Communicating Healthcare Data to Patients

Using radar charts to convey complex data

Engaged consumers

- Increases in health technology have led to patients being more involved in their healthcare
- Patients have become more knowledgeable and engaged consumers who seek out patient centered care


Lober & Flowers (2011)

How do we consume health data?

Simple graphics that depict an overall snapshot of health data

Schindler et al., 2020
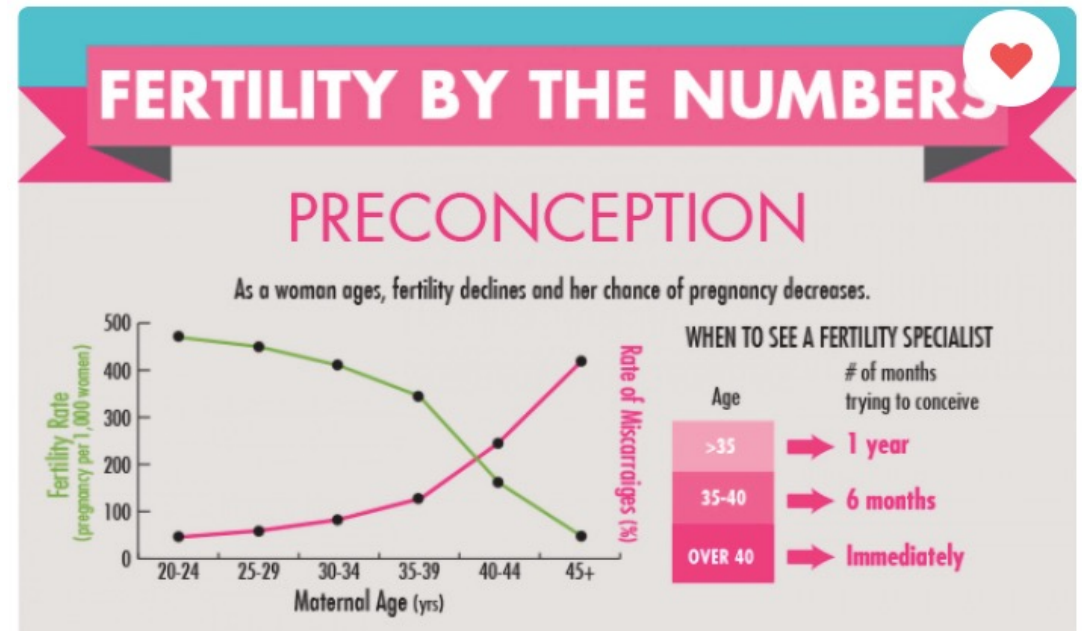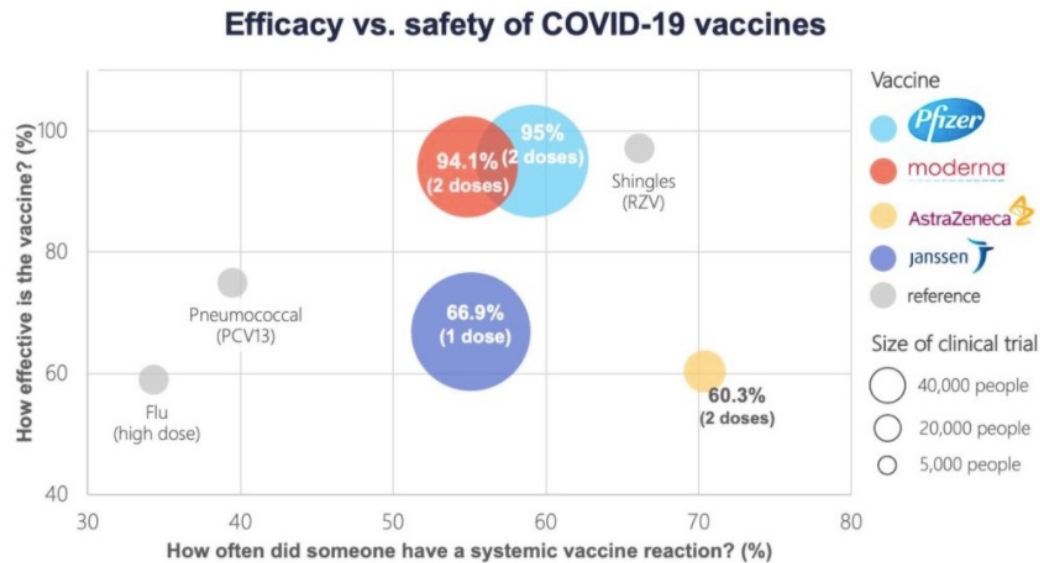
Why is this important?

- Health literacy can impact health outcomes

- Physician-patient communication (e.g., patient education) enable treatment related behaviour and can lead to more favourable health outcomes

- BUT health information is often more complex than what we see
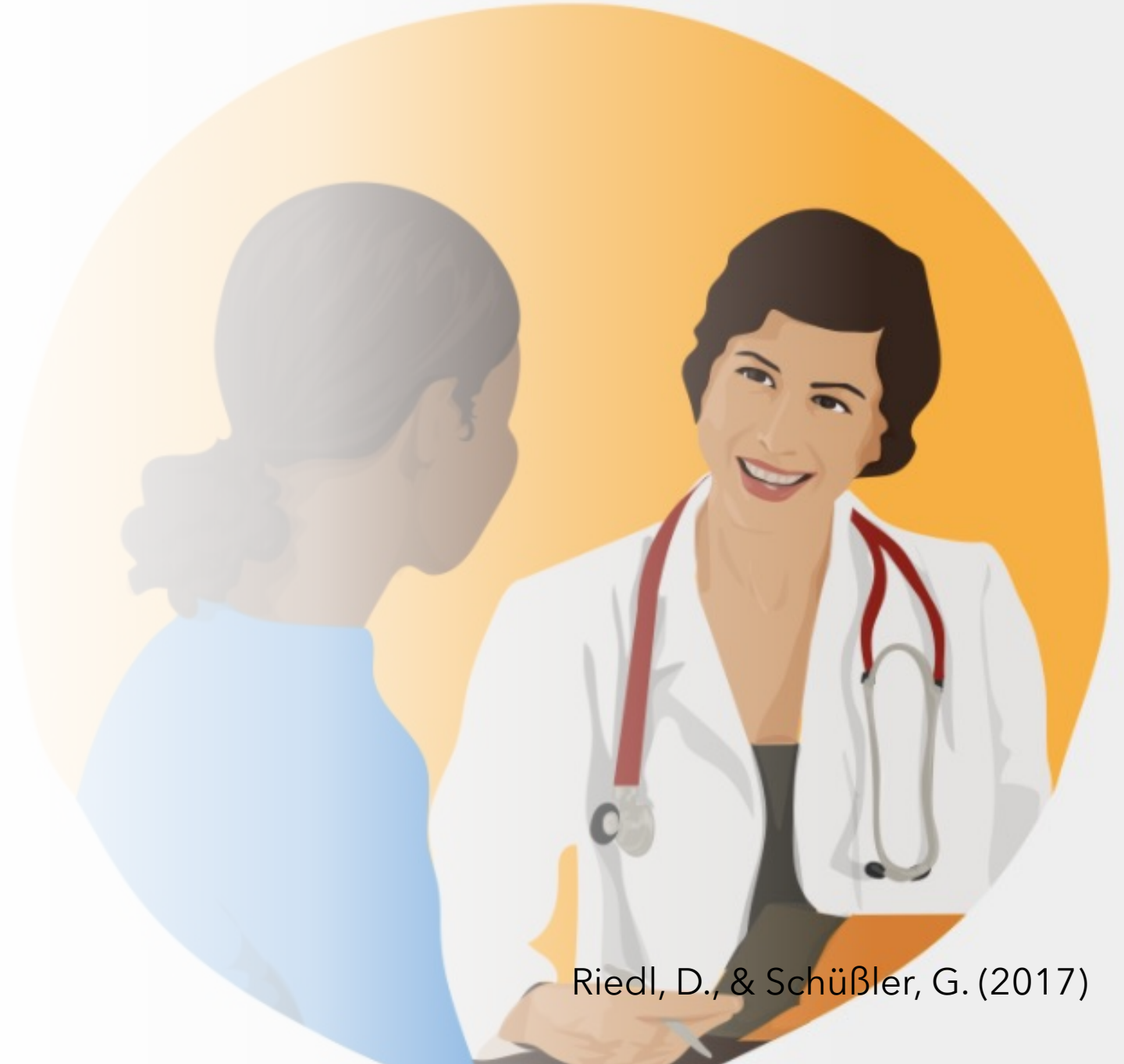
Riedl, D., & Schüßler, G. (2017)

Radar charts

- Good for visual comparisons of multivariate data
- Circular graphing method that uses a series of spokes originating from a central point, each representing different variable label
- Dominant perceptual properties are size and shape
- Uses one single scale for all variables

Saary, 2008

Radar charts for patients

- Radar charts may be an effective way of communicating with patients
- Allows for a number of outcome variables as well as several different options (e.g., cost and outcome data simultaneously)

Comparing the Value of Three Alternative Prostate Cancer Treatments

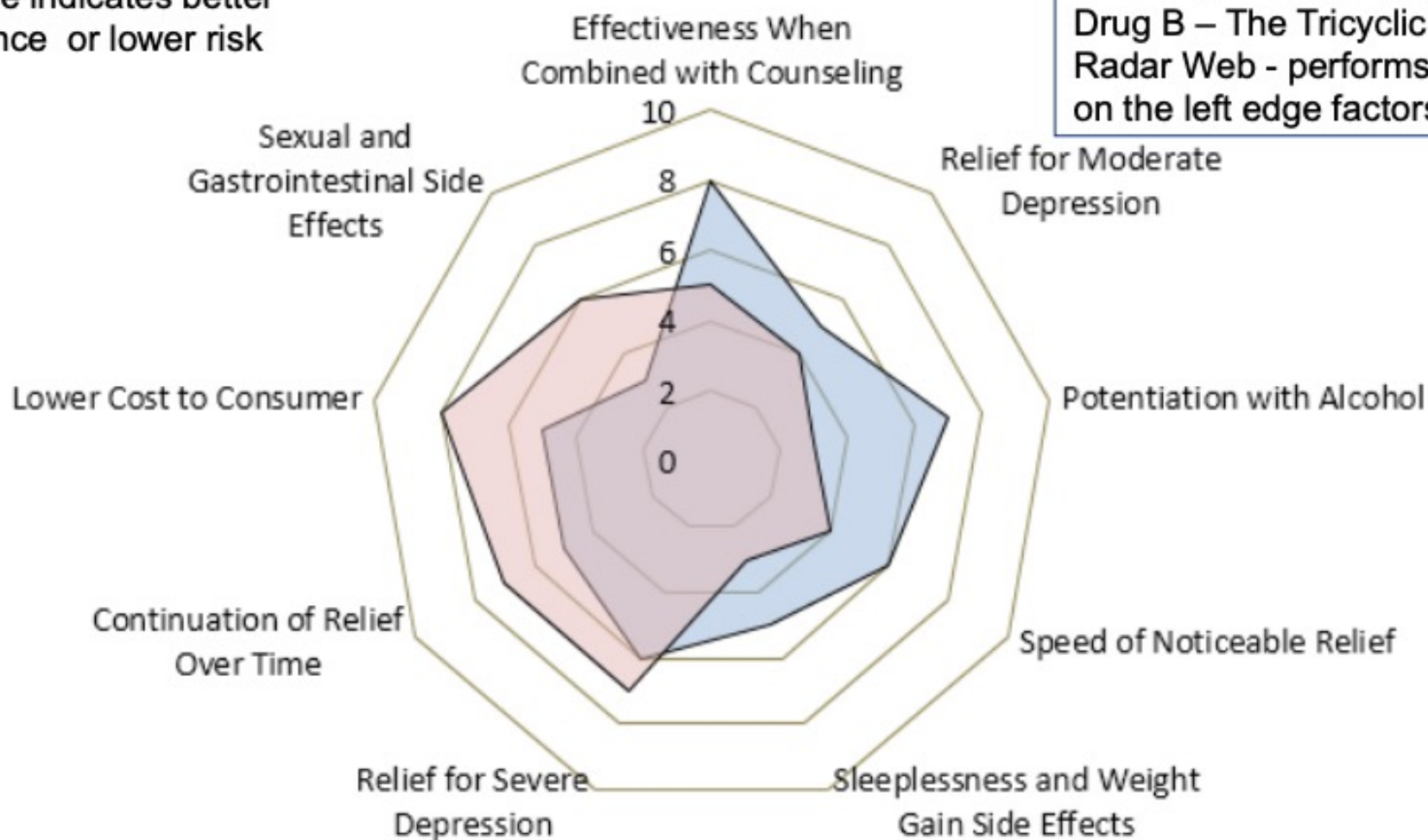A score of 100 represents the ideal performance.

Kaplan et al., 2015
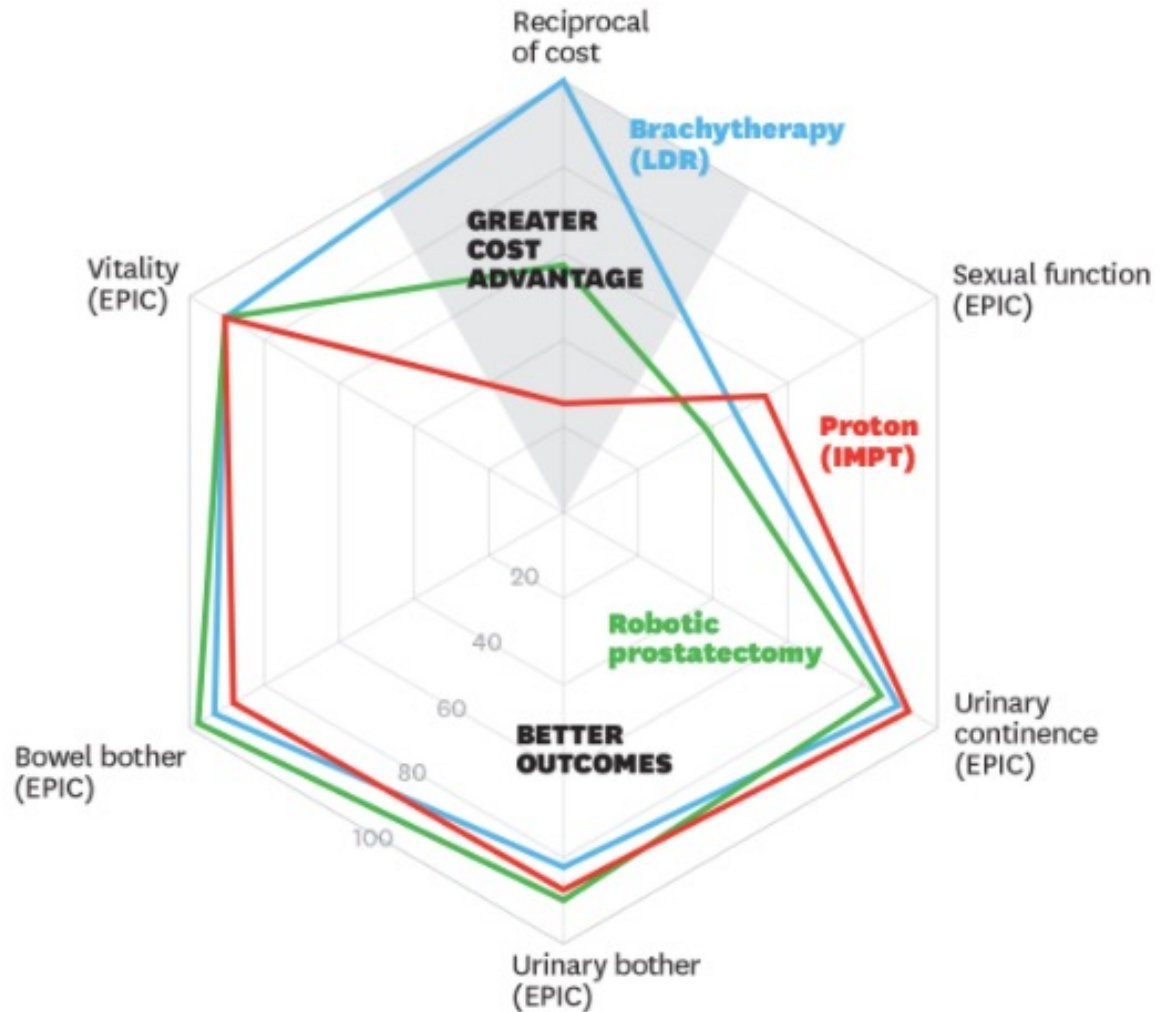
Radar Charts

Features of Two Anti-Depressant Pharmaceuticals

Higher score [0-10 range] per feature indicates better performance or lower risk

Drug A - The SSRI – Blue
Radar Web - performs better on the right edge factors.
Drug B – The Tricyclic – Pink
Radar Web - performs better on the left edge factors.

☐ Drug A - SSRI   ☐ Drug B - TCA

Effectiveness When Combined with Counseling

Relief for Moderate Depression

Potentiation with Alcohol

Speed of Noticeable Relief

Sleeplessness and Weight Gain Side Effects

Relief for Severe Depression

Continuation of Relief Over Time

Lower Cost to Consumer

Sexual and Gastrointestinal Side Effects

Mean satisfaction ratings

Table 1
Means for satisfaction variables

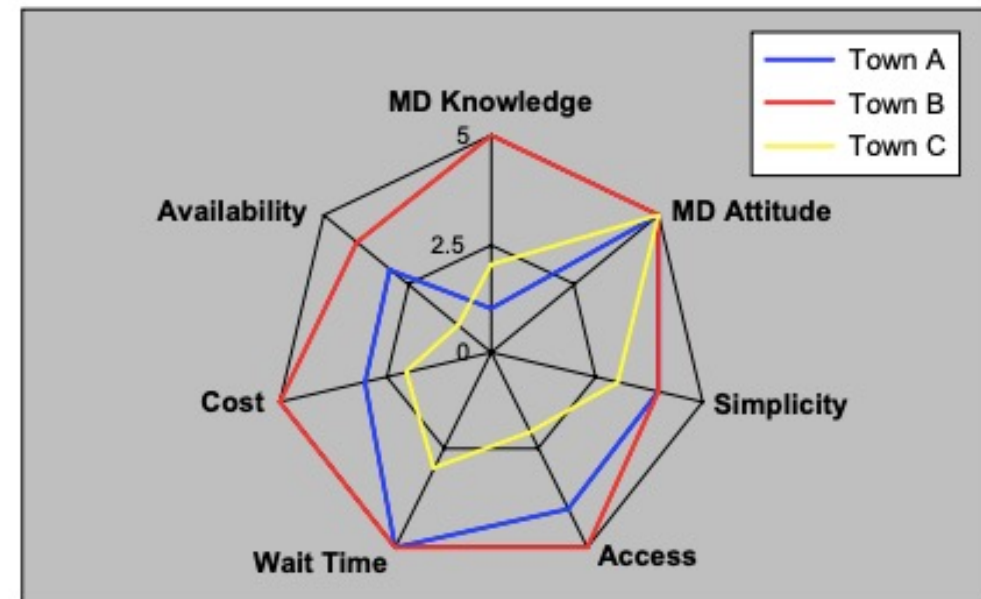| | Mean satisfaction ratings | | | | | | |
	MD Knowledge	MD Attitude	Simplicity	Access	Wait Time	Cost	Availability
Town A	1	5	4	4	5	3	3
Town B	5	5	4	5	5	5	4
Town C	2	5	3	2	3	2	1

Fig. 1. Radar chart comparing three groups on seven variables.

Saary, 2008

Limitations

- Uses the same scale for all variables

- Overplotting (can get overwhelming)

- Circular layouts can be more difficult to read

Cat Output Status from RSPCA at Australia
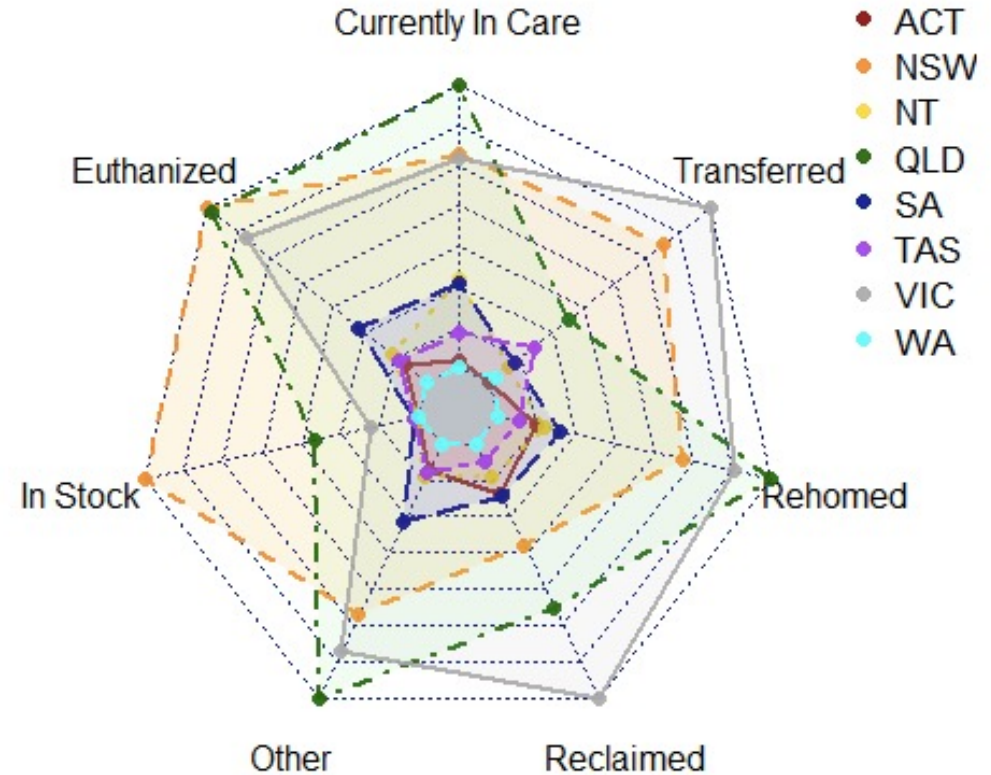
Takeaway

- Patient health literacy is an important factor in adherence to health suggestions

- Data visualization should depend on what you are trying to communicate to your patient/client

- Radar graphs may be helpful tools in communicating multivariate data to patients (as well as providers) and engage them in healthcare options and outcomes

References

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