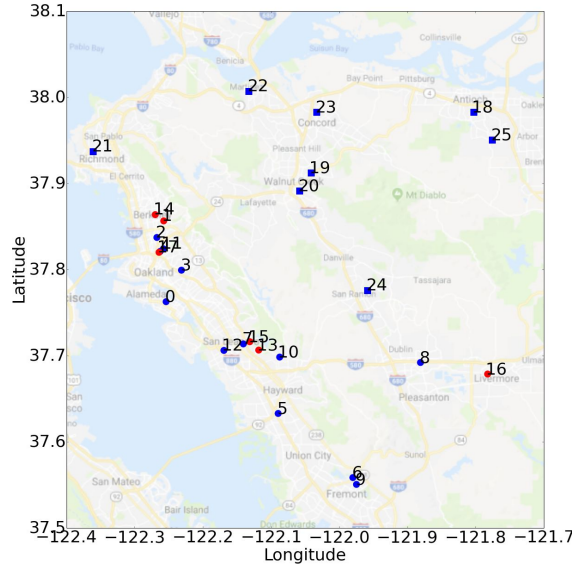


Report: Alta Bates closure would critically impact poor, people of color

<https://www.eastbaytimes.com/2019/01/01/report-alta-bates-closure-would-critically-impact-poor-people-of-color/>



<https://www.berkeleyside.com/2018/12/12/save-it-or-sell-it-berkeley-asks-sutter-for-a-concrete-plan-for-alta-bates>



ERs in the area surrounding Alta Bates. Red = Candidate, Blue = Currently Open

Facility Location Composite Objective Function

$$\min_z D(z) + \lambda F(E_1, \dots, E_{|\mathcal{L}|}) + \eta R(z)$$

λ : Equity Weight

η : Capacity cost weight

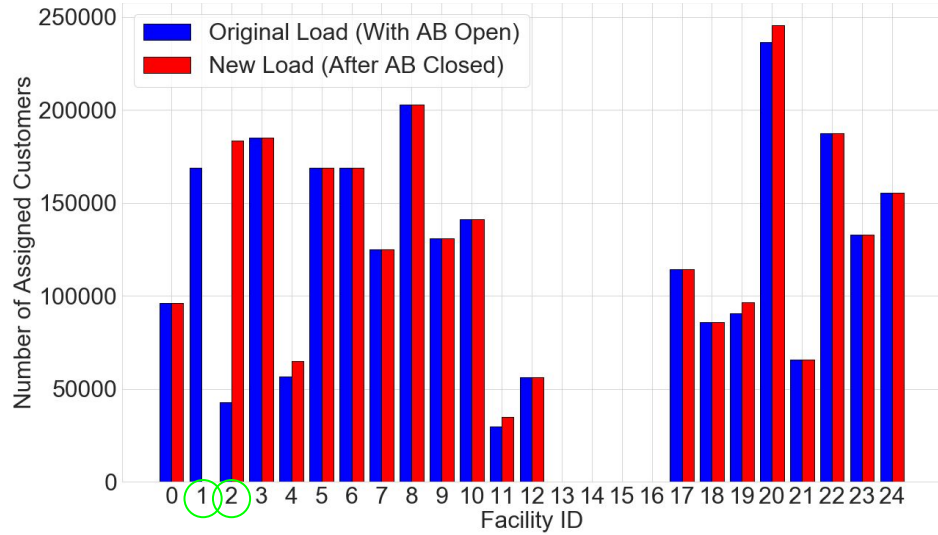
E_i : Group effects

- Which equity metric? 24+ options (Marsh & Schilling '93)

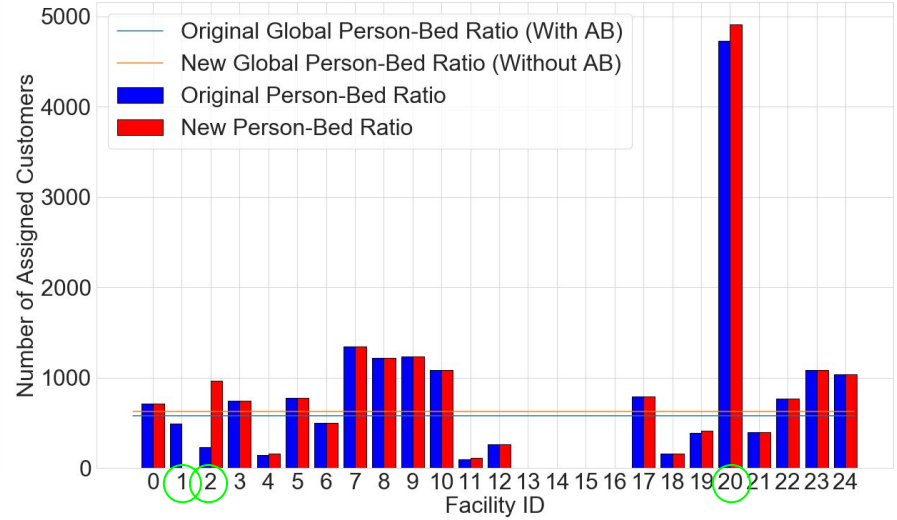
- Which demographic grouping? (Race? Income? Insured?)

- How much weight to assign to equity/capacity term?

Impact of Alta Bates Closure with no replacement

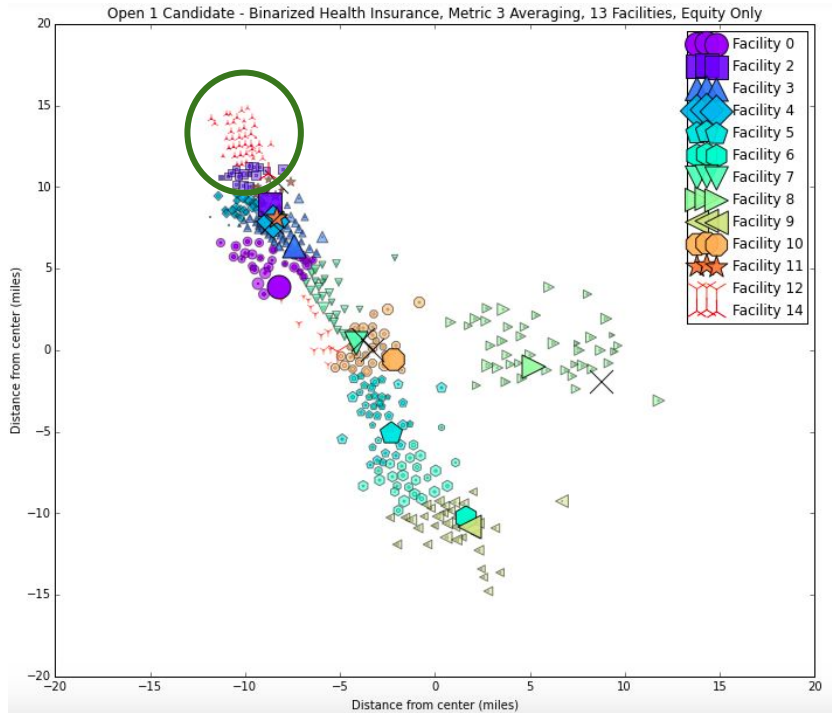


Left: Increase in users of each ER when Alta Bates is closed. Notice the >200% increase in usage for Facility #2, Children's Hospital and Research Center at Oakland.

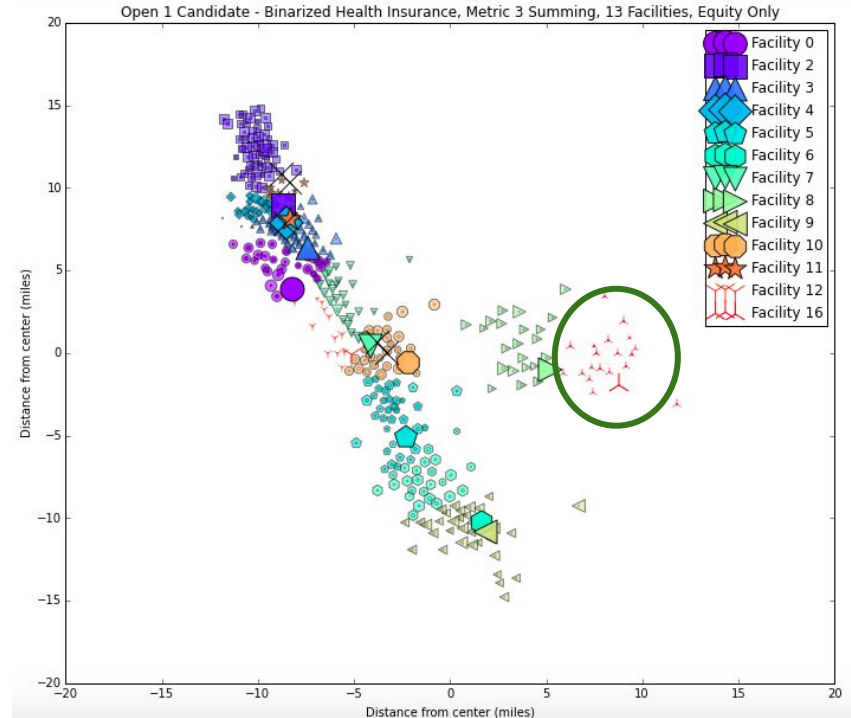


Right: Increase in ER usage as a function of capacity. Notice facility #2 goes from underutilized to overutilized, and facility #20 (Kaiser Richmond) is even more overused.

Equity Measurement Matters



Left: Replacement facility for Alta Bates, Metric 3, Averaging, with Health Insurance grouping

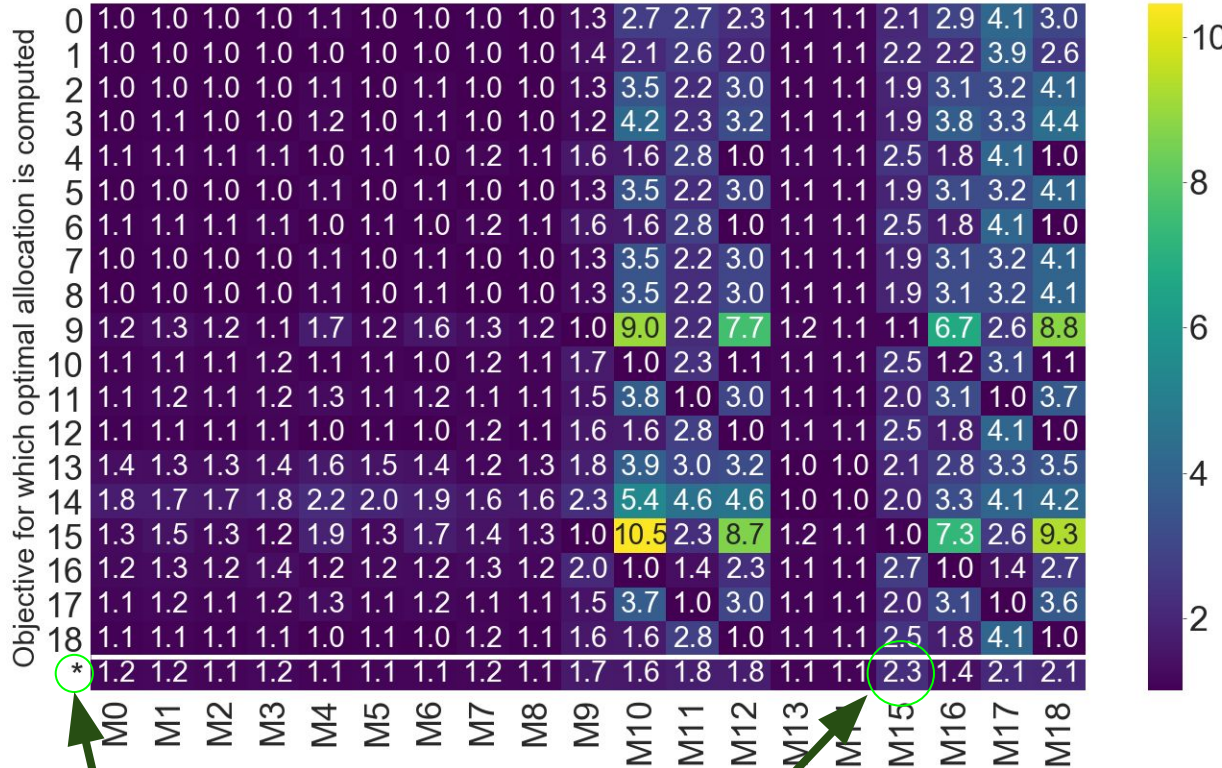


Right: Replacement facility for Alta Bates, Metric 3, Summing, with Health Insurance grouping

Approximately optimal solutions

Classes of Equity Metrics and Objective Functions

Scale factors of optima with respect to all composite objectives



Bottom row: Approximate optimum. Notice maximal scale factor is only 2.3

Class	Minimizes	Metric Numbers
MIN-MAX	$\max\{E_A, E_B\}$	M1-M6
ABS-DIFF	$ E_A - E_B $	M7-M12
REL-DIFF	$\frac{ E_A - E_B }{E_A + E_B}$	M13-M18

- 3 equity metric classes (table) which capture 16 equity metrics
- 3 grouping types (Race, Income, Health Insurance)
- 2 Aggregation Types (Population averaging/summing)
- = 18 composite objectives
- (M0 = vanilla objective, no equity)