

Thoughts on the Future of Refractive Cataract Surgery

Richard L. Lindstrom, MD
Founder and Attending Surgeon: Minnesota Eye Consultants,
Adjunct Professor Emeritus: University of Minnesota, Visiting
Professor: Gavin Herbert Eye Institute

Financial Disclosures

AcuFocus

Alcon

Bausch + Lomb

ForSight Vision6

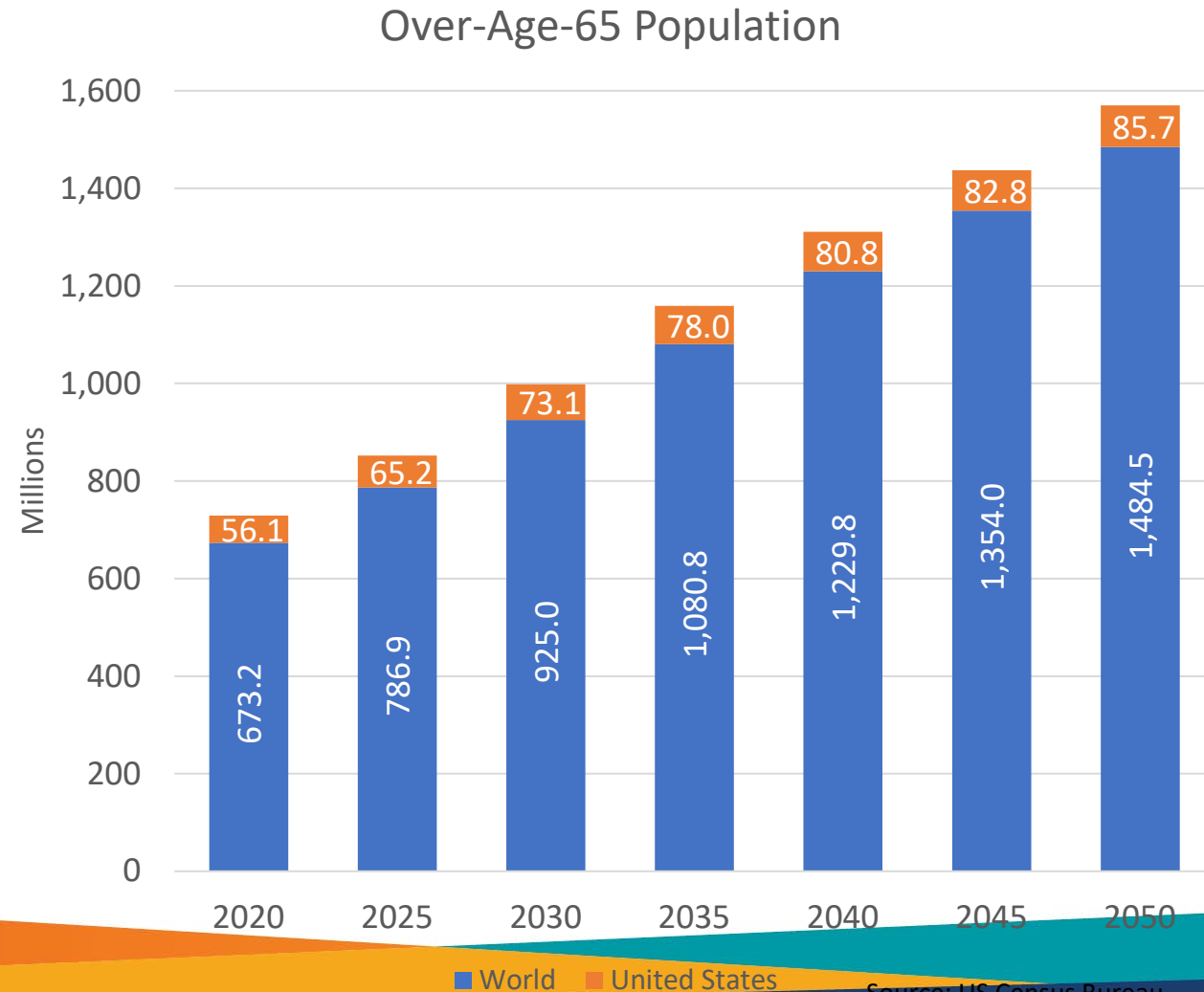
J&J Vision

Zeiss

Products, devices, and drugs discussed may not be FDA approved, and off-label use of FDA-approved devices and drugs may be discussed. Credit to David Harmon and Market Scope for data and assistance with lecture development.

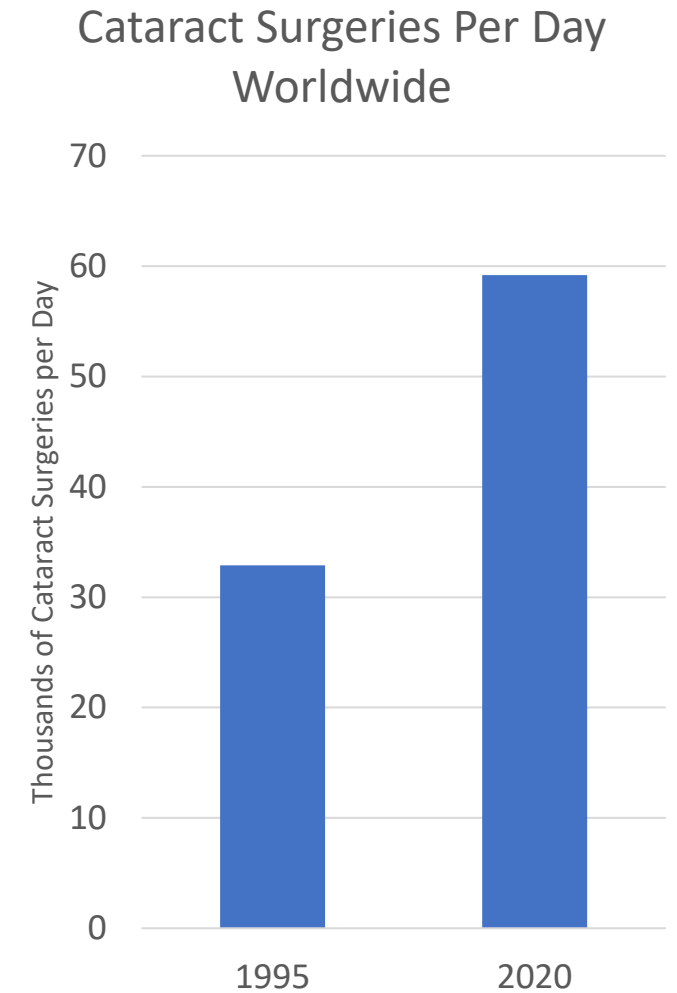
There is a Rapid Growth in the US and Global Over-Age-65 Cataract-Prone Population

- Over-Age-65 Growth is faster than Total Population Growth
 - Global Population Growth: 0.8% CGR
 - OUS Over-Age-65 Growth: 2.7% CGR
 - US Over-Age-65 Growth: 1.4% CGR
 - Increased Life Expectancy
 - Lower Birth Rates



Cataract Surgery Has Restored Vision for 300 Million Globally in Past 25 Years. “A Modern Day Miracle” !!

- >500M Cataract and RLE Procedures (300M Patients) Performed Worldwide Since 1995
- Roughly 130M People Living Today are Benefiting from IOL Surgery
- >60 Cataract Surgeries per Day Worldwide
 - >12K per Day in the USA



Mega Trends Behind Growth Rates

- Increasingly Active Elderly Population
 - Extended Careers Beyond Age 65
 - Growing Affluence
 - Changing Attitudes and Aspirations
 - Better Vision Required
- Improving Refractive Cataract Surgery Success :
 - Better Outcomes &...Higher Expectations
 - RESULT: EARLIER CATARACT SURGERY!



Steady Stream of New Premium IOLs: Better Choices with Better Outcomes!

- EDOF
- Trifocal
- EDOF/MF Hybrid
- Post-op Adjustable
- Shape Changing Accommodating



RxSight Post-Op Light Adjustable
IOL

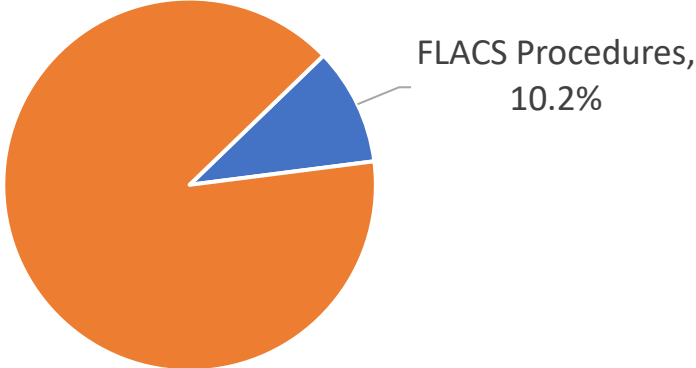


Lens Gen Juvene and Foresight#6
Opira

Femtosecond Laser Cataract Surgery: First Step Toward Collaborative Robots!

- US FLACS Procedures 10.2%
- 34.5% of Doctors Offer FLACS Laser
- 3.9% Plan to Offer in Next 12 Months
- 49.7% Do Not Plan to Offer

Q2-2020 US Cataract Procedures



■ Offer today ■ Plan to offer in the next 12 months ■ Undecided ■ Do not plan to offer

Source: Market Scope Q2-2020 Survey of US Cataract Surgeons

Growing Interest in ISBCS: The Future!

- Immediate Same Day Bilateral Cataract Surgery is Gaining Interest
- 7.8% Offering Today and 1.6% Planning to Offer
- Negative: Reimbursement Challenges
- Negative: Loss of Second Eye Refractive Adjustment Option. Mitigated by LAL



Source: Market Scope Q2-2020 Survey of US Cataract Surgeons

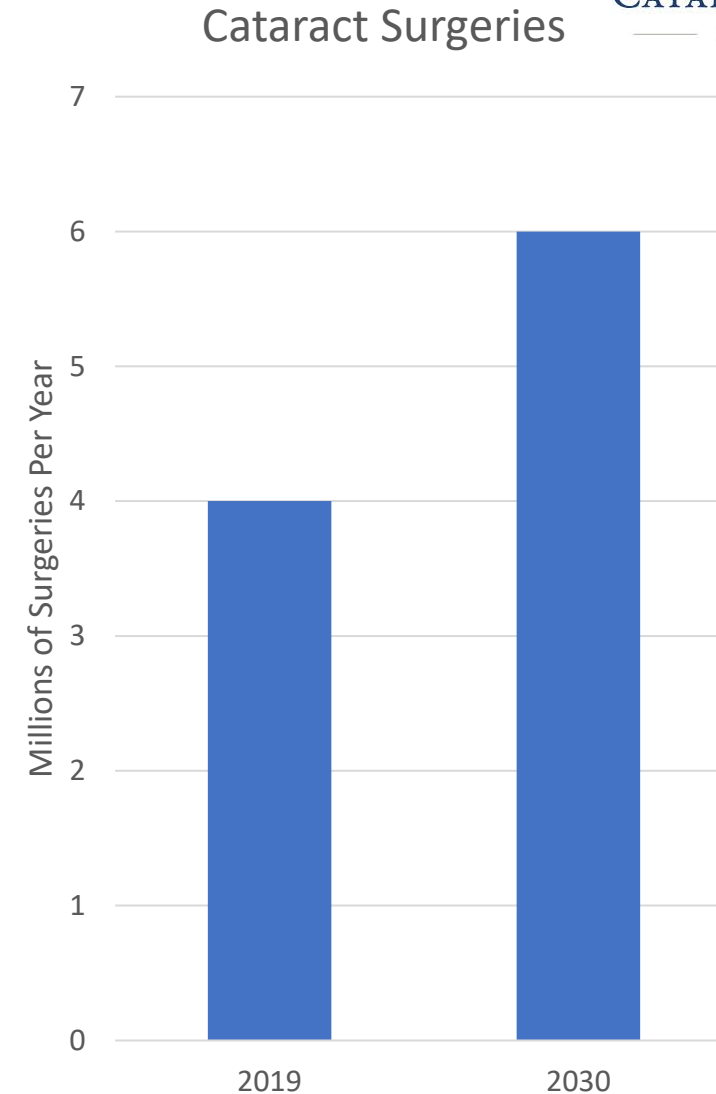
Advanced Diagnostics Lead to Improved Post-Op Vision

- IOLMaster 700 Biometer
- ORA Intraoperative Aberrometer
- Integrated Microscope/Diagnostics
- Integrated Femtosecond Laser /Robotics and Diagnostics



A Few Projections for 2035

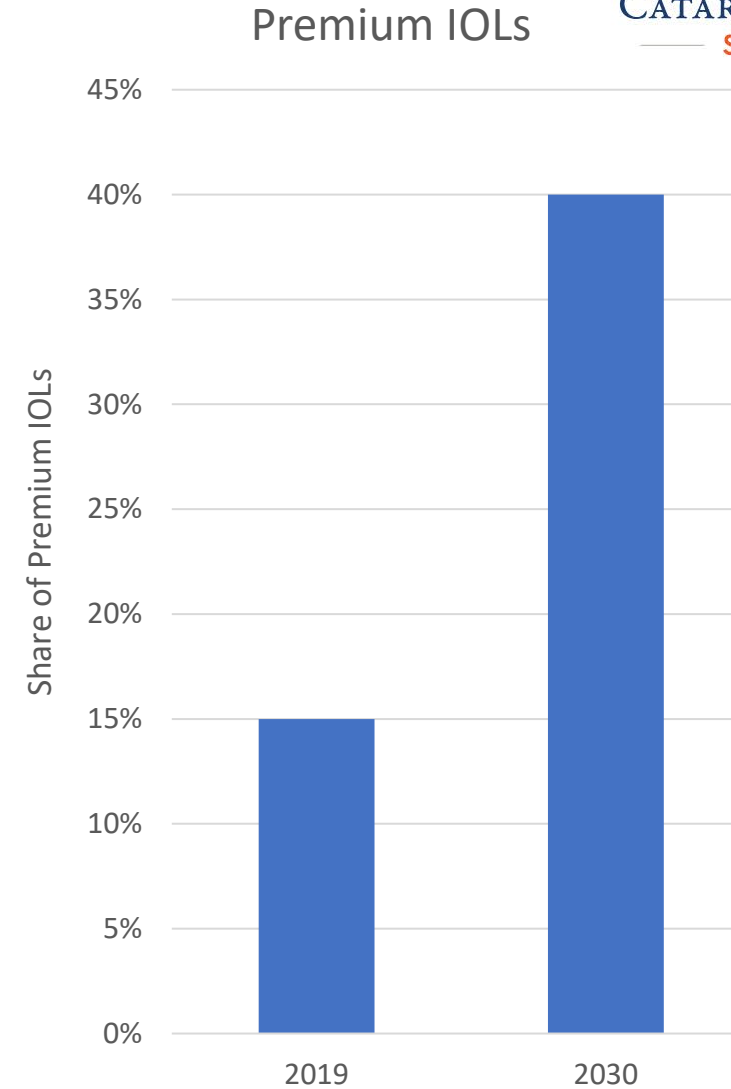
- 6M US Cataract Surgeries in 2035
 - Compared with 4M in 2024
 - 30.5% Over-Age-65 Population Growth
 - 15% Growth in Cataract Surgery in Those Over 65
- 9000 Cataract Surgeons
 - 1500 LESS Surgeons Than Today
- Average Volume Per Surgeon: 650 Cases Per Year Per Surgeon
 - Up From Roughly 450 Cases Per Year Per Surgeon Today
- Mean Age of Cataract Surgery Patients: 65
 - Down 8 years from Age 73 Today



Source: Richard Lindstrom, MD, Projections

My Projections for 2035

- Monofocal IOLs: 60%; Advanced Technology IOLs: 40%.
- The Top-of-the-Line Premium IOL in 2035 Will be:
 - An Adjustable EDOF/Multifocal/Accommodating IOL
 - With Reduced PCO
 - In an Automated Single-Use Preloaded Injector

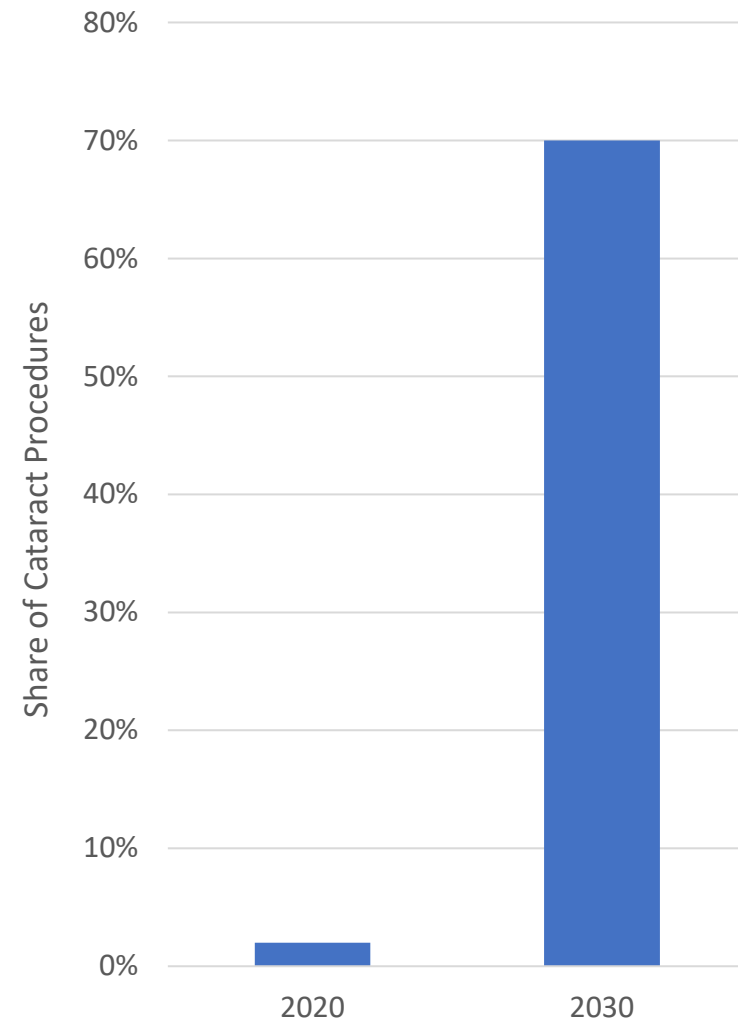


Source: Richard Lindstrom, MD, Projections

My Projections for 2035

Immediate Same Day Sequential Bilateral Cataract Surgery will
Grow: 50%

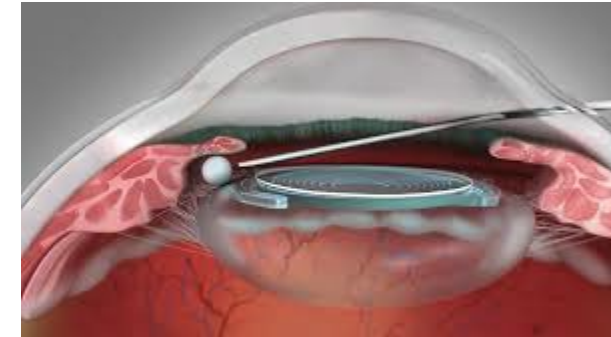
- Improved Reimbursement: Alternative Payment Methods
- Practice Efficiency Encourage Less Post Op Visits
- Post-Op Adjustable Lenses Reduce Refractive Miss Risk
- Surgery Suite and Office Practice Efficiency is Required to Meet the Demand



Source: Richard Lindstrom, MD, Projections

My Projections for 2035

- “No Post Op Eyedrops, No IV, Topical Anesthesia ” Cataract Surgery will Dominate: 90%
 - New Pharmaceuticals will Gain Regulatory Approval.
 - Compounded Eyedrop Reducing Pharmaceuticals will Grow in Market Share
- Reduced Risk of Noncompliance, Improved Results, Convenience
- Reduced Patient Out-of-Pocket Costs, A Patient Driven Preference



EyePoint Dexycu Injection

My Projections for 2030

- PhacoEmulsification(PE) ... will Evolve to PhacoAspiration (PA) at Physiologic IOP's (PPE and PPA)
 - FLACS Evolves to Collaborative Robot Assisted Cataract Surgery : Robot Assisted PPE and PPA
 - Vacuum Only-Based Lens Removal with simplified inexpensive devices: MiCor

Zeiss MiLoop

Source: Richard Lindstrom, MD, Projections

My Projections for 2035

- Reimbursement Pressures Continue
 - Surgeon Fee's continue to Drift Down: \$400
 - ASC Facility Fee's continue to Drift Up: \$1,400

US Cataract Surgeon Medicare
Reimbursement Per Eye



Source: Richard Lindstrom, MD, Projections

Conclusions:

- The Demand for Cataract Surgery Will Continue to Climb
- Cataract Surgery Has Restored Vision for over 300M Since 1995: A Modern Day Miracle!!
- Lifestyle Changes will Drive Increased Demand for Advanced Technology IOL's
- New IOLs, Diagnostic Equipment, and Surgical Technology will Enable Ever Better Results
- We Will Need Improved Surgeon, Surgical Suite and Office Efficiency to Meet the Demand
 - Immediate Same Day Sequential Bilateral Cataract Surgery
 - ASC/Office-Based Cataract Surgery with Less Post Op Visits (TeleHealth)
- The Next Decade Will Bring:
 - More Surgical Cases per Cataract Surgeon (650 per year per surgeon on average)
 - More Premium IOLs (40%), More Cash Pay (Patient Shared Responsibility)
 - Less Reimbursement per Standard Case for the Surgeon (\$400), More for the Facility (\$1400). Ophthalmology's Best Economic Opportunity: REFRACTIVE CARARACT SURGERY