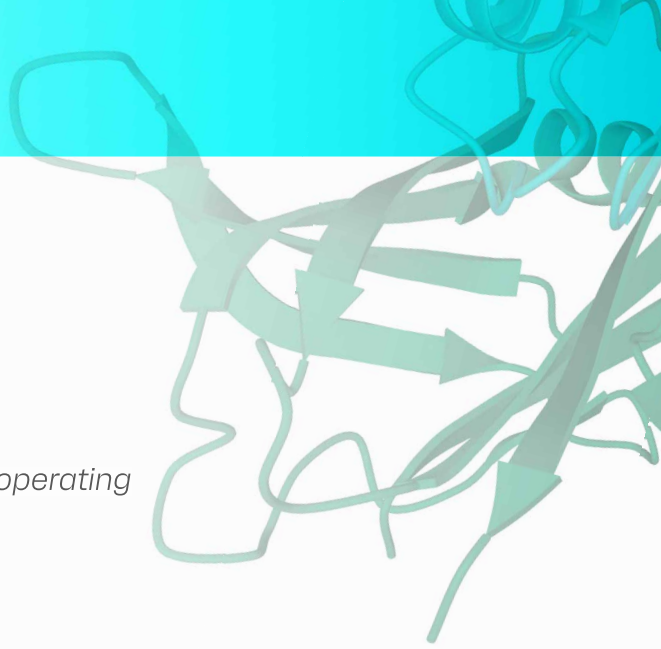

Overcoming Challenges in Establishing an Amyloidosis Center

Report of a virtual roundtable meeting on establishing and operating amyloidosis services in Asia, Africa, and the Middle East

25 March 2025

1. INTRODUCTION

Amyloidosis is a complex and heterogenous disease that requires specialized expertise for accurate diagnosis and effective management. Specialized amyloidosis centers play a crucial role in providing multidisciplinary, standardized, and comprehensive care, offering access to advanced diagnostic tools, therapies, and clinical trials.[1,2]

Although data in Asia, Africa, and the Middle East are lacking, the incidence and prevalence of light chain (AL) and transthyretin (ATTR) amyloidosis appears to be growing.[3] There is significant need for more specialized amyloidosis centers to facilitate timely access to expert care. In some regions, patients with amyloidosis are underdiagnosed due to a lack of access to diagnostic testing, whilst other patients face a time-consuming diagnostic process, moving between different specialties and enduring long waiting times before receiving a diagnosis and appropriate treatment.[3–9] Moreover, regional variations in practice and the availability of specific expertise may limit access to healthcare across these areas.[3,4,7,10] Expanding the network of specialized centers in Asia, Africa, and the Middle East is crucial to enhance patient outcomes. This virtual roundtable explored the key challenges involved in establishing and expanding amyloidosis centers in this region and solutions to overcome these barriers.

2. MEETING ORGANIZATION

On 25 March 2025, a roundtable meeting was hosted by Professor Vaishali Sanchorawala (Amyloidosis Center at Boston University, USA) and Professor Mitsuharu Ueda (Amyloidosis Center at Kumamoto University, Japan), and moderated by Chris Elmitt (UK). The meeting brought together experts from across Asia, Africa, and the Middle East to discuss the challenges involved in establishing and running a successful amyloidosis service. Twelve amyloidosis specialists, with experience or an interest in setting up an amyloidosis service, participated in the meeting.

The group represented a range of specialties and geographic regions, with participants joining virtually from China, Kazakhstan, Taiwan, the UAE, Kyrgyzstan, Indonesia, Ghana, and Jordan. A breakdown of the participants' specialties is provided in **Table 1**.

Through open discussion and polling, the group identified region-specific barriers to establishing amyloidosis services and discussed solutions to address these challenges.

Specialty	Number of participants
Cardiologist	4
Neurologist	4
Nephrologist	1
Hematologist/Oncologist	3

Table 1. Attendee breakdown by specialty

2.1 Meeting objectives

The aim of the roundtable meeting was to explore the challenges involved in establishing an amyloidosis service and discuss solutions to address them. After taking part in the roundtable, the learners should be able to:

1 Discuss region-specific challenges in amyloidosis center establishment and describe strategies to overcome them

2 Integrate specialized guidance from experts from established amyloidosis centers to have increased confidence in their mission to set up a center

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3. MEETING FINDINGS

3.1 Region-specific challenges in setting up an amyloidosis center

Session objective: Discuss the unique regional challenges that impact establishment and operation of amyloidosis centers across Asia, Africa, and the Middle East and propose solutions to overcome these barriers.

The discussion on establishing and operating amyloidosis centers highlighted several key challenges faced by healthcare teams and services. Audience polling (**Figure 1**) and expert insights revealed multiple obstacles to center development. Open discussions further reinforced the importance of financial resources and institutional buy-in. Other challenges identified include limited availability of diagnostic tools and treatments, patient access and referral barriers, a shortage of experts with amyloidosis expertise, and limited multidisciplinary collaboration.

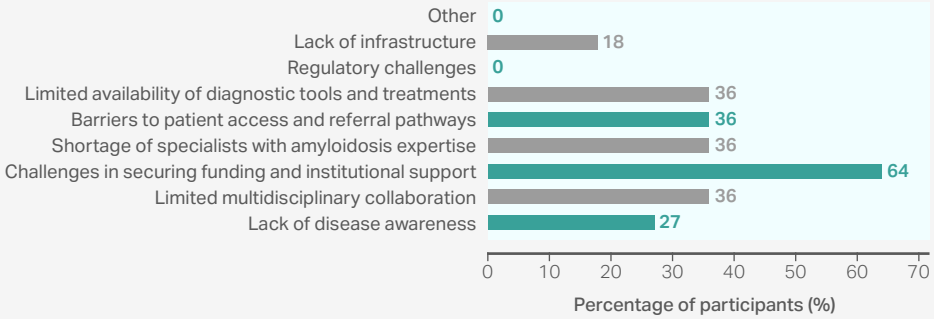

Figure 1. Participant responses to the poll question 'What are the biggest challenges you face in establishing an amyloidosis center in your region? (Select your top two)'.

The following challenges were identified by the group:

1. **Lack of institutional support and funding**

   Securing funding and institutional support emerged as the most significant barrier, with 64% of poll respondents identifying it as a major challenge. Open discussions further reinforced the importance of financial resources and institutional buy-in, with Professor Sanchorawala highlighting that "institutional support and institutional buy in is a major challenge for any individual or any team to really set up a center".

2. **Fragmented care and barriers to multidisciplinary collaboration**

   Drawing on his experience at Kumamoto University in Japan, Professor Ueda highlighted the importance of a multidisciplinary approach for achieving optimal patient outcomes, stating that "since the symptoms of this condition affect not only the nervous system but also other organs including heart, gastrointestinal tract, kidneys, and eyes, [a] multidisciplinary approach is essential to provide optimal care". However, over a third (36%) of respondents who answered the poll indicated that limited multidisciplinary collaboration was a barrier to establishing an amyloidosis service. This was further reinforced by a cardiologist from Kyrgyzstan during the open discussion, who stated: "We don't have a specific multidisciplinary center for treatment and diagnosis [of] amyloidosis. We have a separate center [for] neurology, cardiology, and hematology." In other regions, despite the presence of specialist centers for other rare neurological diseases, there is a lack of specialist neurologists with specific expertise in amyloidosis. An expert from Kazakhstan mentioned that "[for] amyloid diseases [we have] only cardiologists, nephrologists, and [we] don't use neurologists". These insights indicate that patients in some regions may receive fragmented care, moving between different specialties and services in the absence of a dedicated multidisciplinary center. Moreover, patients may not have access to the full range of disciplines required to effectively diagnose and manage amyloidosis.

3. **Limited diagnostic capabilities for rare diseases**

   In some regions, healthcare providers may have limited diagnostic capacity for rare diseases such as amyloidosis. A neurologist from Kazakhstan highlighted that: "In my country, in Kazakhstan, we have some problems about these diagnostic[s] not only [for] amyloidosis diagnosis, [but for] some other orphan diseases." The poll indicated that experts from other regions shared this challenge, with 36% of participants responding that limited availability of diagnostic tools and treatments represents a barrier to setting up a service. In West Africa, there is a complete lack of infrastructure for diagnosing amyloidosis, with an expert from this region stating that: "No diagnosis [is] possible currently in West Africa, [there is] the ability to have a suspicion of amyloidosis, but not then to be able to actually go ahead and diagnose".

4. **Difficulty in establishing referral networks**

   In Taiwan, it is difficult to establish a referral center and or a structured referral network because there is no strong institutional mechanism to guide patients toward specialized centers. A cardiologist from this region noted: "It's very hard to ask hospitals to refer patients to only [one] center or some medical centers". They mentioned that this is largely due to Taiwan's National Health Insurance system, which covers all medical costs and does not restrict where prescriptions come from as long as they meet the criteria. This means that patients may not benefit from expert multidisciplinary care for amyloidosis.

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3.2 Overcoming challenges in center establishment

The group discussed various strategies for overcoming the identified challenges to establish an amyloidosis center. Professor Vaishali Sanchorawala outlined a three-step approach to successfully developing an amyloidosis center (**Figure 2**).

Figure 2. Three-step approach to amyloidosis center establishment.

Steps for establishing an amyloidosis center

1. Build a multidisciplinary team:

A fundamental step for establishment of an amyloidosis center is the formation of a multidisciplinary team that includes hematologists, neurologists, cardiologists, and other specialists committed to amyloidosis as a career focus. Multidisciplinary collaboration enhances patient care and strengthens institutional support by ensuring a comprehensive, specialized approach to diagnosis and treatment.

"It is important that […] we develop a multidisciplinary team with identifying multidisciplinary stakeholders, including hematologists, neurologists, [and] cardiologists who are interested in this disease and making this disease […] their career path and career goal." Professor Vaishali Sanchorawala

2. Define clear program goals

Developing a clear mission and vision for the amyloidosis center is a crucial step in establishing an amyloidosis service. This step lays the foundation for the center's direction and ensures all stakeholders align on the priorities of the program. Clear goals also help guide decision-making and attract funding and institutional support. Having a clear business plan is key to gaining institutional backing and to ensure accessibility and affordability of care for patients.

"The second step should be to develop overarching program goals with mission and vision for the amyloidosis program." Professor Vaishali Sanchorawala

3. Secure institutional backing and funding

Securing institutional buy-in is often the most challenging step for rare diseases like amyloidosis. However, demonstrating the financial and clinical benefits of the center can encourage institutional support. One way to do this is to establish a multidisciplinary service that employs a "one-stop" model to consult with patients, where patients stay in one examination room and specialists come to them throughout the day as outpatients. This approach can improve efficiency, save resources, enhance the patient experience, and streamline care.

"Institutional buy-in for a rare disease is very difficult. However, what we have created is a multidisciplinary team where patients from all over the country are seen by all the specialists in two days as an outpatient visit." Professor Vaishali Sanchorawala

In regions with fee-for-service healthcare systems, a key strategy to secure buy-in is to show how the center generates revenue for multiple specialties. For a disease with multiorgan involvement like amyloidosis, one patient could be seen by multiple services in addition to hematology and cardiology, including laboratory medicine, pathology, nuclear medicine, and radiology.

Additional strategies for amyloidosis center establishment

Several additional strategies were discussed to address the challenges identified by attendees. To secure both initial and sustained financial support, those working to establish an amyloidosis center can explore a range of funding sources. These include government health ministries, disease-specific networks, national and international alliances, research grants, and patient advocacy organizations, all of which can provide critical financial backing for programs focused on amyloidosis care. For example, some health ministries have public health initiatives focused on improving access to specialized care for rare diseases. Healthcare providers can frame their amyloidosis services to address a public healthcare gap and improve patient outcomes. Other strategies include collaboration with existing research institutions and hospitals to share resources and opportunities, and reduce the initial financial burden on new centers.

"I think there are disease networks, patient advocacy groups, some national alliances or networks that also can provide funding opportunities and grant proposals that they may support amyloidosis." Professor Vaishali Sanchorawala

Institutional support for clinical research is also important for providing comprehensive care for amyloidosis patients. This includes establishing clinical trials; a biobank for storing tissues, blood, and specimens; and a clinical database for tracking patient information. Demonstrating to hospitals that clinical trials can generate revenue can further secure institutional support.

SESSION CONCLUSIONS

Key challenges to establishing amyloidosis centers include **limited institutional support**, **fragmented care due to a lack of multidisciplinary collaboration**, **restricted diagnostic capabilities**, and **difficulties in setting up referral networks**. Overcoming these barriers requires strong institutional backing, dedicated multidisciplinary teams, clear program goals, and sustainable funding models. Collaborative care models, strategic partnerships, and alignment with public health priorities can further support the successful development of specialized amyloidosis services.

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4. BARRIERS TO DIAGNOSIS AND MANAGEMENT OF AMYLOIDOSIS

4.1 Regional barriers to diagnosis and management

Session objective: Explore barriers to best practices in amyloidosis diagnosis and treatment in the context of establishing or operating an amyloidosis center

This session highlighted that amyloidosis remains a challenging condition to diagnose and manage, particularly in regions with limited healthcare resources. Experts from various countries highlighted significant barriers, including financial constraints, lack of diagnostic tools, inadequate education, and limited access to treatment. This section outlines these key challenges and potential solutions to improve diagnosis and management for emerging centers.

Lack of funding for diagnostic tests and inability to differentiate between types of amyloidosis

One of the key challenges highlighted in the discussion was the lack of financial resources and access to essential diagnostic tests for amyloidosis. In some regions, basic techniques like immunohistochemistry (IHC) are often unavailable, while more advanced methods such as mass spectrometry remain out of reach for many centers due to cost and infrastructure limitations. Some centers do not have the resources to carry out more invasive biopsies (e.g., endomyocardial biopsies).

"The problem is once we need to do biopsy, endomyocardial biopsy, usually it's very difficult because only [a] few centers can perform endomyocardial biopsy. And then, especially if we talk about mass spectrometry or immunohistochemistry, it is very difficult." Cardiologist from Indonesia

"First of all, money is still a problem." Cardiologist from Taiwan

Accurate amyloid typing is essential for proper diagnosis and treatment, especially for healthcare professionals in regions where secondary amyloidosis (AA) is more prevalent. However, this lack of access to diagnostic tools such as mass spectrometry and IHC means that some centers lack the capability to differentiate between amyloidosis subtypes.

"We can differentiate between ATTR and AL type[s]. But at the end of the day, once it is already ATTR, we cannot define what kind of ATTR, what typing of the ATTR" Cardiologist from Indonesia

In some areas, amyloidosis diagnosis is nearly impossible due to the complete absence of diagnostic facilities. One participant from Ghana noted:

"In Ghana or West Africa, our greatest challenge is that we can't do any diagnosis except to look out for indications of suspicion of amyloidosis." Oncologist from Ghana

"No diagnosis is currently possible in West Africa, but there's an ability to suspect amyloidosis without being able to confirm it." Oncologist from Ghana

Because tests are expensive and hard to access, this leads to significant delays in diagnosis and limits timely intervention, often resulting in poorer outcomes. Addressing these diagnostic gaps is critical to improving global equity in amyloidosis care.

Limited availability and high cost of treatments

In many regions, healthcare providers lack access to essential medications, making treatment unaffordable for most patients. This means that physicians may be reluctant to pursue a diagnosis, viewing it as futile when effective treatments are inaccessible or too expensive.

"Most of our physicians [are] usually not really keen to proceed with all the problematic diagnostics, considering that it's very limited to treat our patients in Indonesia. About ATTR amyloidosis, all the medications are very expensive and most of our patients cannot afford it." Cardiologist from Indonesia

"We have the same problems in my country, particularly regarding money. It's not covered by our government, and that's why we don't have diagnostic services." Neurologist from Kazakhstan

Lack of education and familiarity with diagnostic techniques

Even in centers with access to diagnostic tests, a lack of experience and standardized protocols in interpreting results presents a significant challenge to achieving accurate diagnoses. Variability in expertise among healthcare professionals, particularly in imaging and laboratory techniques, can lead to inconsistent or incorrect diagnoses, delaying appropriate treatment. An expert from Taiwan noted that the understanding of diagnostic techniques remains a big challenge:

"Even in medical centers in other parts of Taiwan, they are not very familiar with the bone scintigraphy, especially its interpretation." Cardiologist from Taiwan

"Also, the protocol we use in Taiwan [for imaging] differs from hospital to hospital. Some use the one-hour method, others use the three-hour method, and the coupling is inconsistent." Cardiologist from Taiwan

Infrastructure limitations leading to diagnostic delays

Some hospitals lack the necessary outpatient facilities for an effective amyloidosis service, leading to long wait times for inpatient admission and diagnosis.

"The barrier is that the examination is not practical in outpatient settings. So, the patient has to wait for admission to inpatient care, which takes a long time." Cardiologist from China

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4.2. Proposed solutions to regional diagnostic and treatment barriers

Potential solutions to address regional barriers to diagnosis and treatment were explored, with several valuable insights shared by Professor Sanchorawala

Expanding access to less expensive and non-invasive diagnostic tools: Improving access to appropriate diagnostic tools is critical for diagnosis as well as differentiating between the various subtypes of amyloidosis. For suspected cases of ATTR amyloidosis, bone scintigraphy using pyrophosphate (PYP) or hydroxymethylene diphosphonate (HMDP) scans has emerged as a valuable and non-invasive diagnostic method. These scans can diagnose ATTR cardiac amyloidosis without the need for biopsy, making them a practical and more accessible option in many countries.

"For ATTR amyloidosis, we now have non-invasive diagnostic capabilities using bone scintigraphy or PYP/HMDP scans, which should be easily available in all countries." Professor Sanchorawala

Although AL amyloidosis still relies on biopsy for definitive diagnosis, to address challenges related to lack of access to invasive procedures like endomyocardial or kidney biopsies, abdominal fat pad aspiration could be adopted as an alternative biopsy method. This is a minimally invasive, in-office procedure that can be performed under local anesthesia and is useful when followed by Congo red staining (a low-cost and accessible method to detect amyloid deposits). Wider implementation of these diagnostic strategies could support earlier diagnosis, reduce reliance on high-cost or unavailable technologies, and improve access to care in resource-limited settings.

"So, do you have to do an endomyocardial biopsy? Do you have to do a kidney biopsy? No, you can do probably an abdominal fat pad aspiration, which is a fine needle aspiration, and subject that to Congo red staining." Professor Sanchorawala

Establishing external partnerships to facilitate access to diagnostics: As described above, institutions lack the financial resources to perform amyloid typing tests such as mass spectrometry and IHC. Outsourcing diagnostic services and developing contracts with established laboratories could provide a practical alternative and overcome access barriers to these diagnostic techniques.

"Outsourcing advanced diagnostics to other organizations could help. Physicians in India, for example, could contract with [commercial laboratory] for challenging cases."
Professor Sanchorawala

Healthcare providers from low-resource settings could consider negotiating reduced costs with established diagnostic facilities. This approach could allow more patients to receive accurate diagnoses without the excessive financial burden of on-site diagnostics. By forming strategic partnerships and advocating for subsidized diagnostic testing, access could be improved to essential amyloid typing tools and ensure that patients receive appropriate care.

"Hopefully, [commercial laboratories] can offer discounted rates for institutions developing these techniques."
Professor Sanchorawala

Increasing educational efforts and awareness: Educational efforts and improved awareness are essential for improving early detection of amyloidosis, particularly in regions with limited diagnostic resources. Clinicians must be trained to recognize the "red flags" of the disease and maintain a high index of suspicion. To support clinicians in conducting and interpreting diagnostic tests, organizations such as the American Society of Nuclear Cardiology have provided webinars and guidance to support accurate interpretation of tests (e.g., bone scintigraphy) for diagnosing ATTR amyloidosis. It is also important to educate laboratory personnel that AL amyloidosis differs from multiple myeloma, often requiring immunofixation electrophoresis and serum free light chain assays, even when standard serum and urine protein electrophoresis is normal. Targeted education across the care team could significantly improve diagnostic accuracy and reduce delays.

"I would encourage people who are interested to attend these webinar[s], seminars and also read through the position statements and the guidelines." Professor Sanchorawala

Improving treatment accessibility: To help overcome the barrier of limited access to treatment, healthcare professionals could explore alternative pathways such as patient assistance programs offered by pharmaceutical companies. These programs are designed to support patients who cannot afford their medications, making treatment more accessible in resource-limited settings. Additionally, participating in clinical trials can provide patients with access to cutting-edge therapies. Clinical trials are also required to include diverse patient populations, which may offer underrepresented regions an important opportunity to contribute to and benefit from advancements in amyloidosis treatment.

"Participating in clinical trials sponsored by pharmaceutical companies is another way to overcome this barrier, as sponsors are required to include diverse patient populations." Professor Sanchorawala

SESSION CONCLUSIONS

The barriers to diagnosis and treatment of amyloidosis in Asia, Africa, and the Middle East vary between regions, however identified challenges included **limited funding for diagnosis and treatment, lack of access to basic and advanced diagnostic tools**, **inadequate training**, and **poor treatment accessibility**. To address these challenges, those seeking to establish a center could take steps to expand access to affordable and easily implemented diagnostics, increase education and awareness, foster external partnerships with commercial diagnostic services, and explore alternative treatment pathways such as clinical trials and patient assistance programs.

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5. MULTIDISCIPLINARY COLLABORATION FOR COMPREHENSIVE CARE

Session objective: Identify barriers to effective multidisciplinary working within amyloidosis services and propose solutions to overcome them

This session focused on the key challenges of multidisciplinary collaboration in amyloidosis care, incorporating insights from Professor Ueda and Professor Sanchorawala, alongside audience polling to identify barriers across Asia, Africa, and the Middle East. Professor Ueda opened the session by sharing his experience from the Amyloidosis Center at Kumamoto University, highlighting how the multidisciplinary team in Japan work together to improve patient care (**Box 1**).

Box 1. Insights on multidisciplinary working from Kumamoto University

- Kumamoto University has a multidisciplinary team including cardiologists, neurologists, nephrologists, hematologists, radiologists, and clinical laboratory specialists
- This team-based approach enables comprehensive diagnosis and management of amyloidosis across multiple organ systems
- The center performs diagnostic testing to identify the specific type of amyloid involved in each case, offering consultations and second opinions to support accurate diagnosis and optimal patient care
- The multidisciplinary service also provides genetic counseling, especially for patients with hereditary ATTR amyloidosis
- Active collaboration takes place with other hospitals and clinics, both within and beyond the region, to ensure coordinated care
- There is a strong focus on education and training, sharing evidence-based knowledge with medical professionals through teaching and continuous learning initiatives

A participant poll identified the key challenges to achieving effective multidisciplinary collaboration, as described by Professor Ueda. The primary barriers reported were **time constraints** and **scheduling conflicts** (64%), followed by difficulty in recruiting or retaining specialized staff (55%; **Figure 3**).

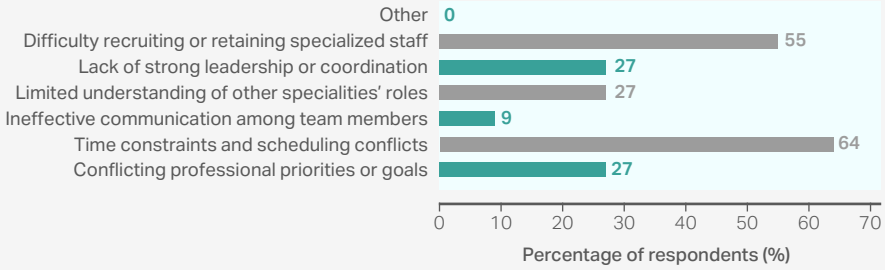

Figure 3: Participant responses to the poll question 'What are the most significant challenges to effective collaboration in a multidisciplinary care team? (Select your top two)'.

When reflecting on the poll results, Professor Sanchorawala emphasized that one of the most significant barriers to effective multidisciplinary collaboration is the **challenge of recruiting and retaining specialized staff**, an issue made more complex by the rarity and clinical demands of amyloidosis. This is further compounded by **time constraints and scheduling difficulties**, which were also commonly identified by participants as major obstacles to establishing coordinated care.

There can be a difficult balance between **clinical productivity and academic responsibilities**, with this being further complicated by generational workforce patterns. Junior healthcare professionals often move on after a few years of training, creating a cycle of **continuous turnover**. Addressing this issue requires efforts to nurture and promote the next generation of amyloid specialists, or "amyloidologists," within the medical community.

One proposed solution is to support junior healthcare professionals through **academic opportunities**. Although it is a rare disease, amyloidosis presents a lot of potential for research, publication, and data analysis. Encouraging junior faculty to engage in these academic activities such as retrospective studies and manuscript development can help enhance their professional satisfaction and motivation to remain in the field.

The findings of the poll also underscore the need for **adequate clinical time** for consultations, given the complexity of amyloidosis. Standard 20-minute appointment slots are often insufficient for consultation. Instead, 30–40 minutes may be required for established patients, and up to 1 hour for new consultations, to ensure thorough evaluation and management.

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Additional challenges arise from the **increased longevity of patients**, made possible by advances in amyloidosis treatment. While these advances represent a significant success in amyloidosis care, longer survival means patients are more likely to experience complications related to previously damaged organs, adding further complexity to their care and increasing the demand for coordinated multidisciplinary services. This intensity of care can be particularly demanding for junior clinicians, especially when compared to more common conditions like chest pain or ischemic heart disease, which allow for higher patient turnover in clinic settings. In institutions where clinical productivity is measured using metrics such as RVUs (relative value units), the slower pace and complexity of amyloidosis care can add further strain to staff and institutional expectations.

SESSION CONCLUSIONS

Effective multidisciplinary collaboration is essential for delivering comprehensive amyloidosis care, but remains challenging due to **staffing shortages**, **time constraints**, and **competing clinical and academic demands**. Supporting junior clinicians through academic opportunities and allocating adequate consultation time are key strategies to improve retention and care quality, especially as the complexity of managing longer-living patients continues to grow.

Together, the insights from this session reinforce the need for **structural, cultural, and academic solutions** to better support multidisciplinary teams and retain skilled professionals in the field of amyloidosis.

6. CONCLUSIONS

The discussions from this roundtable meeting show that establishing and operating amyloidosis centers across Asia, Africa, and the Middle East presents a range of challenges. Specific challenges vary across regions, however key barriers that were identified include **limited institutional support**, **lack of funding and access to diagnostic tools**, **fragmented care pathways,** and **limited access to advances in amyloidosis treatment**.

However, Professor Sanchorawala concluded that through the integration of diverse specialties, including cardiology, hematology, neurology, nephrology, and beyond, it is possible to build a comprehensive model of care that enhances diagnostic accuracy, strengthens treatment strategies, and ultimately improves patient outcomes and quality of life. Successful amyloidosis services can be built on six key pillars:

1. A dedicated multidisciplinary team
2. Continuous quality improvement and community education
3. A strong research and innovation framework
4. Access to appropriate therapies
5. Advanced diagnostic capabilities
6. Active involvement with relevant committees and societies

Addressing regional gaps through **education**, **collaboration**, and **strategic partnerships** will be essential in ensuring equitable care for amyloidosis patients worldwide. To build on the insights from this roundtable meeting, healthcare professionals wishing to establish or improve an amyloidosis service could implement the solutions proposed by the group (**Box 2**).

Box 2. Calls to action

- **Build a multidisciplinary team** with committed specialists across key disciplines such as cardiology, neurology, hematology, nephrology, and genetics to ensure holistic patient care
- **Define a clear mission and vision** for your center, with focused program goals and a clear business plan to align stakeholders and support long-term institutional buy-in
- **Develop strategic partnerships** with established diagnostic labs and research institutions to overcome resource limitations and lack of access to advanced diagnostics
- **Pursue diverse funding sources**, including government health initiatives, grants, and advocacy groups to secure initial and sustained financial support
- **Invest in education and training** for clinicians, radiologists, and lab personnel to improve early suspicion, accurate diagnosis, and effective treatment planning
- **Leverage research opportunities** such as clinical trials, biobanking, and retrospective data analysis to support academic growth and encourage institutional engagement
- **Promote access to care** through patient assistance programs and trial participation, particularly in resource-limited settings

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