Integrated Models of Care in Vision

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Paul Sternberg, Jr, MD
Director, Vanderbilt Eye Institute
George W. Hale Professor and Chair, Department of Ophthalmology and Visual Sciences
Chief Medical Officer, Vanderbilt Medical Group
Associate Dean for Clinical Affairs, Vanderbilt School of Medicine
Assistant Vice Chancellor for Adult Health Affairs
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What Factors Influence Increasing Demand for Eye Care Services?

- Aging of population
- Chronic diseases
- Immigration/underserved
- New technology
- Desirability of what we have to offer
Demand

- 20% increase in Medicare beneficiaries by 2010 and a doubling by 2040
- Between 1991 and 1998 the number of Medicare beneficiaries increased 7%, while the incidence of visits for retinal disease and glaucoma related diagnoses increased dramatically (24%)
- NEI announced 11/12 that DR had increased 40% in ten years to over 11 million patients
- By 2015 coverage will have been expanded to 22 million Medicaid patients and 10 million in state exchanges
  - 20 million are persons of color with higher rates of DR and COAG
What Conditions?

- Basic vision care (uncorrected refractive error)
- Cataracts
- Glaucoma
- Age-related macular degeneration (AMD)
- Diabetic retinopathy
How Have We Handled Increased Demand to This Point?

- Increased productivity/better efficiency
- New technology
Increased Productivity: Office Visits

- More patients seen per clinic session
  - Technology
    - Autorefractors
    - Optical coherence tomography
    - Computerized visual field testing
  - Team-based care
    - Allied health personnel (technicians, orthoptists), nurses, physician assistants, optometrists
Encounters per FTE MD with and without OD's

30% increase in throughput by adding OD's
Increased Productivity: Procedures

- Moved to office and ambulatory surgical center
- More efficiency
  - Marked reduction in time for cases
    - Cataract surgery
    - Retinal surgery
  - Reduced complication/reoperation rate
Increased Productivity: Technology

- Teleimaging already in place (e.g. diabetes, ROP)
- Development of home monitoring
  - Images of retina (e.g. diabetes, AMD)
  - Measurement of IOP for glaucoma
  - Perimetry for a variety of conditions (e.g. AMD)
- Development of self-refraction technology
Is Supply an Issue?

- AAO/AMA data suggest 18,200 US ophthalmologists
  - 93% members of AAO
  - Stable ophthalmology workforce by AAO membership data
- Adequate number to handle medical and surgical needs, even with increased demand
  - While cataract operations per operative day have increased dramatically, current trends (and examples) indicate that surgeons can double that number
  - Diabetic advanced care can be reduced with better early detection and management
  - AMD injection demand will be mediated by sustained release delivery methods and longer-acting agents
Is Access An Issue?

- Current oversupply of optometrists estimated at 12,672 FTEs
- 7 new optometry schools added, with 1,127 graduates in 1997 to over 1,800 at full enrollment now
- More challenges exist in obtaining routine eye care: uncorrected refractive error is a major cause of decreased vision everywhere in the US
How Will Integrated Models of Eye Care Be Helpful?

- From my perspective as ophthalmologist and AAO
- From my perspective as director of a regional eye institute
- From my perspective as Chief Medical Officer of a large regional medical center
With a stable or declining workforce, must continue to increase productivity

Demand for surgery can be met by projected workforce

Must continue to develop more efficient models of care

Eye care, like healthcare in general, has become team-based rather than individual provider-based

- Increase in ophthalmologists-employing ODs
- Increase in staff/ophthalmologist
- Decrease in solo practice
Factors influencing productivity

- The percentage of ophthalmologists employing ODs increased from 28% in 1993 to 50% in 2013
- A 14.5% increase in staff/ophthalmologist
- A decrease in solo practice from 54% in 1987 to 20% in 2014
Director of Vanderbilt Eye Institute

- Evolution: from 8 subspecialists to 32 faculty of ODs, comprehensive ophthalmologists, and subspecialists
- Evolution: from 35,000 visits to 160,000 visits/ year
- Evolution: 1 office on campus to 17 locations in region
  - Full service (campus) – 1
  - General eye care with limited subspecialists – 6
  - Satellites providing specialty services to other primary eye care providers (ODs and MDs)– 10
VEI Integrated Model

- ODs and MDs, working together, but employed by ophthalmology department
- All providers have faculty appointments and potential for promotion based on standard School of Medicine criteria
- Efficient and respectful bidirectional transfer of care
- Ophthalmology Dept, so we train ophthalmologists only
Chief Medical Officer

- Over past 6 years, evolution from campus-based practice of employed physicians
  - To middle TN practice of employed physicians
  - To state-wide network of affiliated hospitals and practices
  - To Southeastern US network of affiliated hospitals and practices
Vanderbilt Affiliates and VHAN state-wide network
How Will Regional Networks Affect Models of Care?

- Eye care providers in region will work together to create integrated eye care within Clinically Integrated Network
- Will allow true population health for eye care
- Even more effective by partnering with large CIN of primary care providers
How Will Regional Networks Affect Models of Care?

- Primary eye care providers interconnected with evidence-based models, quality metrics, utilization standards
- Partnered with state-of-the-art technology to provide access in more remote regions via telemedicine & other eHealth modalities
How Will Regional Networks Affect Models of Care?

- Clinically integrated linkage to upstream eye care – distance of travel dependent on severity of condition
  - Secondary (referrals from OD to comprehensive ophthalmologist) – cataract surgery
  - Tertiary (referral from comprehensive ophthalmologist to specialist ophthalmologist) – retinal surgery, corneal transplant
  - Quaternary (referral from specialist to superspecialist) – ocular oncology
What about ‘Independent Practice’?

- AAO data shows the majority of ophthalmologists are not formally in CIN’s
  - Little ‘financial halo effect’ on integrated systems
  - Little inpatient or operative presence
- Function in less formal affiliate relationship
  - Use of AAO clinical data (IRIS) registry to benchmark processes, outcomes, and resource utilization
- Expand and refine team-based eye care models
Conclusions

- Anticipate increased demand for eye care services
- Should be able to meet demand for medical and surgical services
- Growth in demand for office-based exams and testing will require continued evolution of more efficient models of care
Recommendations

- Focus for public eye health needs to be on primary eye care and disease prevention
- Integrated models of eye care offer the best public eye health solution, particularly in CIN setting
- Critical to leverage new technology