

South African adult hospital level essential medicines list
Chapter 15: Mental health conditions and substance misuse
Estimated consumption of quetiapine, oral immediate release vs. sustained release formulations
in public sector

Estimated modelling for quetiapine controlled release formulation

Date: 5 March 2020

Background:

Quetiapine was approved by NEMLC as second-line treatment option for depressive bipolar episodes¹. Treatment is initiated on immediate release formulations and up-titrated to patient-individualised maintenance treatment for residual depression. Maintenance treatment can be either immediate-release or controlled-released formulations with equipotent dosing ratio of 1:12². Thus, both formulations are proposed on the therapeutic interchange database for Adult Hospital Level, 2019³.

Prevalence and incidence rate of bipolar disease in South Africa:

There are no prevalence studies for severe mental illness in South Africa, and limited data. From data available, global burden of disease studies estimate a population prevalence of 0.6% for Bipolar Disorder⁴.

Model and assumptions:

Of note is the intermittent supply challenges of first-line treatment option, lithium (which is currently not on contract and requires to be procured as a buy-out on quotation). Expert opinion on estimates of depressive episodes of bipolar disorder is $\pm 50\%$; which equates to an estimated 0.3% of the population. As this is a new recommendation in the Adult Hospital Level STGs and EML, 2019 edition phased in uptake should be considered; possibly 10-20% for the first year. However, the calculated estimate is 80% above the current tender estimates; and it would be prudent to rather consider the treatment protocol of quetiapine in adults to attempt to forecast the proportion of quetiapine controlled release formulation that is required.

Adult Hospital Level STGs and EML, 2019:

Quetiapine treatment protocol:

- Quetiapine, oral, usual dose range 100–300 mg at night (specialist prescribed).
 - Titrate to clinical effect, e.g: Day 1: 50 mg. Day 2: 100 mg. Day 3: 200 mg. Day 4: 400 mg.
 - In the elderly and patients with hepatic impairment: Start with 25 mg and titrate up more slowly according to clinical effect.

Titration with immediate-release formulations:

- 25 mg tablet
- 100 mg tablet
- 200 mg tablet

¹ NDoH, Affordable Medicines Directorate – Essential Drugs Programme. Medicine Review: Quetiapine for depressive bipolar episodes in adults, March 2019.

² British National Formulary, 2019

³ Minutes of the NEMLC meeting of 19 March 2020.

⁴ Docrat S, Besada D, Cleary S, Daviaud E, Lund C. Mental health system costs, resources and constraints in South Africa: a national survey. Health Policy Plan. 2019 Nov 1;34(9):706-719.

<https://www.ncbi.nlm.nih.gov/pubmed/31544948>

Maintenance therapy with controlled-release formulations:

- 100 mg controlled release
- 200 mg controlled release
- 300 mg controlled release

Proposed estimation:

Single-item tendering for:

- 25 mg immediate release – previous estimate (inflated by 10-20%)
- 100 mg immediate release – estimate 8% of previous estimate (inflated by 10-20%)
- 200 mg immediate release – estimate 8% of previous estimate (inflated by 10-20%)
- 300 mg controlled release – previous estimate (inflated by 10-20%)

Group tendering for:

- 100 mg immediate release **vs** 100 mg slow release – estimate 92% of previous estimate (inflated by 10-20%)
- 200 mg immediate release **vs** 200 mg slow release – estimate 92% of previous estimate (inflated by 10-20%)
- 300 mg immediate release **vs** 300 mg slow release – previous estimate (inflated by 10-20%)

Note that these are proposed modelled estimates to be used at the discretion of the respective Provinces. As this is a new essential medicine, continuous monitoring and communication with the supplier would be required throughout the tender cycle. However, if the proportioning between immediate- and controlled release formulations is too complex for Provincial consideration, it is recommended that the immediate release formulation be rather considered.

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