INCREASING ANTIFUNGAL USE IN AUSTRALIAN HOSPITALS

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BACKGROUND

- There is **increasing evidence to support the need for antifungal stewardship**, as inappropriate use contributes to the emergence of antifungal resistance and there are limited new therapeutic options being developed.

METHODS

- Antimicrobial usage and patient admission data were collected for **224 hospitals nationally** between **Jan 2017 and June 2020**
- Usage rates (defined daily dose (DDD) per 1000 occupied bed days (OBDs)) were calculated to enable comparison of usage trends by state, hospital and specialty.

KEY FINDINGS

1. The **total national antifungal usage rate increased 5.2%** for all hospitals contributing to NAUSP.
2. **Liposomal amphotericin and posaconazole** usage rates increased in five of the six jurisdictions.
3. There were **variations in rates of usage as well as agents used** between states and territories
4. **Specialist haematology/oncology wards** had usage rates approximately **ten times higher** than overall hospital use.

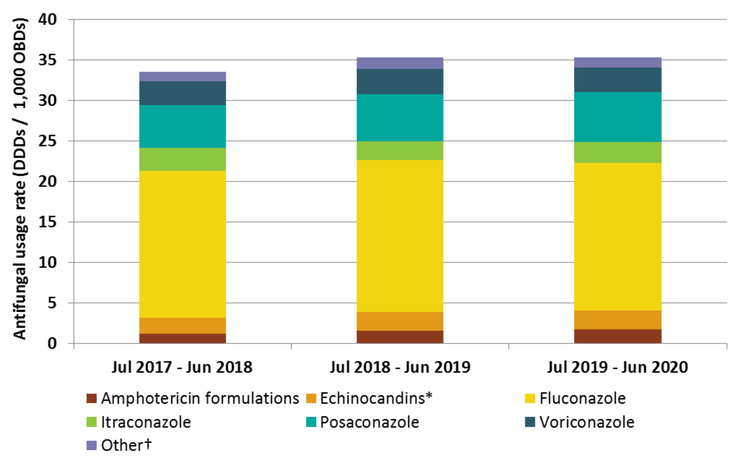
TAKE-AWAY

- The growing use of **high cost** systemic antifungal agents means **stewardship is becoming increasingly important**.
- Antifungal surveillance is one tool to support stewardship and to target interventions to reduce costs and ensure appropriate prescribing.

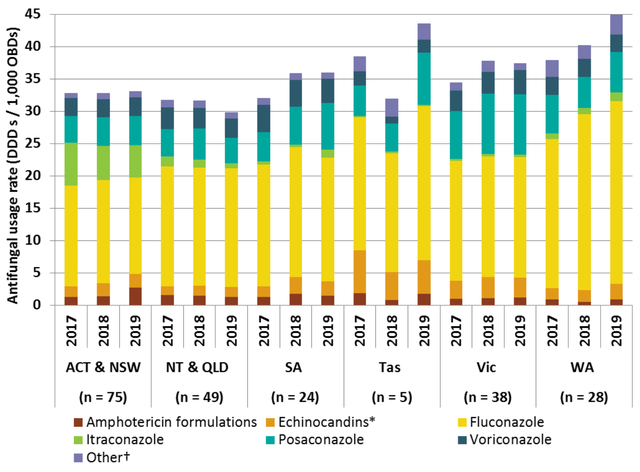
National yearly aggregate antifungal usage rates

National antifungal usage rates increased from 33.5 DDDs/1,000 OBDs for year ending 30 Jun 2018 to 35.3 DDDs/1,000 OBDs for year ending 30 Jun 2020.

There was a **61% increase in the usage rates for liposomal amphotericin** (0.95 DDDs / 1,000 OBDs to 1.53 DDDs / 1,000 OBDs) and p**osaconazole usage rates increased 17.5%** (0.95 DDDs / 1,000 OBDs to 1.53 DDDs / 1,000 OBDs) over this three year period.



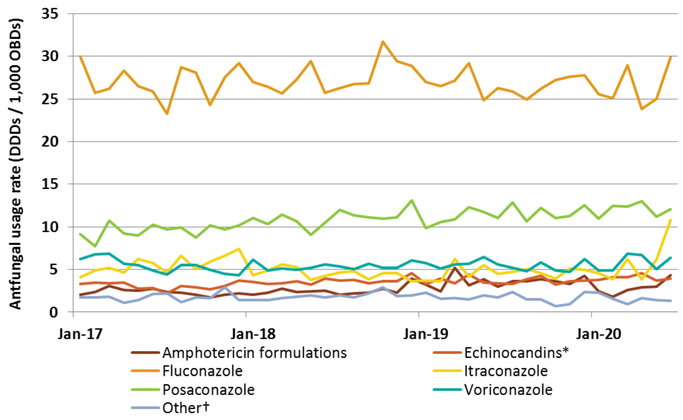
Annual aggregate antifungal usage rates by state 2017-19



Amphotericin usage rates doubled in NSW and ACT between 2017 and 2019
Echinocandin usage rates were at least 75% higher is Tasmania than other states and territories
Fluconazole use was highest in WA followed by Tasmania
Itraconazole usage was more than three times greater in NSW and ACT and usage rates more than doubled in SA between 2017 and 2019
Posaconazole usage was highest in Victoria followed by Tasmania

Principal referral hospital antifungal usage rates 2017-20

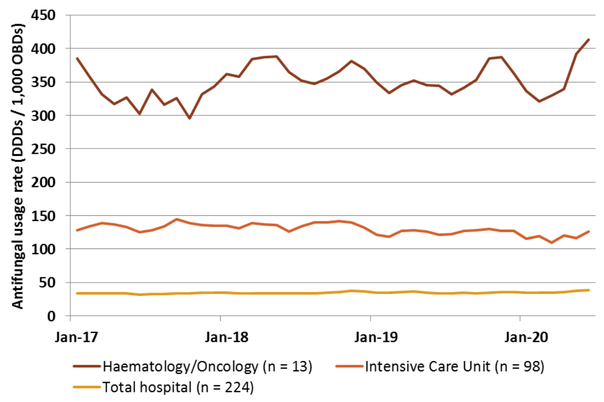
Fluconazole had the greatest usage in Principal Referral sites, however, the use rate has remained relatively stable since 2017.
There was an increase in posaconazole use in Principal Referral hospitals from 2017 to 2019 as well as an upward trend in usage of amphotericin formulations.

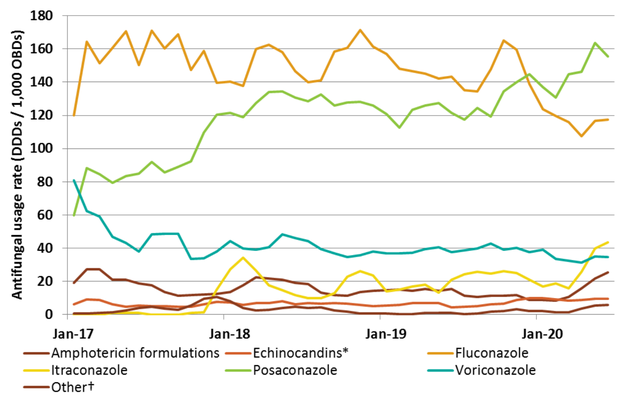


Average haematology / oncology antifungal usage rates

Haematology / oncology usage rates were 352 DDDs/ 1,000 OBDs, compared to 130 DDD / 1,000 OBDs for intensive care units and 35 DDD / 1,000 OBDs for total hospital use between Jan 2017 and Jun 2020, highlighting the importance of stewardship in this setting.

Voriconazole use decreased 57% (from 81 DDDs/ 1,000 OBDs to 35 DDDs/ 1,000 OBDs) while usage rates for amphotericin formulations, echinocandins, itraconazole and posaconazole increased. In particular there was a significant increase in posaconazole usage (161%) over the reporting period.





DDD = defined daily dose; OBD = occupied bed days
* Echinocandins include anidulafungin, caspofungin and micafungin
† Other comprises flucytosine, griseofulvin, isavuconazole, ketoconazole and terbinafine

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