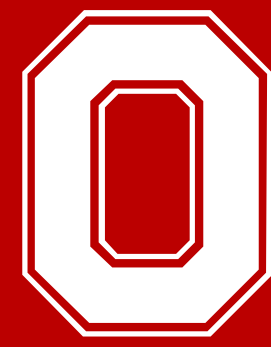


# Untangling a Complex Web: Implementation of a Multidisciplinary Comprehensive Amyloidosis Clinic

Courtney M. Campbell, MD, PhD,<sup>1</sup> Naresh Bumma, MD,<sup>2</sup> Nidhi Sharma, PhD,<sup>2</sup> Samantha LoRusso, MD,<sup>4</sup> Elyse Redder, PT, CLT-LANA,<sup>5</sup> Salem Almaani, MD,<sup>3</sup> Jason Prosek, MD,<sup>3</sup> Michelle Speiser,<sup>2</sup> Jordan Bittengle, BSN,<sup>2</sup> Katherine Pfund, BSN,<sup>2</sup> Jessica Dempsey, PharmD,<sup>2</sup> Amro Stino, MD,<sup>6</sup> Miriam Friemer, MD,<sup>4</sup> Rami Kahwash, MD,<sup>1</sup> Yvonne Efebera, MD,<sup>2</sup> Samir Parikh, MD,<sup>3</sup> and Ajay Vallakati, MBBS<sup>1</sup>

<sup>1</sup>Division of Cardiology, <sup>2</sup>Division of Hematology, <sup>3</sup>Division of Nephrology, Department of Internal Medicine; <sup>4</sup>Department of Neurology; <sup>5</sup>Department of Oncology Rehabilitation, The Ohio State University Wexner Medical Center, Columbus, Ohio; <sup>6</sup>Department of Neurology, University of Michigan



THE OHIO STATE  
UNIVERSITY

COLLEGE OF MEDICINE

## Background

- Amyloidosis is the common term for several diseases that occur when an abnormal protein deposits in tissues or organs throughout the body causing malfunction of that tissue or organ.
- Amyloid most commonly affects the heart, kidneys, nervous system, connective tissue, and digestive system.
- Patients may receive one treatment or a combination thereof, depending on the amyloid type, location and progression.
- Given the complexity of amyloidosis and multiple organ involvement, multidisciplinary care is critical for treatment and symptom management of this systemic disease.

## Methods

- At The Ohio State University’s Comprehensive Amyloidosis Clinic, we created a comprehensive multispecialty clinic that allows for a multidisciplinary approach to these challenging clinical conditions.
- Key factors to our successful clinic are multidisciplinary specialists, organized clinic structure, and research mission.
- Our core amyloidosis care team includes nurse managers, hematologists, cardiologists, neurologists, nephrologists, physical therapists, and research coordinators.
- Our clinic structure allows our patients to spend a morning with our team.
- At the end of their visit, patients leave with a comprehensive, cohesive plan.
- Our broader research mission engages specialists in basic science, translational medicine and imaging to improve our knowledge and care of amyloidosis patients.

## Results

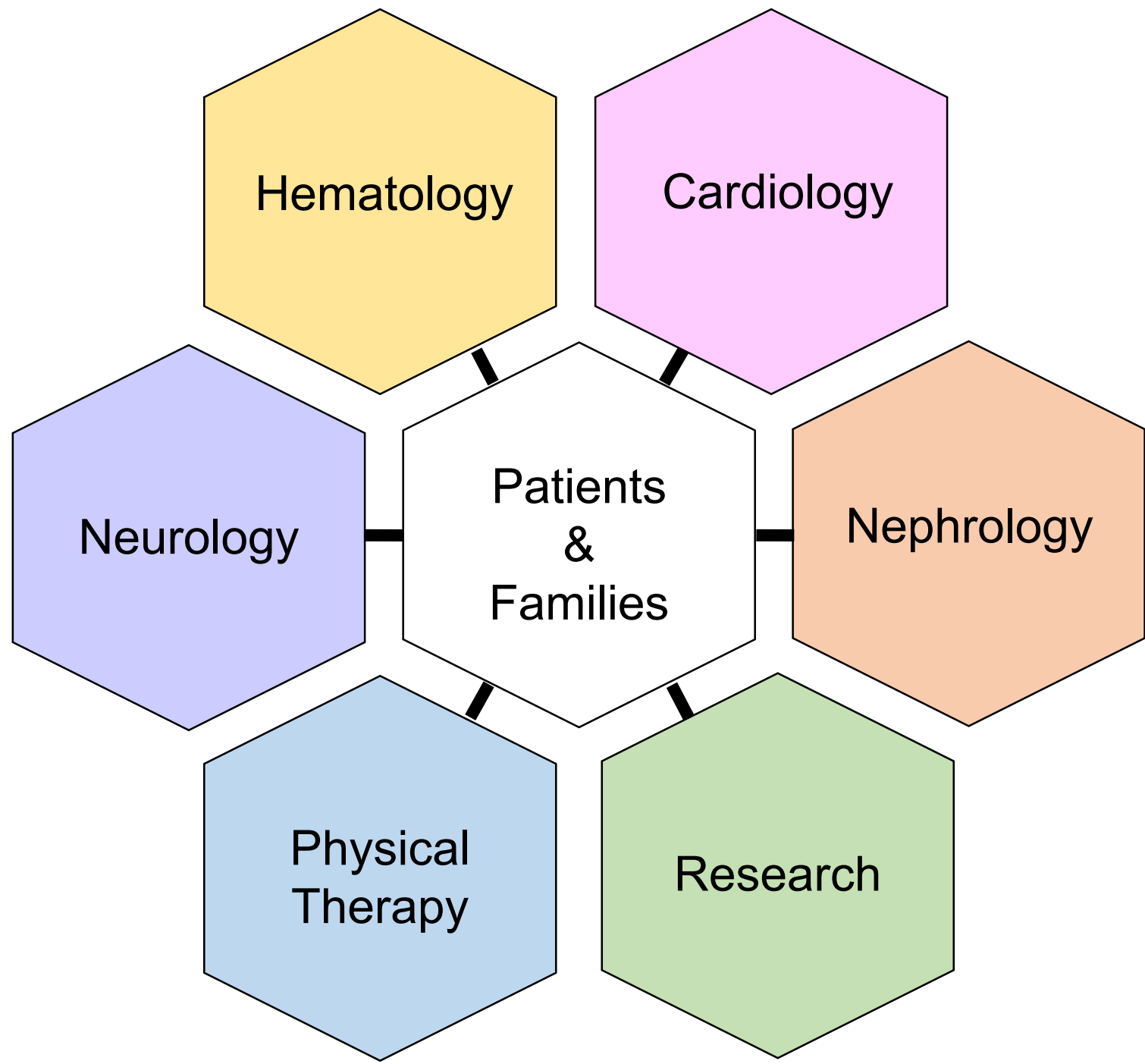


Figure 1: Organizational Structure of the Ohio State University’s Comprehensive Amyloidosis Clinic.

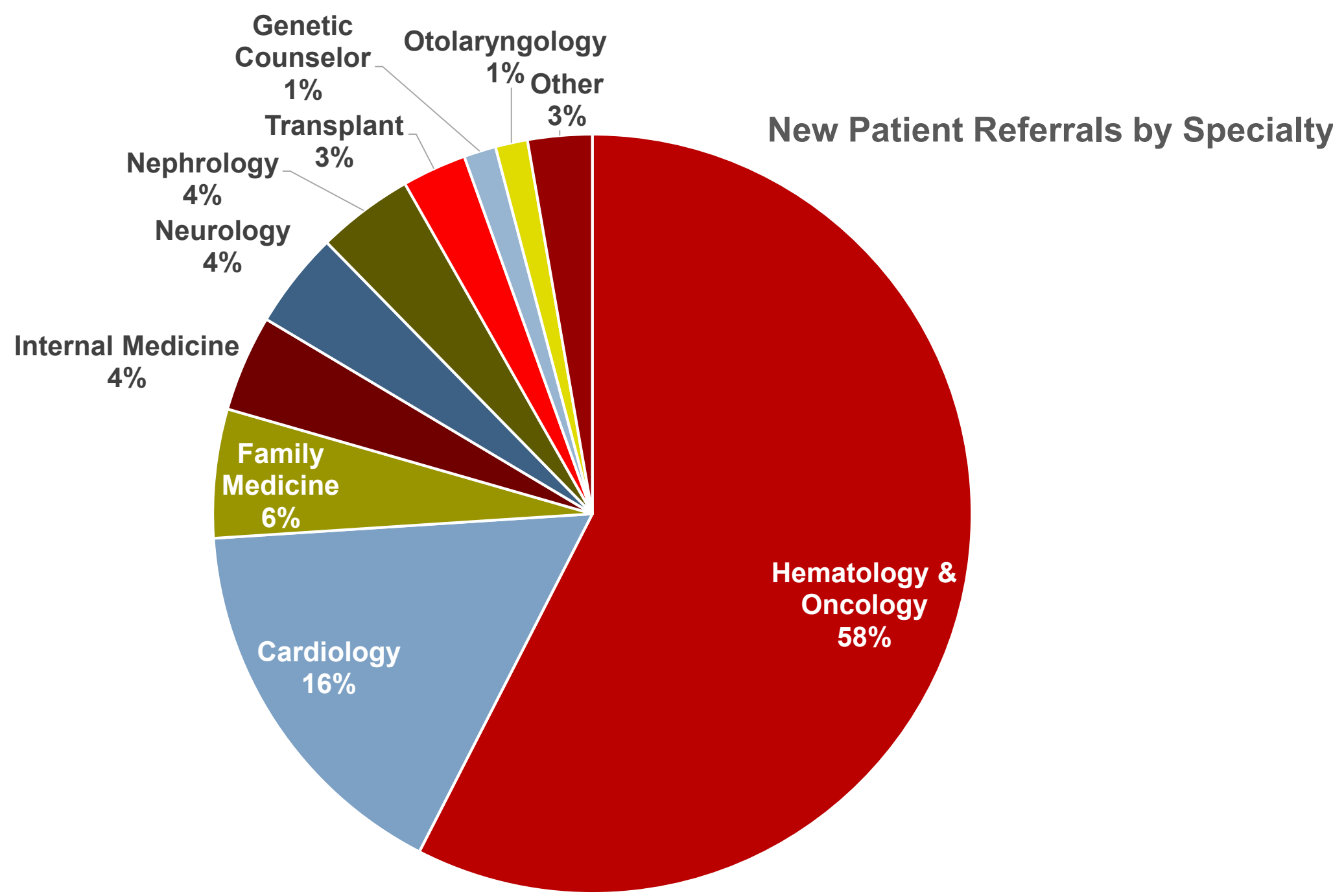


Figure 2: Source of referrals to the Ohio State University Comprehensive Amyloidosis Clinic by specialty.



Figure 3: New patients seen at the Ohio State University Comprehensive Amyloidosis Clinic (CAC) by month (gray bars) and average time between date appointment was made and the clinic visit date (red line). All referrals are reviewed by clinic staff. Depending on urgency, patients can be scheduled with Cardiology or Hematology within 1 week to complete work-up or initiate therapy - outside of a CAC clinic morning.

Time	Patient Clinic Schedule Example
8:45-9:00 am	<ul style="list-style-type: none"><li>Check-in, Rooming, Vitals, Electrocardiogram, Blood Draw</li><li>Amyloidosis Clinic Nurse assessment with history and medication updates</li></ul>
9:00-9:30 am	<ul style="list-style-type: none"><li>Cardiology Clinic Visit</li></ul>
9:30-10:00 am	<ul style="list-style-type: none"><li>Hematology Clinic Visit</li></ul>
10:00-10:30 am	<ul style="list-style-type: none"><li>Nephrology Clinic Visit</li></ul>
10:30-11:00 am	<ul style="list-style-type: none"><li>Neurology Clinic Visit</li></ul>
11:00-11:30 am	<ul style="list-style-type: none"><li>Physical Therapy Clinic Visit</li></ul>
11:30-11:45 am	<ul style="list-style-type: none"><li>Clinical Research Visit</li></ul>
11:45-12:00 pm	<ul style="list-style-type: none"><li>Review of After Visit Summary with cohesive, multidisciplinary recommendations by Amyloidosis Clinic Nurse</li><li>Schedule follow-up CAC visit for 3, 6, or 12 months and specific sub-specialty visits based on need</li></ul>

Figure 4: Example schedule for a patient during a visit to the Ohio State University Comprehensive Amyloidosis Clinic.

Room #1	Room #2	Room #3	Room #4	Room #5	Room #6
Check-in procedures including nurse assessment, EKG, and blood draw					
Cardiology	Research	Physical Therapy	Nephrology	Neurology	Hematology
Hematology	Cardiology	Research	Physical Therapy	Nephrology	Neurology
Neurology	Hematology	Cardiology	Research	Physical Therapy	Nephrology
Nephrology	Neurology	Hematology	Cardiology	Research	Physical Therapy
Physical Therapy	Nephrology	Neurology	Hematology	Cardiology	Research
Research	Physical Therapy	Nephrology	Neurology	Hematology	Cardiology
Multidisciplinary Discussion of Final Recommendations					
Check-out procedures					

Figure 5: Workflow for the Ohio State University Comprehensive Amyloidosis Clinic

## Discussion

- Our CAC results in an excellent patient experience with multidisciplinary care and research engagement.
- Since the CAC’s inception in 2017, we have seen close to 100 patients.
- With increased local and national recognition, we now have 41% of referrals originating outside of hematology and 17% of referrals from outside of our institution.
- We have improved the time to diagnosis and initiation of treatment for amyloidosis patients, reducing disease progression and organ dysfunction.
- We have increased enrollment in registries, institutional clinical trials, and national clinical trials.

## Conclusion

The development of a multidisciplinary *Comprehensive Amyloidosis Clinic* can improve patients’ outcomes through early diagnosis, comprehensive management, and knowledge about the disease through clinical care and research.

## Clinical Implementation

In caring for amyloidosis patients, a multi-specialty clinic and research program is critical to improving patient care.

## Disclosures

Courtney M. Campbell – no financial disclosures