and support set up of related structures as needed.

**Safety of mebendazole**

Hundreds of millions of doses of mebendazole have been used since registration for human treatment was approved. Mebendazole has been through extensive safety testing and has been used in millions of people with few and minor side-effects. Extensive experience of deworming millions of children worldwide confirms that mebendazole causes only rare, mild and transient side effects or "adverse drug reactions", and that these reactions are generally related to degeneration of the worms that have been killed. Most of the adverse events observed in school programs are mild and occur during initial rounds of implementation of the intervention – a time when children harbor more infections of high intensity. Mild abdominal pain, nausea, vomiting, diarrhea and fatigue are the most commonly reported adverse events in some children with higher worm loads but are not serious and do not normally require medical treatment. Mebendazole is easy to administer by non-medical personnel (e.g. teachers).

## 5.3. Training & Distribution

A training and distribution cascade provides a stepwise model for delivering information, drugs, and other program materials from the central level down to the schools and communities where program implementation takes place. A proven model used in many neglected tropical disease and public health programs worldwide, this structure enables government personnel at each administrative level to engage with the program as relevant to their expertise and areas of oversight, while breaking the overall complex program into manageable segments. The training cascade results in capacity building for government officials at each administrative level within ICT, and enables efficient collaboration between ICT's health and education sectors.

The technical assistance partners will work with the government to design the training cascade, develop training materials and curricula, and train master trainers. Training materials will be developed to convey necessary information in clear, simple terminology; have a brief handout with key messages that can be taken with them; and will enable teachers to convey the key messages from training to their peers upon returning to school, in preparation of deworming. The rollout of the training cascade will occur in the weeks immediately prior to the MDA. The program will aim to leverage training structures and personnel that are already in place and utilized for other government-led programs and initiatives in Pakistan. The training strategy is to utilize the existing 'sector/resource centers' and 'cluster' based training venues and training personnel that are routinely used by the Federal Directorate of Education for other educational programs (figure 4).

The deworming tablets and all of the various materials needed for a successful deworming campaign need to be distributed to schools in advance of the MDA. The technical assistance partners will help the government devise strategies to integrate the distribution of key deworming materials - including the deworming tablets, training materials/handouts, public awareness materials, and reporting forms - with the training cascade. Relevant stakeholders will work together to arrange the logistics of facilitating all materials to make their way from Islamabad to the training venues at all levels of the cascade.

| LEVEL | LOCATION | NUMBER OF SESSIONS | FACILITATORS | TRAINEES |
|---|---|---|---|---|
| 1 | Islamabad Capital Territory | 1 | Technical Assistance Partners | 2x Representatives from each **sector/ resource center:**<br>•1x sector level master trainer - education<br>•1x sector level master trainer - health<br>Total No. of sectors/ resource centers = 6<br>Total No. of trainees = 12 |
| 2 | Education Sector/ Resource Center | 3<br>ICT's 6 education sectors will be grouped into 3 groups | Master trainers from level 1 | 2x Representatives from each **cluster**:<br>•1x cluster level master trainer - education<br>•1x health official from the health facility within education cluster<br>Total No. of clusters = 30 to 36<br>Total No. of trainees = 60 to 72 |
| 3 | Cluster | 50 approx<br>Approximately 50 sessions across all clusters, 40 trainees per training session | Master trainers from Level 2 | 1 to 2x teachers from each **school** (public, private schools and deeni madaris; no. of teachers dependent on school enrolment)<br>Estimated No. of schools = 1,808<br>Estimated No. of trainees = 2,000 |

**Figure 4: Overview of training and distribution cascade structure.** A cascade structure provides an efficient and cost-effective mechanism to train teachers from all schools targeted by the program and provide them with the deworming tablets and materials they need. Master trainers from education sectors, trained in ICT, can provide training to cluster level master trainers and they can train further representative teachers from every school in ICT. Health personnel trained at level 2 can convey important messages to the local level health workers through their existing hierarchy. By integrating the training cascade with the distribution of deworming tablets and materials, further efficiencies can be achieved, ensuring that all the necessary materials are in-place in schools for the deworming campaign.

## 5.4. Public Awareness & Mobilization

For mass public health programs, it is critical to inform the public about the purpose of the program, the safety of the medication, and the benefits of participating. Sensitizing the media is essential to avoid inaccurate and sensational messages being conveyed to the public, particularly in the case of an adverse event. Establishing trust in the deworming program will be essential to encourage parents and communities to advocate for the program, and to promote high take-up among children. The technical assistance partners will work with ICT administration to tailor locally appropriate awareness campaigns about the deworming program. These awareness campaigns will communicate targeted messages through a variety of channels to increase public awareness of deworming days and convey messages about the safety of the medicine and why treatment is important. Such campaigns will aim to encourage participation of both enrolled and non-enrolled children, as well as to provide information to children, parents, teachers, and community members on prevention of worm infection.

Existing tools and channels in ICT for public awareness and mobilization can be leveraged for the school-based deworming program. The Directorate of Municipal Administration (DMA), under CDA/MCI, plays an important role in community mobilization for dengue and other epidemics by spreading messages through media such as banners and billboards. Similarly, the Information Technology Section of the Directorate of Education utilize mass messaging through WhatsApp and SMS for communicating important announcements to teachers. Child health and education messages are often delivered free of charge through national TV and radio along with the private TV channels, by arrangement of the Ministry of Information Broadcasting & National Heritage (M/o IB&NH). Local cable TV and social media can potentially be utilized to convey public awareness messages.

**Effective community sensitization and mobilization will support the MDA by:**

Raising awareness on the importance of deworming and generating demand among beneficiaries and other relevant audiences (i.e. parents, policy-makers, government, media)

Maximizing the number of children dewormed during each treatment round, including hard-to-reach populations such as out-of-school children

Preventing negative publicity and the spread of false information about deworming, both at the community level and in the media, and ensuring proper management of any adverse events

While the program will supply schools and communities with selected public awareness materials, schools, health facilities and local stakeholders are encouraged to implement various methods to convey the message about the MDA to the children and the community. Methods do not necessarily need to incur costs or involve time-consuming work by teachers and health workers. Various methods and media types, depending on local contexts, can be employed to spread the message.

## 5.5. Mass Drug Administration

School-based deworming is often successful operating as an annual campaign, where awareness is generated and momentum gained through community sensitization at a single point in the year. In this model, deworming in schools is typically implemented through a main **deworming day** targeting all school-age children, whether or not enrolled at school, followed by a **mop-up day**, typically within one week of the deworming day, to target children who did not receive deworming medication. This mop-up can be very useful for attaining high program coverage.

Teachers at the schools will administer deworming medication, with officials from the health system on standby to support when problems arise. Teachers will record the number of children who received a tablet using standardized reporting forms; forms are aggregated at the school level and submitted to designated officials according to the agreed-upon reporting cascade (see section 5.6.2). Left over drugs will be sent back to the main drug storage at ICT level through a reverse distribution system.

## 5.6. Monitoring & Evaluation

The school-based deworming program will require a strong monitoring and evaluation (M&E) system to ensure that the deworming campaign is implemented as planned and the desired results are being achieved. Key to measuring the success of deworming is reliable reporting of the number of children dewormed during each MDA. Careful monitoring will help to identify areas where improvement is necessary, guide future planning,

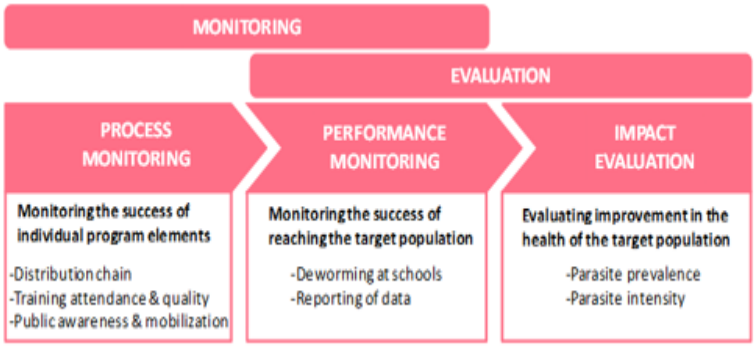


**Figure 5: Overview of M&E strategy.** All elements of the process involved in ensuring the successful implementation of a deworming campaign will be monitored ('process monitoring'), as will the overall performance of deworming at schools ('performance monitoring'). The overall aim of the entire program is to reduce the worm burden amongst school-age children, and the impact of the deworming program will be evaluated by STH prevalence and intensity surveys ('impact evaluation') after a number of rounds of deworming. Reporting of data is a core component of monitoring and evaluation (M&E), but M&E will be employed throughout the various stages of the implementation strategy to ensure progress towards goals and inform programmatic decisions.

and allow assessment of the overall impact of the program. The technical assistance partners will support the design and implementation of a robust M&E strategy (figure 5) for school-based deworming. Complementary M&E activities will be implemented by both the government stakeholders and technical assistance partners, and will encompass both performance metrics as well as process metrics. The findings of M&E from each round of deworming will feed back into the planning and implementation of future rounds to facilitate programmatic improvements. Impact monitoring via follow-up parasitology assessments will be considered and planned for in later years as appropriate, after achieving multiple rounds of high-coverage MDAs in ICT.

### 5.6.1. Process Monitoring

A monitoring plan will be executed with participation of relevant stakeholders to ensure that all program activities are implemented as per guidelines. Monitoring will assess preparedness to ensure that everything is ready in advance of the deworming campaign. Attendance of participants at all training sessions throughout the training cascade will be recorded using attendance sheets. The quality of training will be monitored by observational monitoring visits to selected training sessions. Direct observation of deworming in a sample of schools on deworming day and mop-up day will serve to monitor that deworming is actually happening, that key processes are being followed, and also to highlight any difficulties.

### 5.6.2. Reporting of Coverage Data – Reverse Cascade

A key indicator for the success of deworming is the number of children dewormed, known as therapeutic coverage. The technical assistance partners will support the stakeholders to design (i) appropriate reporting forms that will be completed by teachers on the day of deworming and (ii) an appropriate reverse cascade structure to provide a cost-effective and efficient system for reporting coverage data. The existing information cascade utilized by the FDE will be used to send and compile data from the schools, to cluster education sectors/resource centers and ultimately to FDE level (figure 5). With the passage of time, the TA partners will advocate with the government to integrate the deworming data into the government Health Management Information System (HMIS) and Education Management Information System (EMIS). As deworming medication for school-age children is provided free-of-charge through the WHO global drug donation program, the M/o NHSR&C is committed to reporting the number of children dewormed to the WHO; therefore, FDE will share the coverage data with M/o NHSR&C.

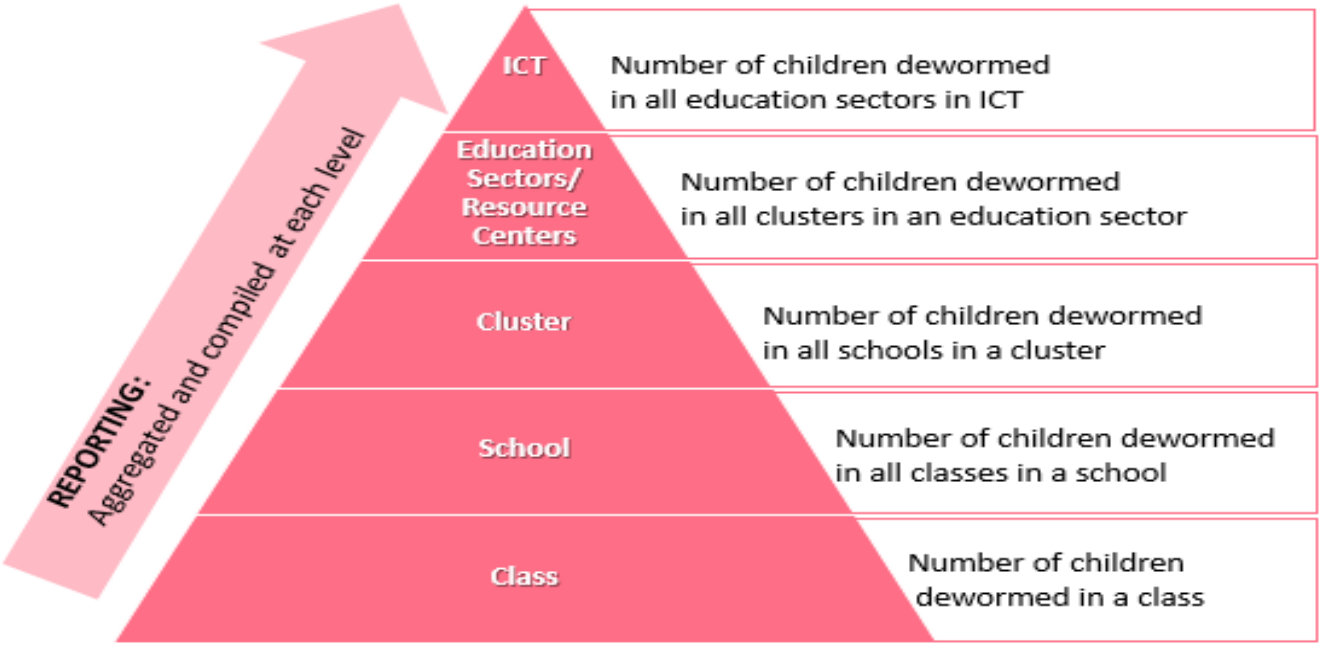


**Figure 6: Reverse cascade for reporting of coverage data**

### 5.6.3. Independent Monitoring

An important component of the technical assistance for school-based deworming is **independent monitoring,** whereby an independent assessment of the program is obtained to validate that protocols are being followed, information is being relayed correctly, and paper records correspond to actual events. Independent monitoring will be conducted in line with each MDA by survey teams contracted by the technical assistance partners. An important aspect of independent monitoring is the process of '*coverage validation*'. In order to verify that the number of children reported as being dewormed corresponds to the actual number of children who received a tablet, a number of schools will be randomly selected across ICT, ensuring geographical representation, and will be visited by independent monitors on deworming day and in the days afterwards. This process of coverage validation serves as an important mechanism to verify whether the data reported by the schools are accurate. The data collected by independent monitors will help to identify what areas of the program are operating well, and what areas need improvement. Following analysis of this data, the technical assistance partners will make recommendations to the Multi-Stakeholder committee about areas of the program that can be modified.

## 6. Program Financing

School-based deworming will be implemented outside PSDP but implementation partners will use their available resources to support program implementation while funds will be made part of regular health program in future. In this regard, a PC-I will be prepared for non-school based deworming (covering children under 5 years and women of reproductive age) and funded through PSDP.

## 7. Enforcement

School-based deworming will be implemented and enforced through a Letter of Intent signed between different stakeholders while the non-school based component will be executed in PC-I mode.

**Annexure**

**Technical Working Group for Drafting of Policy and Institutional Framework for Deworming Islamabad Initiative**

| | | | |
|---|---|---|---|
| 1 | Dr. Muhammad Asif | Chief Health, Ministry of Planning, Development and Reform, Islamabad | Convener |
| 2 | Dr. Hassan Orooj | Director General, CDA/ MCI, Islamabad | Member |
| 3 | Dr. Minhaj Us Siraj | Deputy Director General, Capital Administration and Development Division, Islamabad | Member |
| 4 | Dr. Najeeb Durrani | Additional District Health Officer, Chief Commissioner Office, Islamabad | Member |
| 5 | DR. Iqbal Afridi | Additional Director Health Services, CDA/ MCI, Islamabad | Member |
| 6 | Dr. Sabeen Afzal | Deputy Director, Programme Wing, M/o National Health Services, Regulations and Coordination, Islamabad | Member |
| 7 | Mr. Farhad Ali Shah | Director (P&D), Federal Directorate of Education, Islamabad | Member |
| 8 | Mr. Badar Uzzaman | Programme Representative, Evidence Action, Islamabad | Member |
| 9 | Mr. Waleed Rabbani | Programme Manager, SBDP, Evidence Action, Islamabad | Member |
| 10 | Dr. Murtaza Haider | Assistant Chief (Health), Ministry of Planning, Development and Reform, Islamabad | Member |