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Size Based Pricing

Prevailing Wisdom

- 1. We buy a 100mg vial of a drug for \$10k, use a third, so have wasted \$3300 of drug
- 2. Policy prescription: sell smaller vials- a bottle that is 67mg will retail for \$6700
- 3. Assumes that prices reflect volume OR that unused vial can be resold to others (which is forbidden)
- 4. There may be wasted product, but it's not right to quantify wasted dollars as price x unused share of vial



Prevailing Wisdom?

- Most medicines have high fixed cost and low marginal costs of production
- Prices depend on marginal cost (low) and payers willingness to pay for treatment (high)
- 3. For example, Medicare has high WTP-- all FDA approved Rx must be covered
- 4. WTP for treatment doesn't vary by volume needed to treat (a 130lb patient doesn't have a lower WTP than a 250 lb person)
- 5. Forcing smaller vials does not change WTP but may increase marginal cost (extra packaging, higher inventory and distribution costs), increasing prices



Intuition from other markets

AIRLINES

- Marginal cost of flying Boston -> LAX is greater than Boston -> Chicago, but fixed costs are high
- 2. WTP to pay for travel from Boston -> LAX is similar to that for Boston to Chicago (both are hard to drive to for work)
- 3. Implication: prices are weakly associated with distance given high fixed-costs and low marginal-costs
- 4. Forcing 'distance-based pricing' would not lower prices on Boston-Chicago; but it would increase them for Boston-LAX. Both airlines and passengers will be worse off because of trips to LA not taken

American...

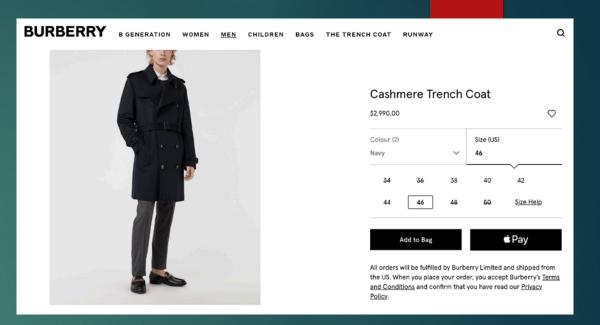
BUTTERMILK (!)

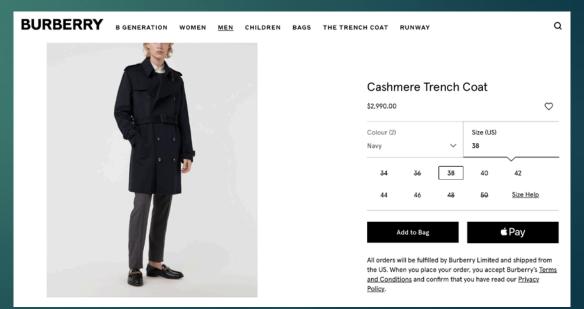
- A gallon of buttermilk sells for \$2.84. I only need 1/4 gallon for recipe.
 So do we have \$2.10 of waste?
- 2. Wrong to value unused buttermilk at \$2.10, because I can't resell unused portion at this price
- 3. If we forced sale of ¼ gallon sizes, they will not sell for \$0.70- they will sell for much more because of higher inventory+distribution costseven a price of \$2.50 is possible



PRICING EXPENSIVE COATS

- 1. Should manufactures price larger sizes higher (reflecting higher cost of luxury inputs), or price the same across sizes (reflecting WTP to have a luxury coat that does not vary by size)?
- 2. If a smaller coat uses 80% of material in the larger one, does this mean that 20% of its price is waste (\$600)?
- 3. Only if it's possible to buy the larger coat, tailor it to a smaller coat, and sell the remaining material as a function of volume
- 4. Forcing 'size based pricing' (20% more material means 20% higher prices) would mean that the small coat still sells for \$3,000 but the larger coat will sell for \$3000+\$600 = \$3600
- 5. Understand why smaller coat will not sell for \$2400 and larger coat for \$3000?





Closing Thoughts

- Leap to conclude that wasted product = wasted dollars, which gets us to size-based pricing
- 2. There may be waste in health care, but it's at the level of whether the treatment was necessary— and whether the price justifies the treatment?
 - Incent providers to make these decisions
 - Allow formularies for infusion drugs (like Medicare Part D)
 - Allow biosimilars to enter
- 3. These are different, but harder, determinations, than size-based pricing

