# Ischemic and Bleeding Risk Prediction After ACS and PCI

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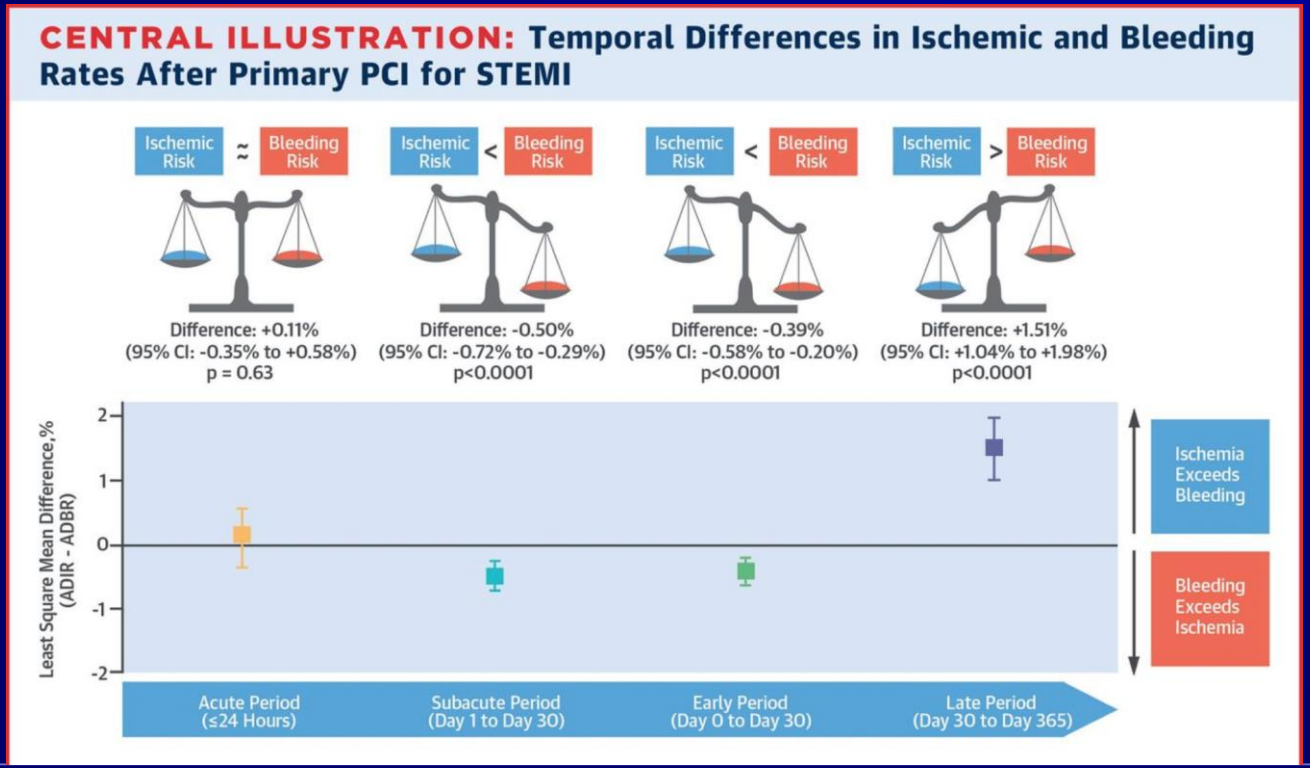
# Disclosures

- No relationships with industry as of March 2018

# Temporal pattern in ischemia & bleeding

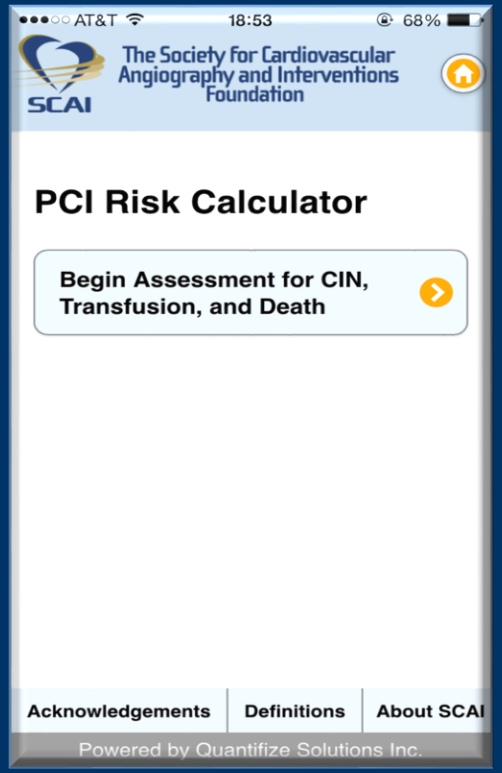
***N=3602 pts in HORIZON-MI***



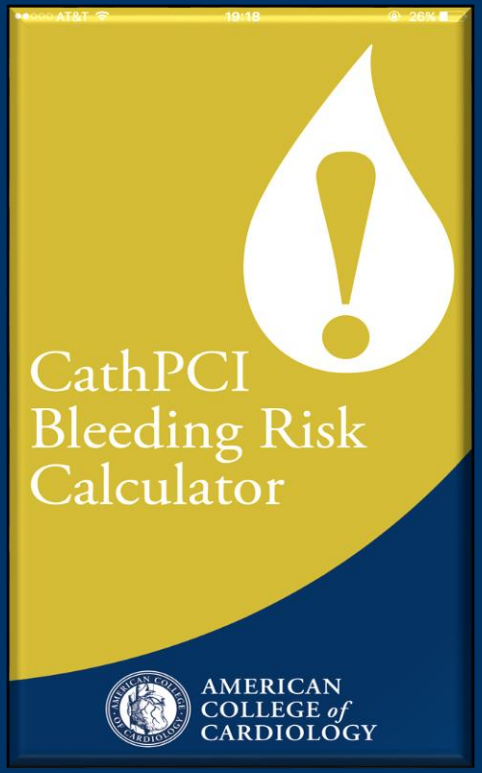



Giustino G, et. al. *JACC* 2017

# Risk calculators for procedural risk



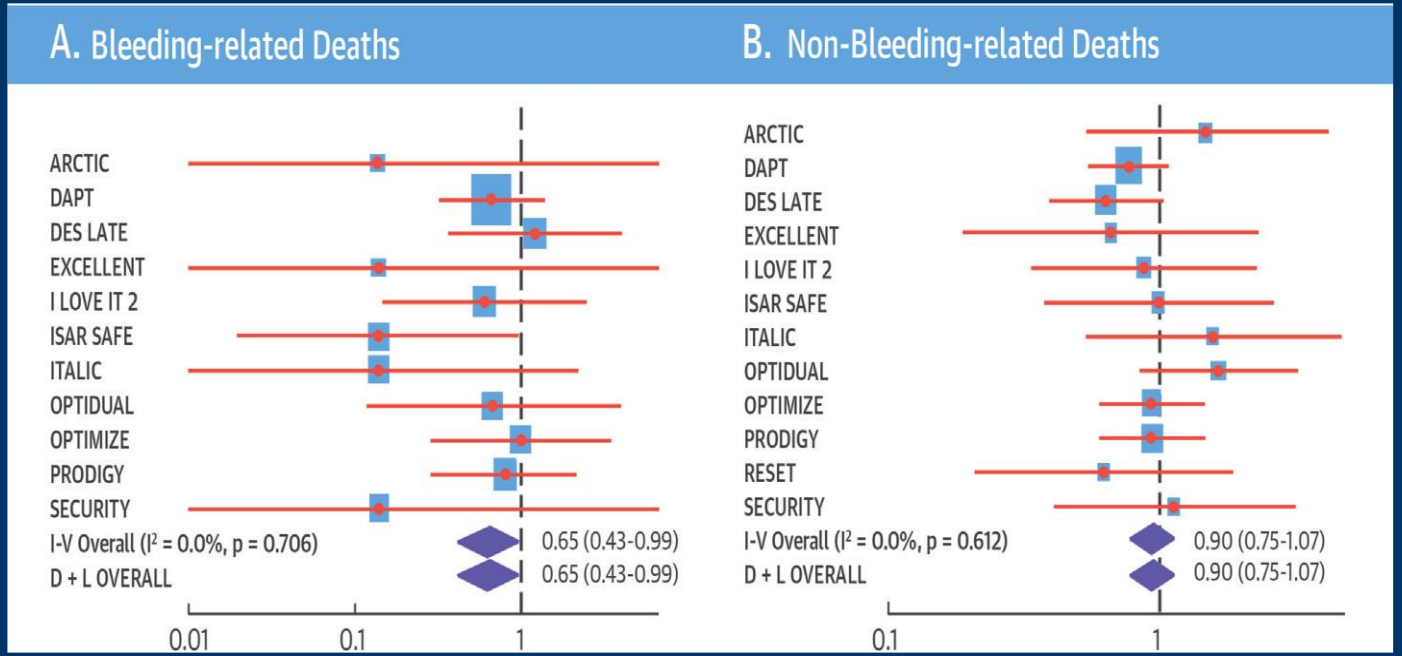




# Prolonged dual antiplatelet therapy and mortality

*N = 6 trials; 11,473 pts*

***SHORTER duration of treatment with aspirin and clopidogrel associated with fewer bleeding related deaths***



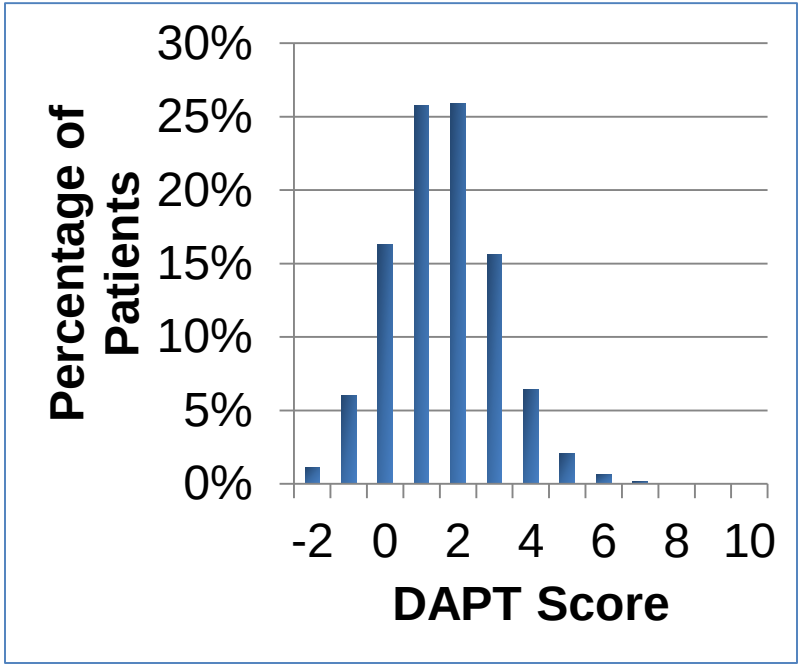



Palmerini T, et. al. *JACC* 2017

# The DAPT Score

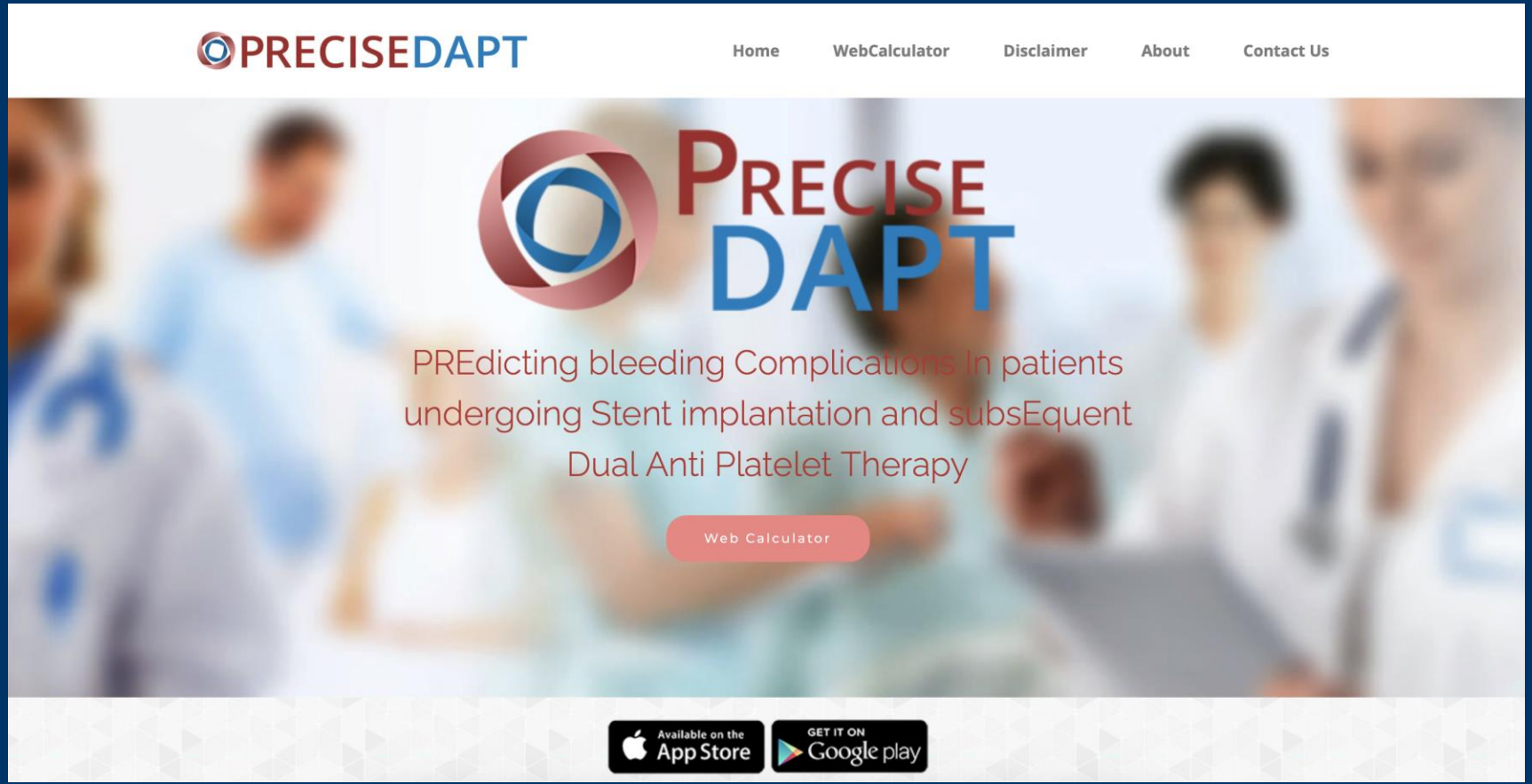
| Variable | Points |
|---|---|
| **Patient Characteristic** | |
| Age | |
| ≥ 75 | -2 |
| 65 - <75 | -1 |
| < 65 | 0 |
| Diabetes Mellitus | 1 |
| Current Cigarette Smoker | 1 |
| Prior PCI or Prior MI | 1 |
| CHF or LVEF < 30% | 2 |
| **Index Procedure Characteristic** | |
| MI at Presentation | 1 |
| Vein Graft PCI | 2 |
| Stent Diameter < 3mm | 1 |

**Distribution of DAPT Scores among all randomized subjects in the DAPT Study**




*The ischemia model C-statistic: 0.70 in DAPT Study; 0.64 in PROTECT
**The bleeding model C-statistic: 0.68 in DAPT Study; 0.64 in PROTECT

*Yeh R, JAMA 2016*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# Coronary Thrombosis and Major Bleeding After PCI With Drug-Eluting Stents

## Risk Scores From PARIS

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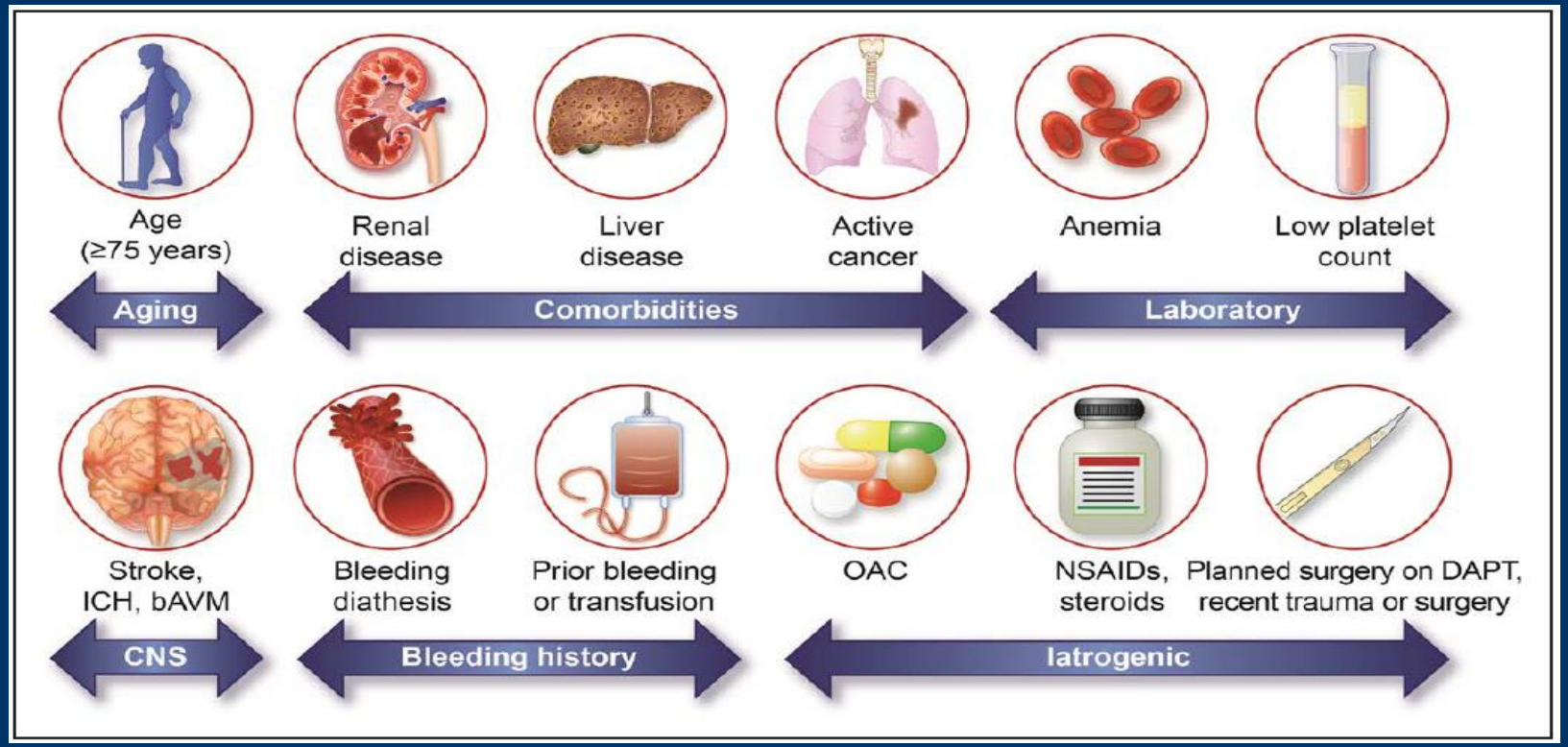
# Defining patients at high risk for bleeding with DAPT
## *The HBR ARC Criteria*






Urban P, et. al. *Circulation* 2019

# The HBR ARC Model for Bleeding and MI/ST (N=6641 HBR pts)

| Predictor | Bleeding | MI/ST |
|---|---|---|
| Anemia | √ | √ |
| Renal insufficiency | √ | √ |
| Current smoking | √ | √ |
| Complex PCI | √ | √ |
| 65 yrsAge ≥ | √ | |
| COPD | √ | |
| Cancer/Liver Dz/Surgery | √ | |
| Planned surgery | √ | |
| Prior MI | | √ |
| Diabetes Mellitus | | √ |
| STEMI or NSTEMI | | √ |
| BMS | | √ |



C-statistic = 0.68 dev; 0.74 val

Urban P, et. al. *JAMA Cardiol* 2021

# Conclusions: Balancing ischemia & Bleeding

- The balance of ischemia and bleeding starts BEFORE PCI
- At each step of the patient pathway, there are options to maximize benefit and minimize harm
- Assess for HBR characteristics, use best practices for PCI (radial access, IC imaging), and consider post-PCI APT strategies like P2Y12 monotherapy

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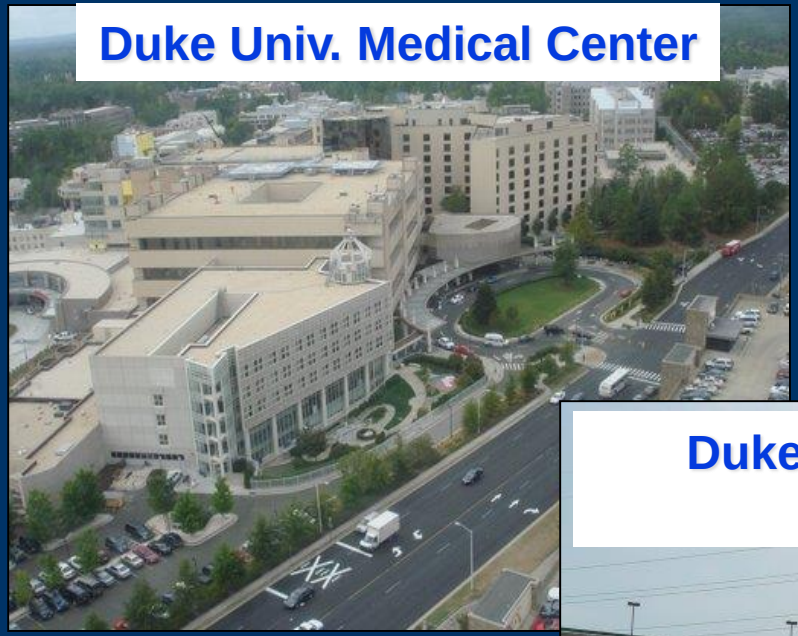

# Thank you.

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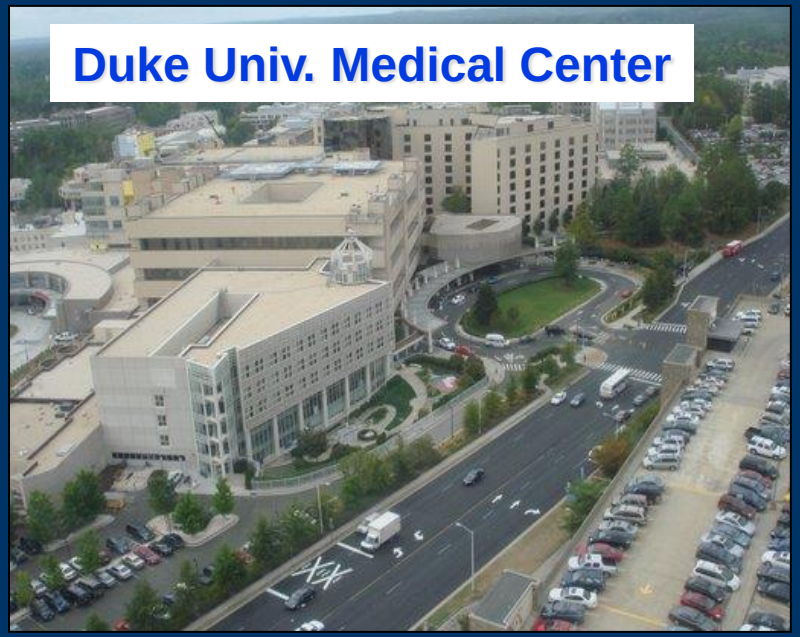
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# Thank you.


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