

# Objective Assessment of Wound Dressing Exudate Rate Management by Category

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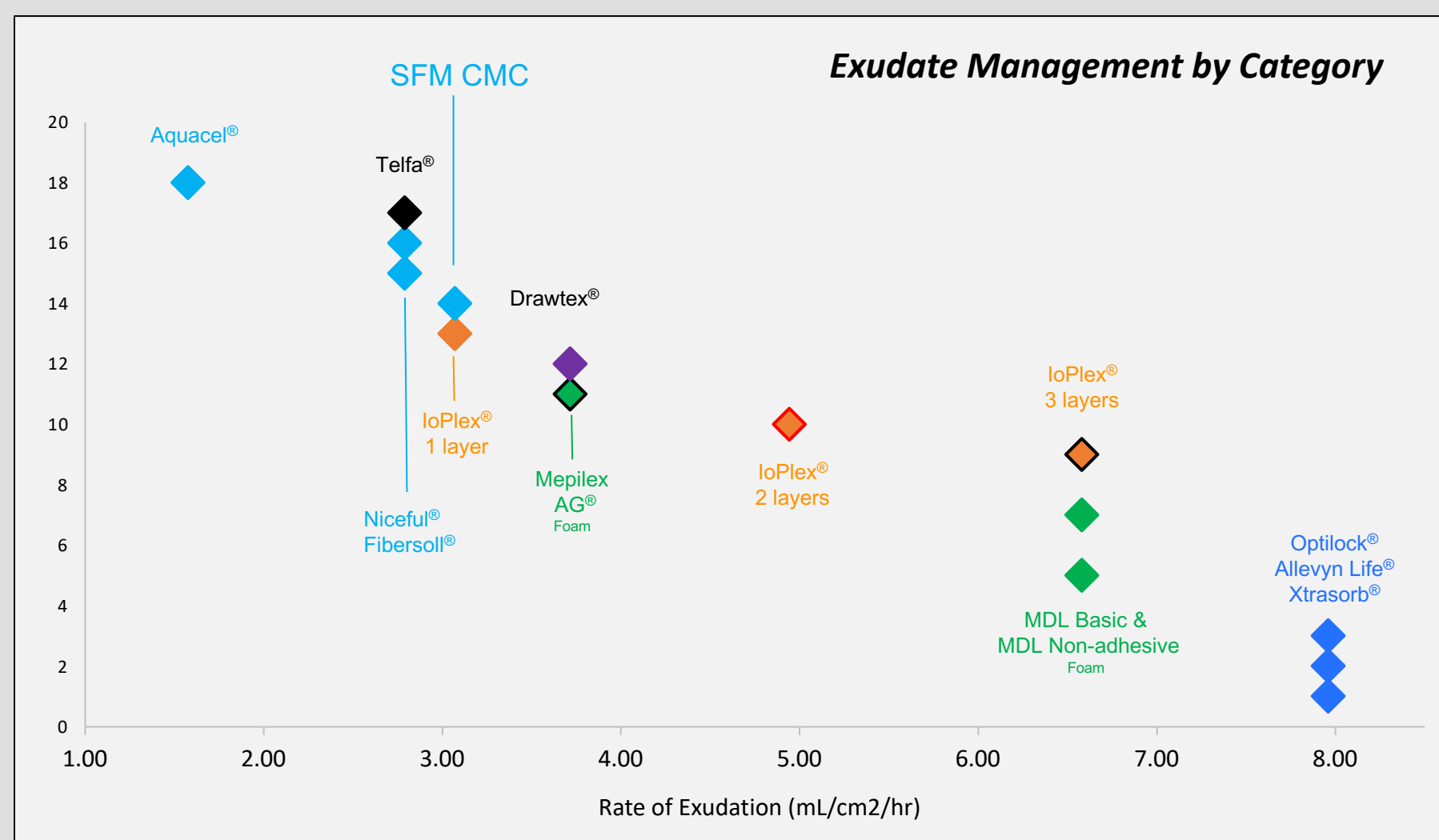
## BACKGROUND

The exudate handling capabilities of wound dressings within and between categories is often indicated subjectively within various texts and marketing materials. However, little data exist demonstrating true qualitative and quantitative differences. Such a reference might serve as an objective means for clinical dressing selection, especially for less experienced clinicians entering the field. Clinician experience, while exceedingly valuable, is subject to patient-to-patient variability. Pharmacy students on experiential rotations were charged with developing a reference of dressing exudate handling capabilities that may be revised and expanded perpetually (online) by future students. This poster represents their progress to date.

## METHODS

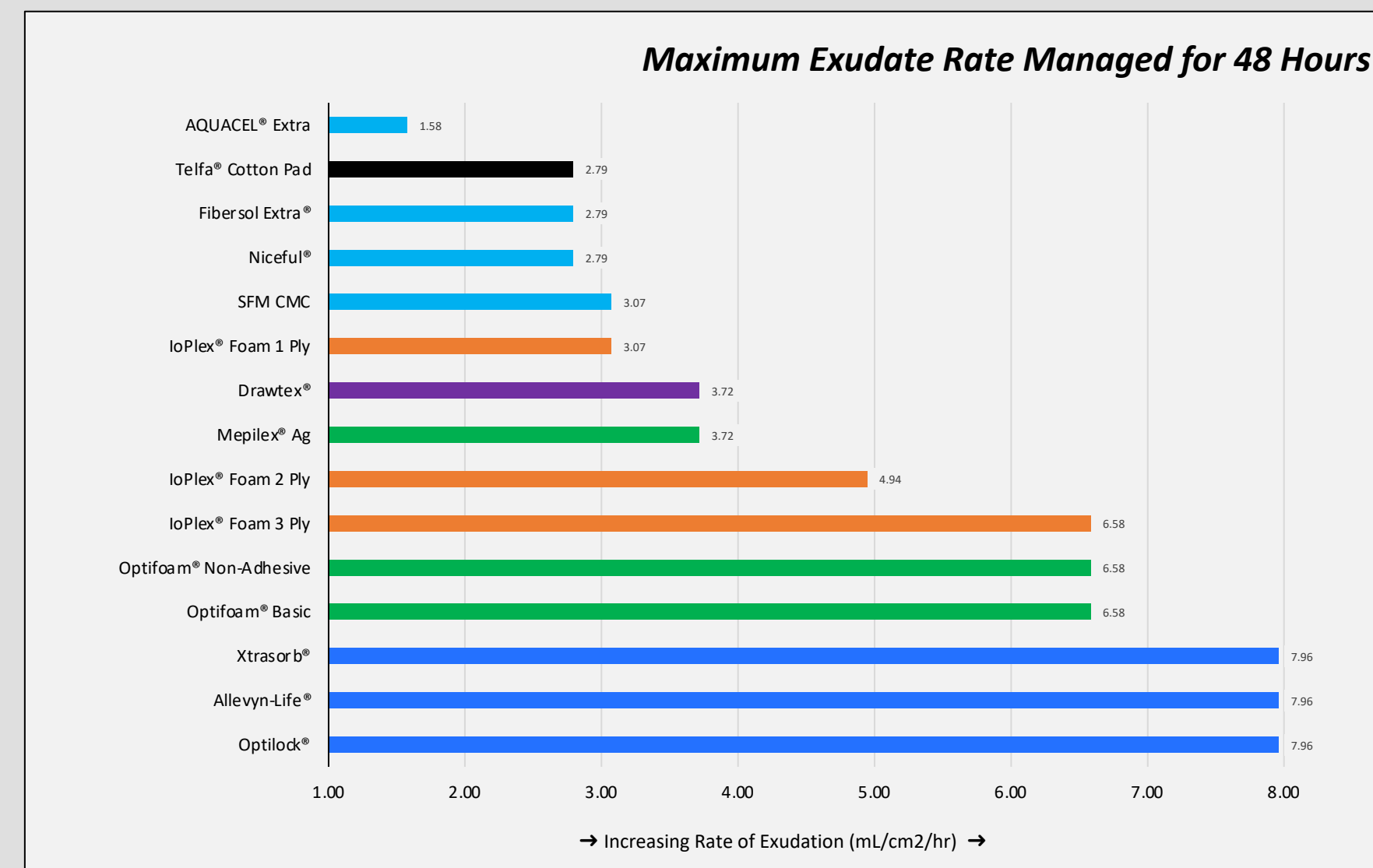
A continuous exudate rate apparatus was fabricated and optimized by our pharmacy students during laboratory rotations. A micro pump system capable of accurately delivering model exudates from 0.06 to 3400 mL/min was plumbed to wound dressing wells of standardized dimensions. Various dressings by category were die cut to a uniform diameter. All dressings were secured under a standard weight to mimic clinical fixation. For each dressing, the maximum exudate rate at 24 and 48 hours was determined (i.e., max rate without leakage). Absolute capacity and extrapolated evaporation values were also determined.

## RESULTS by Rank

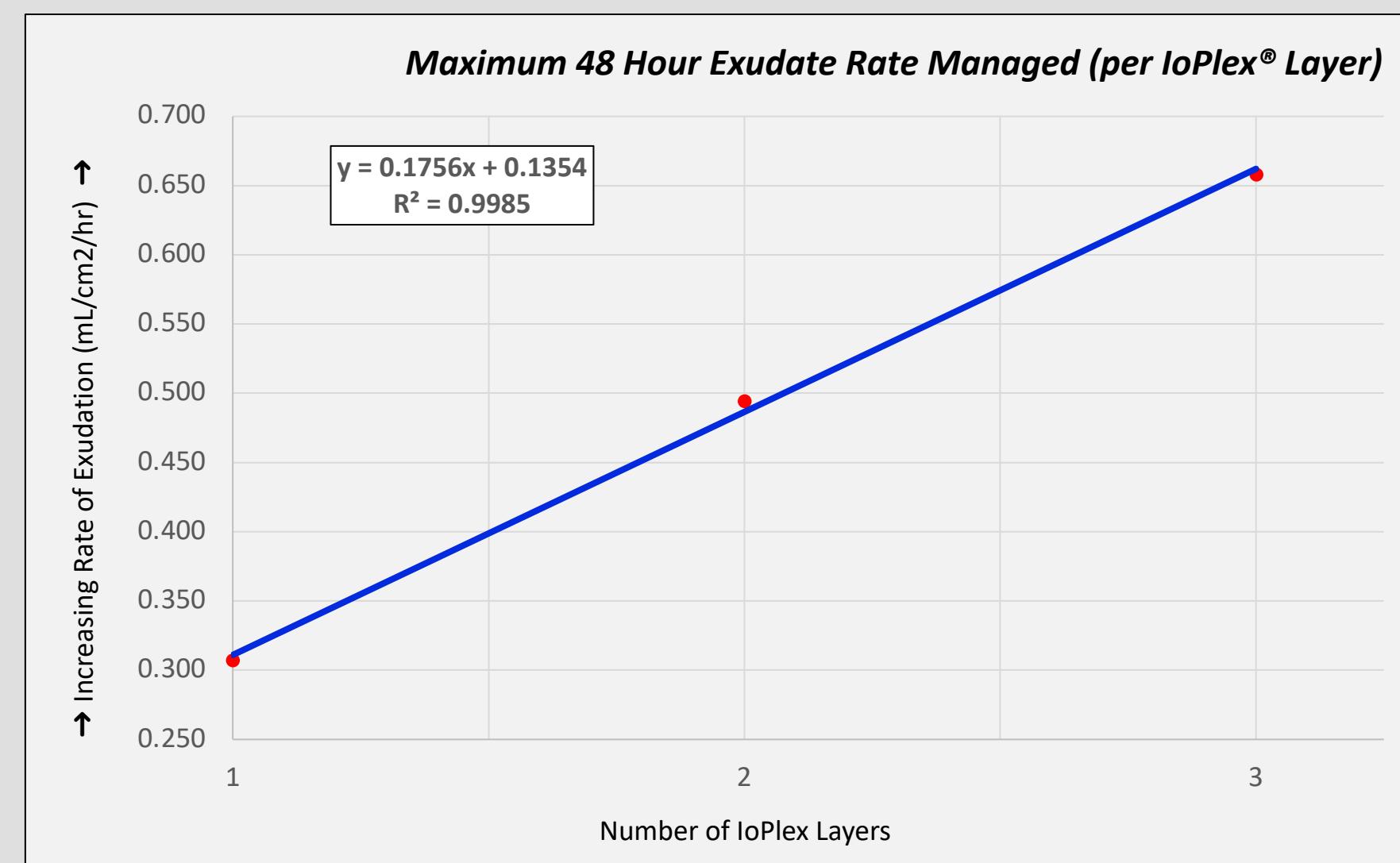


- ◆ CMC Fibers (hydrofiber)
- ◆ Cotton Pad (Telfa®)
- ◆ PVA Foam (IoPlex 1 layer)
- ◆ Cellulosic fiber (Drawtex®)
- ◆ PU Foam (Mepilex® Ag)
- ◆ PVA Foam (IoPlex 2 layers)
- ◆ PVA Foam (IoPlex 3 layers)
- ◆ PU Foam
- ◆ Super Absorbents (limited evaporation)

## RESULTS by Maximum Rate



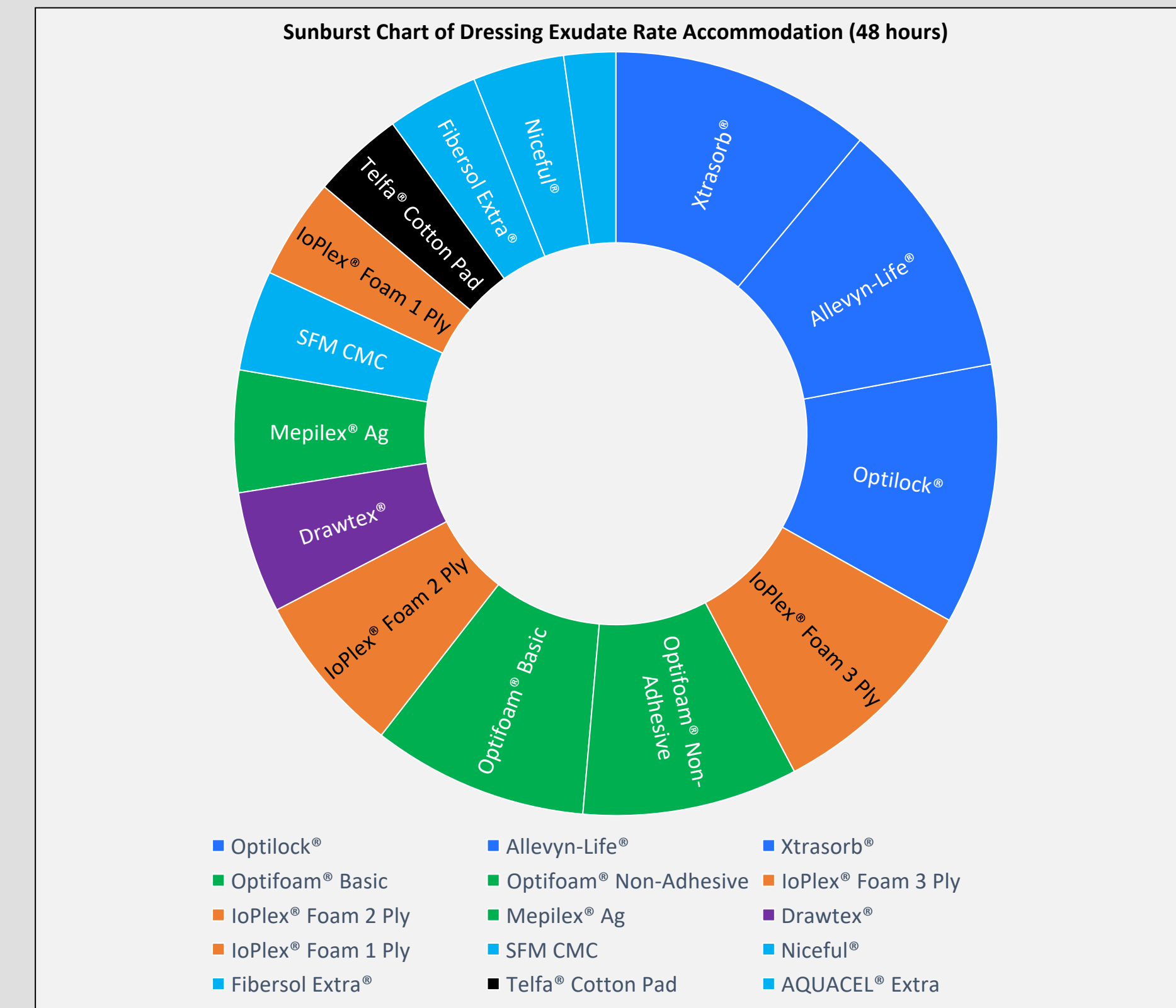
## PREDICTIVE UTILITY



### Summary:

- Adding layers of IoPlex produces a very predictable increase in exudate rate control.
- 1 Ply is a bit more capable than gelling fibers, and *significantly* better than Aquacel Extra.
- 1 Ply can manage 83% of Drawtex's maximum rate (close, but a bit less than Drawtex).
- 2 Ply can manage 60% faster rates, and is more capable than Mepilex Ag and Drawtex.
- 3 Ply can manage 114% faster rates (>2x), and is substantially equivalent to the thicker foams.

## SUNBURST CHART



## RESULTS

The apparatus and protocol developed has demonstrated an objective assessment of dressing exudate handling capabilities. The charts herein illustrate the maximum exudate rates that each test dressing can manage over a 48-hour period. The absolute dressing capacities at each period are also provided.

## DISCUSSION & CONCLUSIONS

While it may be argued that the rates and model exudates presented herein are not true surrogates for patient wounds contain proteins and other constituents, the results are objective and provide valuable relative direct comparisons of wound dressings by category.

In the future we may consider more clinically relevant model exudates e.g., bovine serum. However, the results to date provide objective and practical comparisons of wound dressings lacking in the field, thereby satisfying the a priori objectives and this professor (undoubtedly the pivotal goal of every student contributing to our field through this unique experiential rotation).