Introduction and Importance of RMU Identifying Medicine Use Problems

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Rational Medicine Use – an imperative for all health systems

RMU is ensured when patients receive medicines appropriate to their clinical needs, at doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community.

Rational Medicine Use Cycle

Suboptimal medicine use =

- Inefficiencies
- Opportunity costs
- Poor health outcomes, e.g. AMR, ↑ ADRs
- Wasted resources, with a direct negative impact on sustained availability of the right medicines

To support improved RMU

- ideally, patient-level data should be collected and analysed
- however, aggregate consumption data can be relied on to generate actionable insights
- various pharmacoepidemiological approaches are available
- interventions should be designed and implemented by PTCs to support positive health provider and patient behaviour

Sources of RMU data – all have strengths and weaknesses

Procurement data, e.g. any applicable Stock Management System

Donation data, especially for a certain programme (e.g. mebendazole for mass drug administration in school health)

Patient Information, e.g. what medication was consumed
- from patient or medical and pharmacy records as part of a medicines use review**.**

Commercial data sources, e.g. IQVIA

Supplier-provided data, e.g. RSA Pharma

Dispensing data, e.g. electronic dispensing systems (CCMDD), manual dispensing records

Stock-outs, e.g. National Surveillance Centre Dashboards

Health service utilisation and indicator data, e.g. National Health Laboratory Service data; DHIS indicators

Demographic data, e.g. Stats SA (www.statssa.gov.za), District Health Information System population estimates

Prescribing data, e.g. chronic medicine prescriptions, manual prescription records

Data sources can be used to:
- monitor the use of medicine
- map current health needs
- conduct statistical, predictive forecasting for future health needs

Identifying medicine use problems – a measure of utilisation

Defined Daily Dose (DDD)

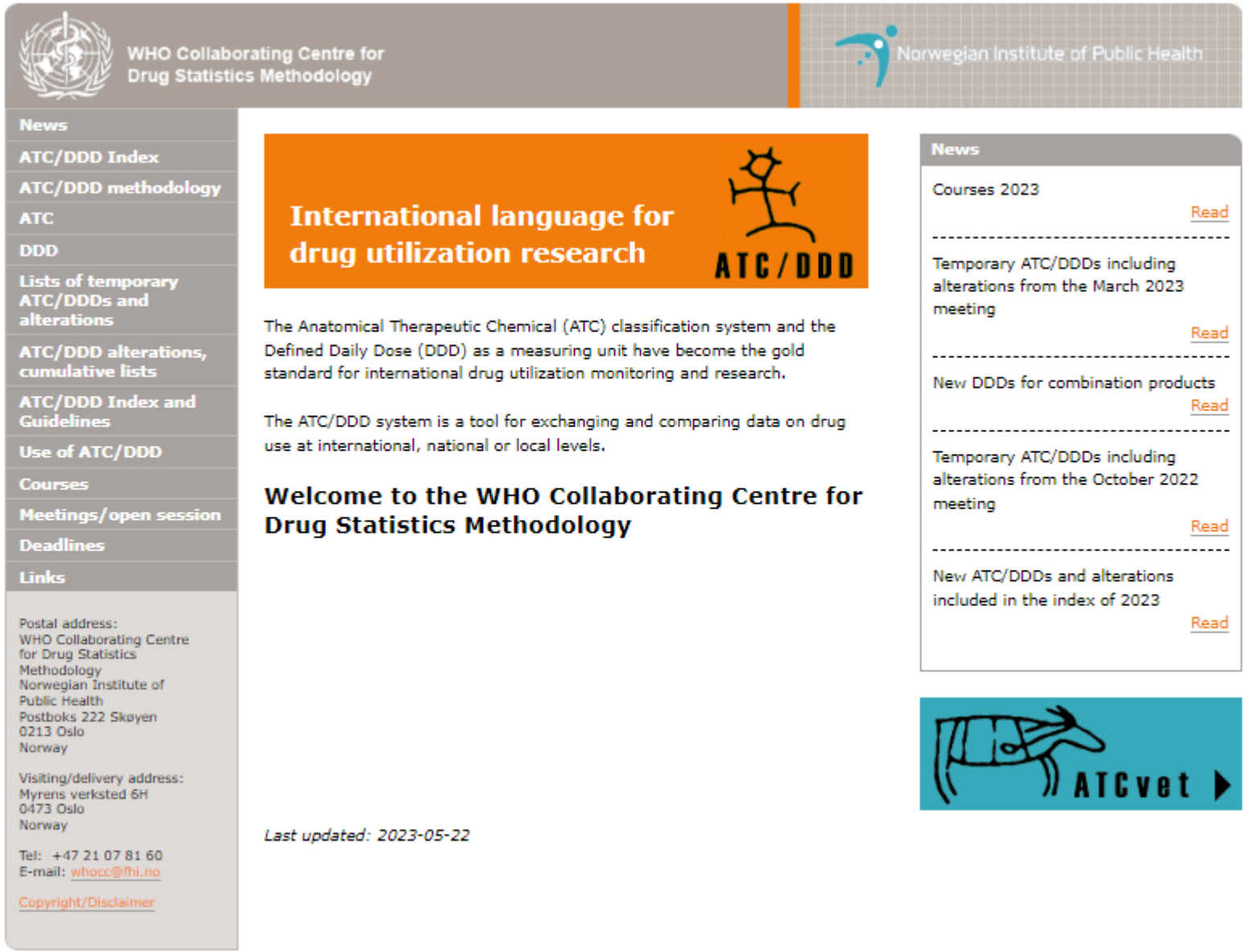
The assumed average maintenance dose per day for a drug used for its main indication in adults.
Assigned per route of administration within an ATC code and is normally based on monotherapy.
Provides a fixed unit of measurement independent of price and dosage form, enabling monitoring of consumption

Usage

- DDD allows medicine use to be measured in a simplified manner and for comparisons to be made both locally and internationally.
- Allows standardised comparison between usage of products with different dosing regimens.
- Different denominators may be used for comparison – the most common metric used is the DDD per 1000 patient population per day (DDD/TID)
- Public sector-dependent (uninsured) population estimates are available from DHIS

Examples provided in the PTC guideline

Where to find ATC/DDDs - https://www.whocc.no/



Identifying medicine use problems – applying the Pareto principle

ABC Analysis

An inventory categorisation method, used to monitor costs and RMU.

Items are divided into 3 categories (A, B and C) based on value of usage over a period of time

- *A category items: highest cost for relatively few items*
- *C items: lowest consumption value and the most items*
- *Category B items: the interclass items*

3 categories are not static and are specific to usage patterns in the analysis being performed

Group A items	Group B items	Group C items
80% of expenditure and an estimated 20% of total items	15% of expenditure and an estimated 30% of total items	5% of expenditure and an estimated 50% of total items

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Identifying medicine use problems – in-depth Investigation

Medicine Use Evaluation (MUE)

A Medicine Use Evaluation (MUE) is an ongoing, systematic, criteria-based programme of medicine evaluations that will help ensure appropriate medicine use.

If therapy is determined to be inappropriate, interventions with providers or patients will be necessary to optimise therapy.

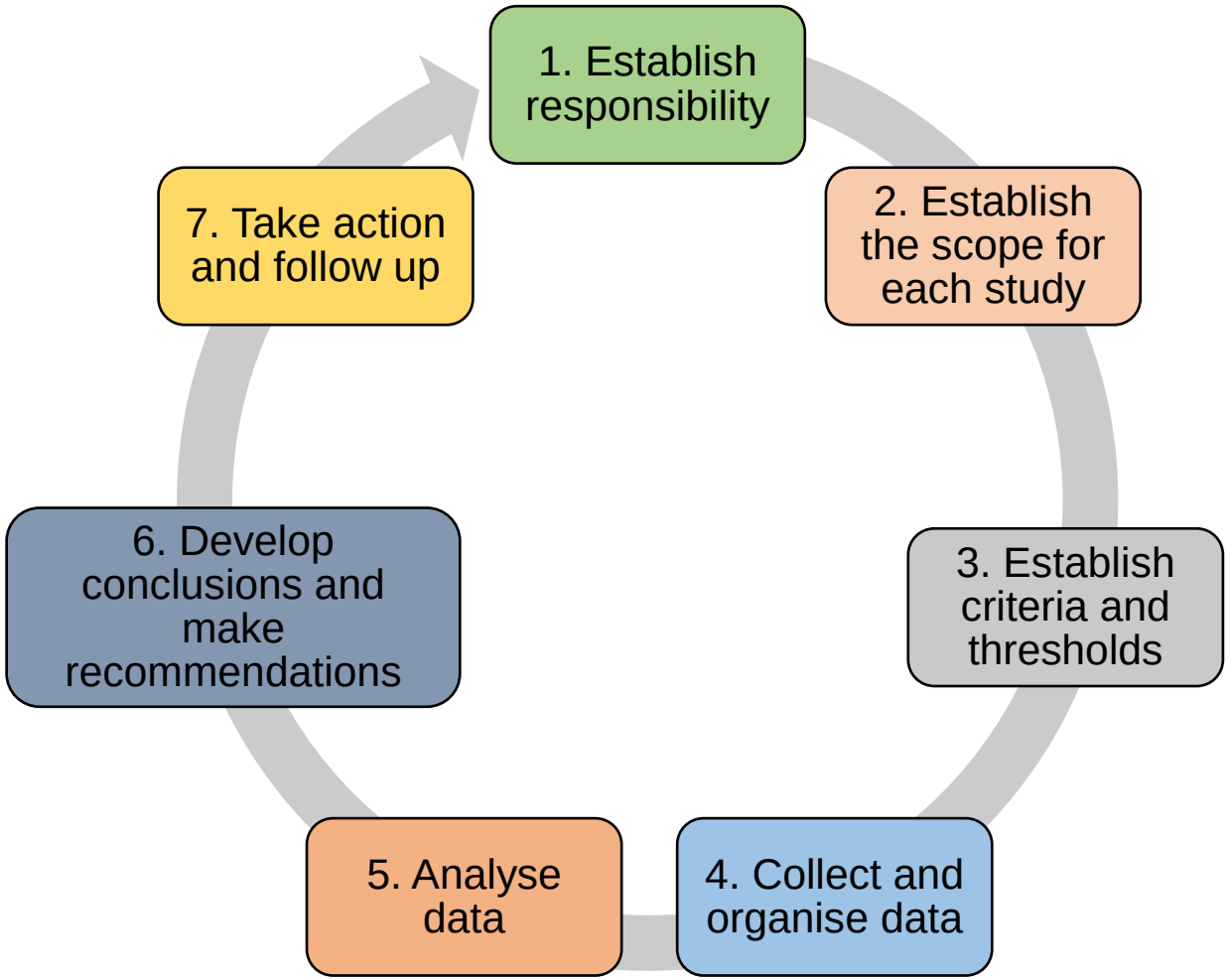
An MUE involves the following steps:

- Defining standards of care and thresholds for acceptable medicines use
- Assessing whether prescribing is in line with the set criteria (e.g. STGs)
- Intervening to address identified problems
- Monitoring the impact of interventions

Possible triggers for an MUE = safety warnings, ADR reports, recommendations from PTC members, ABC analyses, VEN studies or ATC/DDD Analyses.

Indicators and criteria for an MUE are highly individualised, depending on the scope of the analysis. MUEs may need to rely on prospective data (usually individual prescriptions), unless there are accurate records accessible

World Health Organization MUE Steps:



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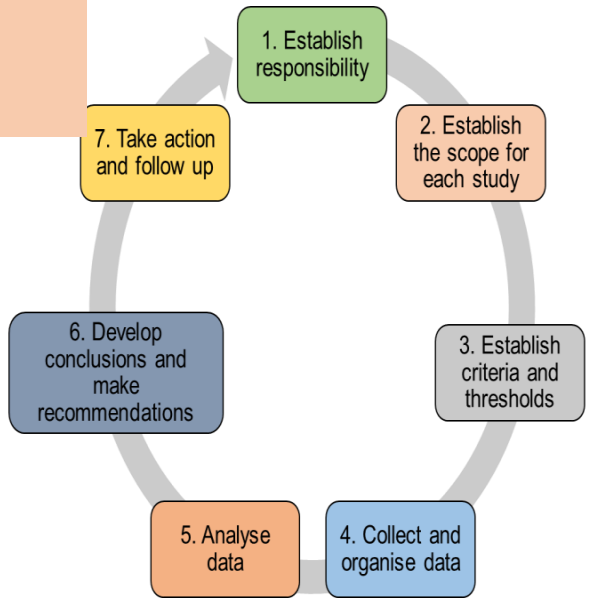
Detailed MUE steps

1. Establish Responsibility
In accordance with the TORs of a PTC e.g. as per annual plan. A technical lead should be assigned

2. Develop Scope of Activities
Medicine use problem needs to be identified e.g. ABC or VEN analysis, DDD analysis, ADR reports, medication error reports, antibiotic sensitivity results, procurement studies, hospital and primary care clinic indicator studies, patient complaints or feedback, and staff feedback



3. Establish Criteria
Criteria used should be from reliable evidence-based literature sources and National STGs.
To simplify the review process, 3 to 5 indicators should be used e.g.:

- **Process Indicators** – indications, dose, quantity dispensed, preparation and administration of medicine, laboratory monitoring, contraindications, drug interactions, patient education and counselling.
- **Outcome Indicators** – clinical outcomes such as stabilised blood glucose and fewer asthma attacks, decreased hospitalisation, improved quality of life of the patient.
- **Pharmacy Administration Indicators** – correct costing, accurate billing and dispensing records, use of generics or therapeutic equivalents, formulary use and quantity dispensed

4. Define and Establish Thresholds
Threshold needs to be determined for each criterion e.g. 90 – 95%. Results achieved below the threshold will warrant

5. Collect Data and Organise Results

Prospective studies are performed as prescribing or dispensing is being performed - enables intervention e.g. indication, dose, duration of therapy, dosage form and route of administration, potential interactions, appropriate selection, therapeutic substitution and quantity dispensed.

Retrospective studies are performed after prescribing or dispensing has been performed e.g. chart reviews, prescription records and laboratory records, which allows a more flexible review period.

6. Analyse Data

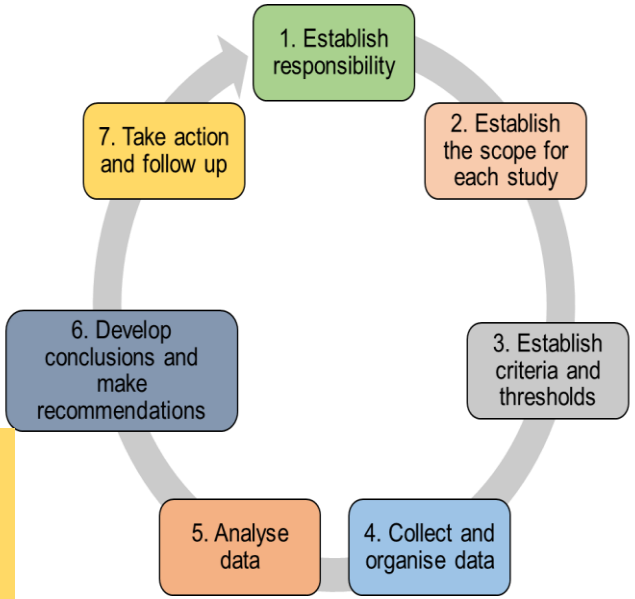
Results are tabulated against indicators and compared, with data analysed at least quarterly.

If the threshold is not met, an intervention may be necessary

7. Develop Recommendations and Plan

Results are presented to the relevant stakeholders, including the PTC, and appropriate recommendations for intervention are proposed (managerial; educational; regulatory) - e.g.

- Education (memos to practitioners, in-service training, workshops)
- Implementation of medicine order forms or prescriber restrictions
- Formulary changes



8. Conduct MUE Follow-Up

Long-term follow-up is important for correction of the irrational medicine use and MUE should be on-going.

Feedback is important and educational, managerial and regulatory interventions may be needed to improve RMU

Strategies to Improve Medicine Use

Strategies to Improve Medicine Use – Managerial

Managerial interventions include use of audit plans, implementation of local protocols to provide further restrictions to the STGs, as well as individual patient use or other restrictions on EML medicines.

AUDIT AND FEEDBACK

MUEs are a common method of audit, with an analysis being performed to identify medicine use problems, then repeated according to an ongoing, structured plan

MUEs may assess processes or treatment outcomes.

FORMULARY RESTRICTIONS

Restrictions may be placed on medicines to ensure better control over use, while maintaining access

Examples:

- Individual Patient Access
- EML (restricted)

TREATMENT PROTOCOLS

Local guidelines attached to a medicine by a relevant PTC - used in addition to the National STGs and should not replace them.

Example:

Use of a non-EML medicine for which a National STG is not attached.

These should follow the same format of the National STGs on the MMDS