

Dosing units help avoid medication errors

Oliver Freudenreich, MD

Employing clinical reference dosing units helps you easily spot psychotropic doses outside the usual range

Many medications are available in numerous dosage forms, which increases the risk of medication errors. To reduce dosing errors and avoid unnecessarily complex dosing, I suggest employing a “clinical reference dosing unit” (CRDU)—a basic reference dose expressed in milligrams that covers the typical dose range if administered as 1 to 4 pills.

CRDUs can help you and your patients remember a typical starting dose (1 pill), a target dose (2 or 3 pills), a high dose (4 pills), and a safe dose to make changes (1 pill). CRDUs also can help you track your prescribing because you can easily spot doses outside the usual range. For example, 8 pills indicate an unusually high dosage and a half pill might be too low.

Implementing CRDUs

Develop a list of CRDUs for the psychotropics you frequently prescribe. Note that the appropriate CRDU for a medication might vary among different clinical populations (*Table*). For any given medication use only 1 formulation, such as immediate-release or extended-release.

Monitor dosing by asking patients how many pills they take and when they take them.

Patient education

Instruct your patients to initiate or change doses based on the number of pills, with 1 pill corresponding to the medication's CRDU. For example, you might tell your patient, “Start with 1 pill at night for 1 week, then go up to 2 pills at night until you see me again.” Patients are more likely to cor-

Table

Sample CRDU prescribing of risperidone

Patient population	CRDU (1 pill)	Dose range (1 to 4 pills)
First-episode psychosis patients	1 mg	1 to 4 mg
Chronic patients	2 mg	2 to 8 mg
Geriatric patients	0.5 mg	0.5 to 2 mg

CRDU: clinical reference dosing unit

rectly implement changes when instructions are based on the number of pills rather than on milligrams. Change the dosing to reach desired efficacy or increase tolerability by increasing or decreasing the number of pills or shifting the timing of the dosage, such as going from 1 pill twice daily to 2 pills at night.

Although CRDUs can be used for many antipsychotics, antidepressants, and anxiolytics, this method is not appropriate for medications that:

- are administered based on plasma levels or body weight, such as lithium or valproate
- do not have linear pharmacokinetics, such as phenytoin
- require a slower titration, such as clozapine.

Health insurance companies might not cover the number of pills needed per month to prescribe based on CRDUs. If necessary, consider splitting pills, and think of a half-pill as 1 CRDU. After you reach a stable dose, often you can prescribe the daily dose as a single pill.

Dr. Freudenreich is director of the first episode and early psychosis program, Massachusetts General Hospital, Boston.