




Monitoring Vaccine Utilization and Wastage

Wasted	Sacrificed for a good reason
<ul style="list-style-type: none">  Losses of inventory, in unopened vials, for different reasons: expiry, damage from cold chain breakdowns, breaking, freezing.  Losses due to failure of multi-dose vial policy, discarding opened vials of vaccines eligible for reuse because of misuse or ignorance of the multiple-dose vial policy: TT, DTP, HepB, etc.  Losses of misuse include administration of incorrect doses, invalid doses at wrong intervals and ages. 	<ul style="list-style-type: none"> • Doses discarded from reconstituted vaccine vials at the end of a vaccination session, in line with the multi-dose vial policy: BCG, measles-containing vaccine, yellow fever. • Unplanned administration of vaccine (non-target populations, booster doses, other population groups).
<p>Key Considerations:</p> <ul style="list-style-type: none"> • Effective Vaccine Management (EVM) limits at maximum ultraviolet wastage $w_i = 1\%$ per storage facility. • For the entire supply chain: $\sum^n w_i$ ($n = \text{No. of supply chain levels}$) • Managers anticipate reasons leading to actions to avoid wastage. • Establish a system to record and review vaccine losses. 	<p>Key Considerations:</p> <ul style="list-style-type: none"> • Only service delivery • Related to multi-dose presentations • No limits set (context dependent) • Managers analyze data and provide supportive supervision to reduce wastage • Formulate/adjust procurement policies

Two Types of Wastage (Unopened Vials v. Opened Vials)

Unopened Vial Wastage	Opened Vial Wastage
<ul style="list-style-type: none"> • $\frac{\text{Doses wasted in unopened vials}}{\text{Doses supplied}} \times 100$ • Cold chain failure: <ul style="list-style-type: none"> ⇒ Freeze-sensitive vaccines frozen ⇒ Poor stock inventory control • Expiry from non compliance to breakages, damaged labels, missing inventories. • Poor forecasting: <ul style="list-style-type: none"> ⇒ Expiry from over-supply 	<ul style="list-style-type: none"> • $\frac{\text{Doses opened} - \text{doses administered}}{\text{Doses opened}} \times 100$ • Vaccine presentation: <ul style="list-style-type: none"> ⇒ Multi-dose vials (MDV) are prone to higher opened vial wastage as remaining doses usually need to be discarded at the end of any session. • Status of Multi-Dose Vial Policy: <ul style="list-style-type: none"> ⇒ With preservative for re-use until finish. ⇒ Without preservative & discard within 6 hours. • Vaccination strategies and settings: <ul style="list-style-type: none"> ⇒ Fixed vs. outreach/mobile. ⇒ Session size (urban/rural, routine/campaign).

WHERE DID WASTAGE HAPPEN?

