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What is a Transplant Center? Why bother?

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Director, Transplant Infectious Disease and Compromised Host Program, Massachusetts General Hospital
Associate Director, MGH Transplant Center, Boston, MA, USA

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The News … the simple version

Transplantation is complicated!

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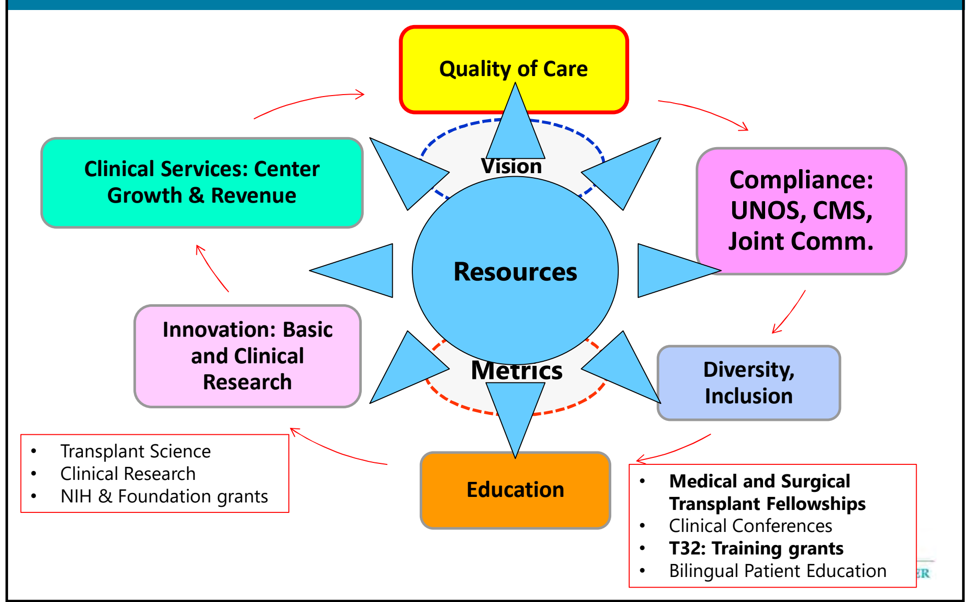

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We would all like to be the biggest and the best.

- **Reputation matters**
  - Excellence in clinical care
  - Research – basic, clinical, translational
  - Creativity matters – doing new things
  - Visibility
    - Societies / Service
    - Education (fellowships?)
  - **Priorities – what can you afford?**
  - **Vision – who provides direction?**
  - ***Leadership – let's "think big!"***

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Transplant Center – Strategic Priorities

Strategy #1: Lead the Nation in Innovative Research	Strategy #2: Provide the Best Care to a Growing Volume of Transplant Patients	Strategy #3: Better Serve the Diverse Community of Patients, Donors and Families in Region and Beyond	Strategy #4: Shape the Future of Transplantation through Training, Education and Public Policy Development
• Accelerate research in tolerance, xenotransplantation, and cellular therapies • Develop research programs in organ support, repair, and resuscitation • Apply tolerance approaches to composite tissue grafts • Collaborate with the Center for Regenerative Medicine to grow new tissues and organs • Expand clinical research through bench-to-practice collaboration among basic, clinical and translational researchers. • Develop a robust pipeline of new scientists	• Identify current and potential referrers across the region and in each organ program • Develop a comprehensive marketing/outreach plan • Recruit and retain the best medical, surgical and nursing staff, research faculty, fellows and residents • Develop outstanding educational programs focused on quality and multidisciplinary care • Establish robust quality assessment and performance improvement systems • Develop information technologies to support quality improvement, outcomes research and educational initiatives, and to enhance coordination of clinical care	• Increase organ availability through improved national sharing, increased organ donation, and improvements in organ support, repair, and resuscitation • Increase clinical staff, support infrastructure, and capacity of facilities • Increase the number of patients referred to and registered for transplant through better service, improved education and marketing, and establishing community-based clinics • Develop robust outreach programs to under-represented populations	• Develop training programs focused on quality and multidisciplinary care for medical, surgical, nursing, and other staff • Enhance educational materials for referring MDs, patients, donors and families, private and public payers, and communities • Play a leadership role in public policy related to organ donation and distribution

Strategy #5: Support an Integrated Approach to Clinical Care, Education and Research with a Dedicated, Expert Facility

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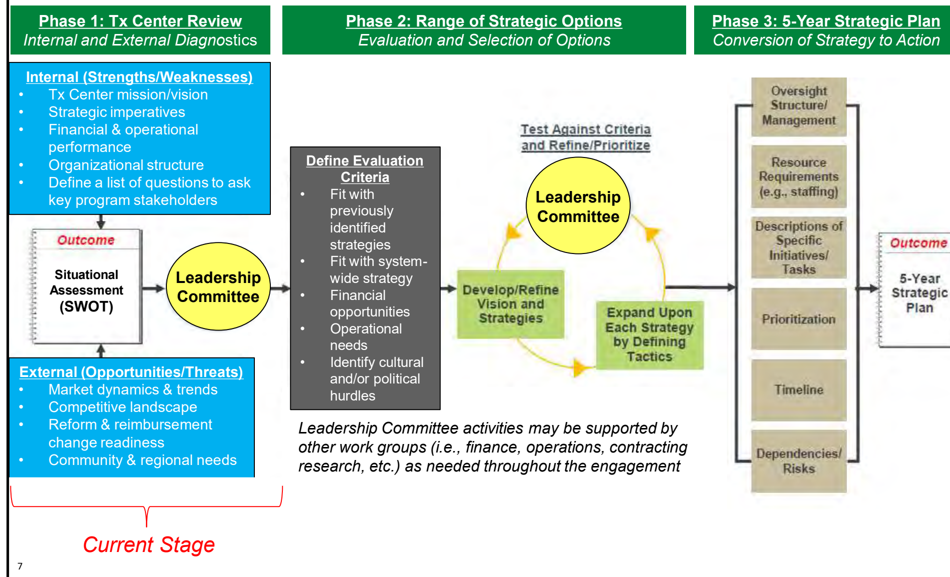
Strategic Plan – Project Approach



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Transplant Center– Autonomy? Basic Decisions Regarding Finance and People

What does "authority to privilege and recruit physicians" mean?

- Center has ability to **identify MD and non-MD needs in all specialties of importance to transplantation** (most often, Department needs are primary, transplant requirements secondary) – often will not require full FTEs in Transpant BUT uncompensated time is huge (0.3 FTE per MD).

What revenues and costs should fall under the center budget?

- Many models: All professional revenue and expenses associated with transplant activity should fall under the Center, including MD, non-MD, space, professional development and other associated practice costs – this would likely require the Center to pay session fees or similar mechanism for Department-based resources but **facilitates CMS reimbursement**
- All support for transplant activities should funnel through the Transplant Center cost centers and managed by the Center. Explore models for sharing of technical revenue between hospital and Center
- Non-MD "ancillary" staff employed and committed to Center e.g. for Social Services, Pharmacy, Case Management, Financial Coordination

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S W O T

What do we do well?

STRENGTHS (+)

- Large volume and great outcomes
- Medical subspecialty support → management of complex cases
- Innovation and Research
- Superb colleagues and trainees
- Multi-Disciplinary clinics
- Interdisciplinary conferences
- Outreach networking
- Leadership support

WEAKNESSES (–)

- Increased uncompensated demands on medical staff
- Limited Procedural capacity (radiology, endoscopy, urology)
- Challenging access to subspecialty care (eg. Diabetes) and primary care
- **RVUs disconnection with amount of work**
- **Historic surgical-medical split**
- Push towards system centralization
- **Physical space (inpt/outpt)**
- **Clinical staff burnout**
- **Competitive compensation**

OPPORTUNITIES (+)

International patients
Expand access to transplant from underserved populations
Expand outreach clinics
MGB (combined programs)
MGH Cancer Center
Limited Competition in region
Clinical Research LT Database
SRTR metrics improvement
Shifting waitlist practices
New leadership
EPIC Support

THREATS (–)

- Limited hospital capacity (ICU)
- Compensation not competitive
- Regional competition
- Change in UNOS Allocations
- Insurance COE vs UNOS metrics
- Patient geography (remote care)
- Rising procurement costs/staff
- Understaffed support services (PT, Social Work, Pharmacy)

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Value of Centers: Must be demonstrated

Area	Value
Clinical	• Measure and work to improve **total patient outcomes**, rather than process metrics
	• Improve patient access, **diversity of population**.
	• **Identify and respect needs of different clinician groups in continuum of care: Medicine & Surgery & Pediatrics. [Uncompensated time?]**
	• **Deliver top-line growth for the hospital and PO**
	• Reduce total patient costs across services and hospital
	• Ensure coordinated, multidisciplinary care for the full cycle of care
	• Coordinate care between centers, ambulatory and inpatient

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Value of Centers (2)

Area	Value
Research	• **Enhance clinical/translational research by improving collaboration and promoting lab to bedside transition** • Reputation building – clinical advances? • Provide funding and infrastructure support for multi-disciplinary research
Education	• Advance education by providing multidisciplinary training and collaboration between specialties (MDs & non-MDs) • **Fellowship training programs: clinical and research**
Marketing / network development	• Outreach: Improve marketing to patients/referring physicians • Establish multi-disciplinary care at affiliate sites
Community	• Educate patients and community members on disease states • Identify underrepresented groups in transplant groups

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What do we need to deliver on these values?

Area	Value	Governance	Resources/finances	Geography
Clinical	• **Measure and work to improve total patient outcomes** • **Improve patient access** • **Identify and respect needs of different clinician groups** • **Deliver top-line growth for the hospital and PO** • **Reduce total patient costs across services and hospital/PO** • Ensure coordinated, multidisciplinary care for the full cycle of care • Coordinate care between centers	• **Responsibility to develop and enforce common care pathways and protocols across role groups** • **Authority to recruit / privilege / supervise physician and non-physician staff** • **Aligned administrative structure through centers to supervise non-MDs, manage finances, scheduling** • **Administration, Medical and Surgical directors with paid administrative time and interest (and skill)**	• **Redeployment of dollars for infrastructure support (IT/personnel) for tracking quality metrics and improving quality of care** • **Option: Center ownership of and accountability for GH & PO finances related to center-based clinical care to align incentives around cost reduction and top-line growth between divisions and hospital/PO** • **Share technical revenue to support under-reimbursed activities required for multidisciplinary care and to align incentives**	• Co-location of clinical services in dedicated facilities where possible

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What do we need to deliver on these values?

Area	Value	Governance	Resources/finances	Geography
Research	• Provide funding and infrastructure support for multi-disciplinary research • Enhance collaboration in clinical/translational research • **Research administration**	• Research leadership across all areas – clinical and basic	• Re-deployment of research support budgets for small grant mechanisms • **Infrastructure for clinical research**	• Co-location of clinical research & patient care
Education	• Support clinical fellowship programs • Recruit best residents • Research fellowships (T32)	• **Director of education** • **Major focus of Center**	• **Re-deployment of resources to fund multidisciplinary fellowships**	• Mandatory rounds (clinical and research)
Marketing / network development	• Improve marketability to patients/referring physicians • Outreach education and multi-disciplinary care at affiliate sites	• Formal growth strategy • Links to other specialty areas (oncology, advanced heart failure)	• Focusing marketing budget and support support for centers	• Per plans
Community	• Educate patients and community physicians	• Diversity group	• Funding	• Per plans

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Metrics:

WHAT GETS MEASURED, GETS ATTENTION, AND GETS DONE!

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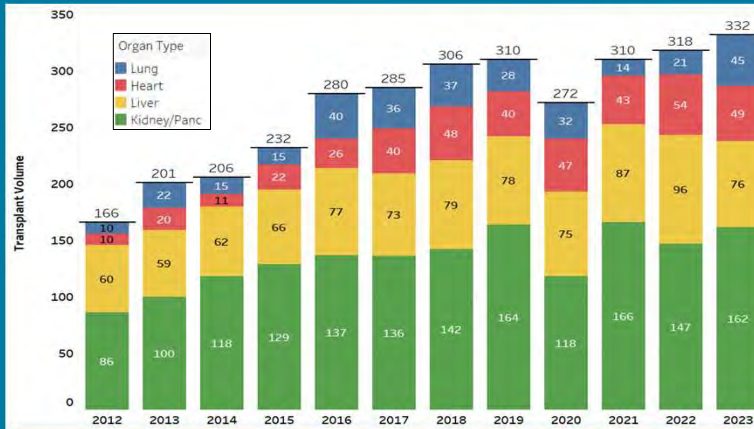
All Organ Transplants



+100% increase (2012–2023*)

Data Source: OPTN; 2023 YTD is data from 1/1/23 – 11/30/23

* 2023 YTD data: 1/1/23 – 11/30/23

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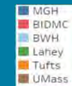
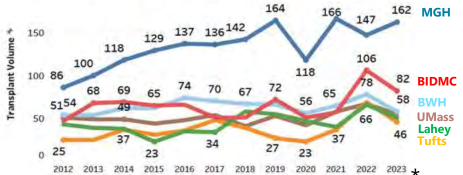
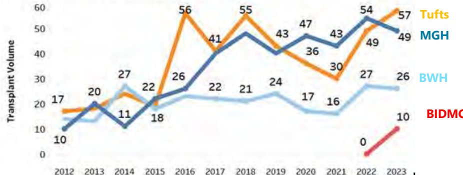
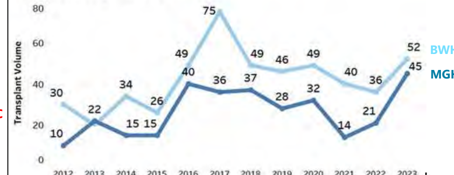
Growing competitive landscape across all major organ programs in New England



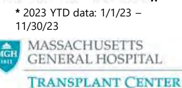






Data Source: OPTN; multi-organ transplants counted in each organ group

* 2023 YTD data: 1/1/23 – 11/30/23



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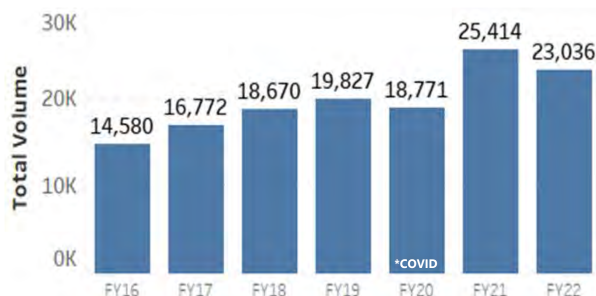
Overall patient encounters increased by 58% across all phases of care from FY16 – FY22: Resources!!



- Steady year-over-year increase in patient volume across all phases of transplantation, with FY21 and FY22 hitting +20,000 patient encounters
- FY20: COVID impacted patient volumes, leading to pickup in FY21 due to pent up demand.
- FY21: significant increase in immunization visits and lab tests, greater use of telehealth, and psych visits (liver)
- Stable increase in pre-txp evals, post-txp visits and infusions across all fiscal years

All Phases	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY Avg. FY20/21	% Change Avg. FY20/21 vs. FY22	% Change FY16–F22
Pre-Phase (Eval & WL)	2,071	2,230	2,232	2,420	2,117	4,782	3,777	3,450	10%	82%
Txp	254	262	275	278	266	285	276	275	0%	9%
Post-Txp	12,255	14,280	16,163	17,129	16,388	20,347	18,983	18,368	3%	55%
Total	**14,580**	**16,772**	**18,670**	**19,827**	**18,771**	**25,414**	**23,036**	**22,093**	**4%**	**58%**

Source: EPSi Hospital Accounting System; includes all phases of transplant (eval, waitlist, surgery, post-transplant care) based on patient status in Epic Phoenix. Net Revenue is Actual Payment as per EPSi; Pre-transplant financials include Medicare Cost Report revenue; multi-organ transplants counted in descending hierarchy of lung, heart, liver, kidney, pancreas (i.e., Liver/Kidney counted in Liver)

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Waitlist Management, Capacity, Competition

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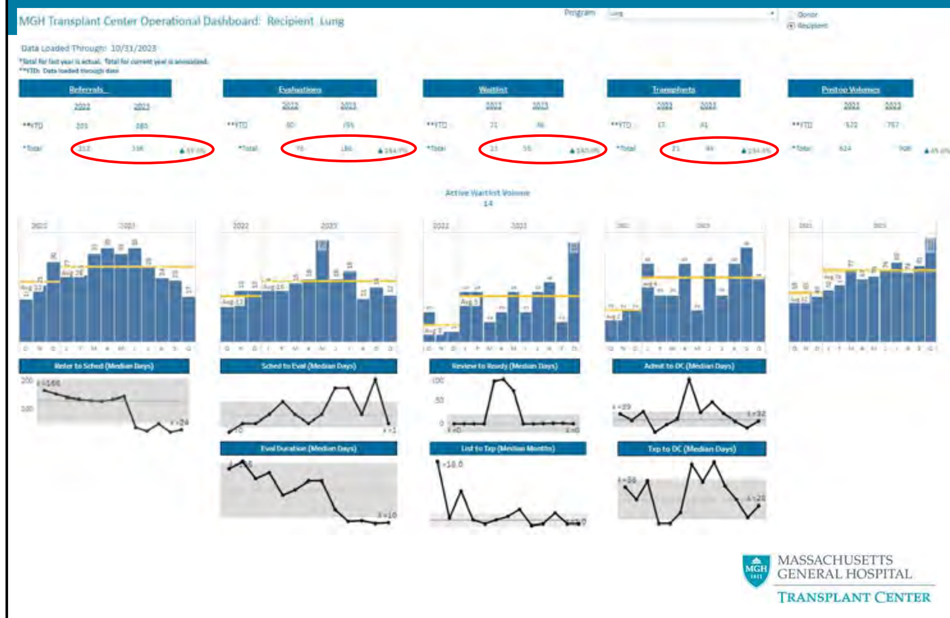

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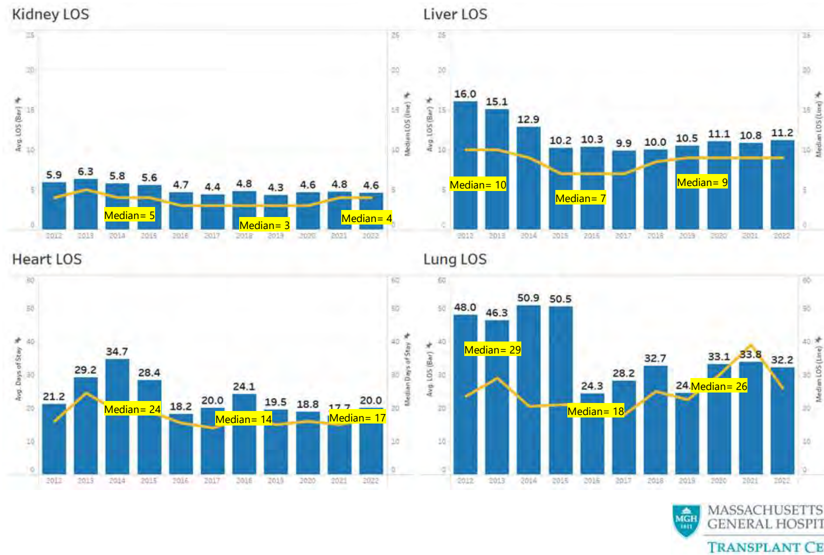
Reduced Length of Stay: Financial Driver



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Process Metrics: Follow the money!

ICU care of a kidney recipient doubl[…] cost p[…]

Txp Only: Cost comparing set ICU vs. Floor

Readm[…] for kid[…] rejectio[…] technical issues, graft dysfunction, and ID = 80% of direct costs!

Assumptions are dangerous: Costs of liver and heart perfusion systems (disposables, pump tech) are very high ($200-500,000/case) but balanced by fewer readmissions, graft failures.

OR time accounts for 77% of total direct costs ($246K) and $3.6K per patient, with the majority occurring during readmission

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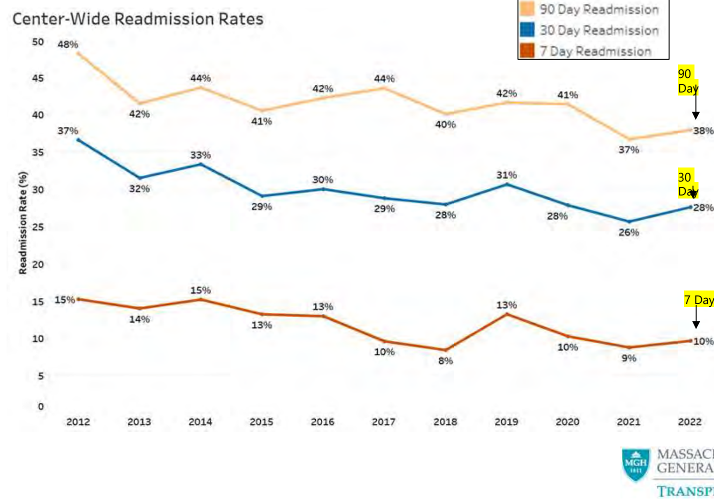
Reduced Readmissions



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Quality, Safety, Compliance

It's not just about CMS & UNOS – but they matter!

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Unique Challenges: Quality, Safety and Compliance in Transplantation

- **Transplantation is the most highly regulated segment of healthcare at the Federal level.**
- **The Transplant Center takes on responsibility for compliance with regulatory guidelines and data submission requirements of CMS and OPTN (UNOS) while advancing the quality and safety of clinical care.**
  - Data reporting and compliance requirements have increased (and are publicly reported).
  - Special requirements for Transplantation (e.g., informed consent, organ verification, listing and outcomes data) are **in addition to** policies and procedures for all patients.
  - Staff education and documentation requirements (>800)
  - Need documentation of regulatory oversight (Clinical Operations Committee)

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Transplant Center: Compliance, Quality and Safety

- **Compliance** (UNOS, CMS, Joint) – **serial data submission requirements for patients** (“TEIDI forms”), ***unannounced audits, changing regulations***
- **Coordination** with policies and Quality and Safety across Medical Center
- **Program-specific Quality and Efficiency Metrics** (heart, lung, liver, kidney, VAD): *Process metrics, Outcomes, HCAHPS, Review of Safety Reports*
- **QA for subcontracting groups & OPO**
- **EPIC** (Medical Record: Phoenix): Frequent updates to assist reporting by Selection Committees, OR staff, Pre-transplant evaluation and listing, inpatient care → Data Reports
- Policies & Procedures centralized and reviewed - clinical and administrative
- Substance use disorders (SUD) supports
- **Equity and inclusion**
- **Education** – Regulatory and Clinical Education
- **Documentation** of Medical & Surgical Fellowships
- **Documentation of vaccinations, serologic testing, GFR’s**

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Operations (examples)

- **Audits of processes** reviewed weekly (e.g., OR processes, selection committees and listings, organ and vessel utilization, consents, data submission (TEIDI), patient education)
- **Center metrics** (referrals, evaluations, transplants, outcomes, patient satisfaction – HCAHPS, racial/ethnic distribution)
- **Safety reports** (reviewed daily by Director Quality and Safety, Director, Compliance) *reviewed monthly* at Transplant Center Clinical Operations, Quality and Patient Safety Committee (QPSC) – with Center for Quality and Safety
- **QPSC initiatives** shared at Clinical Operations and QAPI Committees
- **New Center initiatives** by email, organ-specific QAPI presentations, Center Grand Rounds
- **Annual Center QAPI Report** – all programs.
- **Coordination of care**: reviewed with Medical/Surgical Quality and Safety Chairs for RCA/action
- Attend **organ-specific Selection Committees** for on-going education, QAPI projects.
- **EPIC** issues:
  - Maintain documentation of compliance (OR organ check-in, organ verification, consents)
  - TEIDI: developed submission process online → reporting largely via EPIC 2019-2021
  - Assure completeness of outside lab entry (Quest) into EPIC (serologic testing of donors and recipients) 2019-2020
  - Follow up testing (3/6 mos.) for all recipients including PHS Increased Risk Donors for HBV, HCV, HIV
- Presentations to **Insurance Carriers** to assure top level referring status
- Participate in MGB **Contracting Committee**
- **Orientation of all new staff** to Center and CMS/UNOS Policies and procedures

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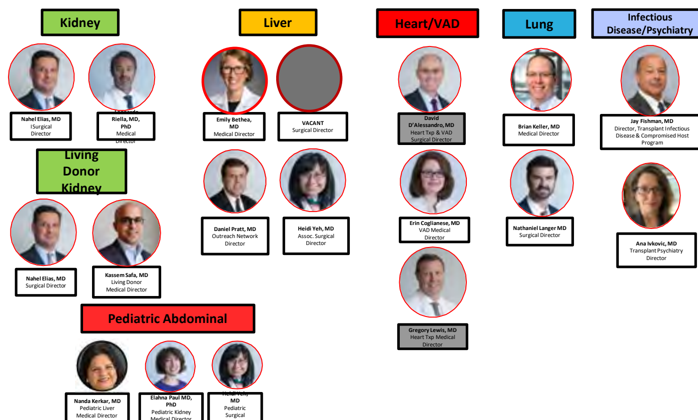
MGH Transplant Center Clinical Leadership

Last Updated Dec 2023



* Living Donor Liver Transplant and Pancreas Programs are on "Long-Term Inactivation"

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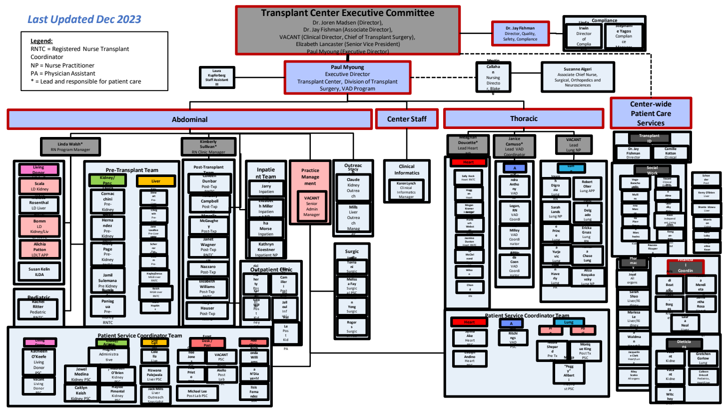
MGH Transplant Center Org Chart



- Over 40+ APPs (inpatient/outpatient)
- Over 40+ RN Coordinators
- Over 25+ Pt Service Coords./Admins

- Over 50+ Ancillary Support Staff:
  - PharmD, SW, Dieticians, Fin. Coords.
  - ID, Psychiatry, PT/OT, SUD.

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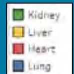
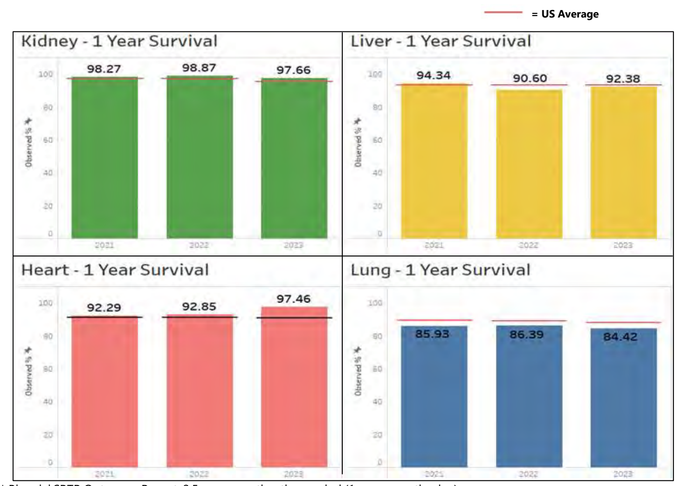
SRTR Report: 1-Year Patient Survival

MGH vs U.S. Average





30 * Biennial SRTR Outcomes Report: 2.5 year reporting time period (1-year reporting lag)

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Staff Education

All staff must have documentation related to orientation and continuing education

Continuing Education:

- *Transplant Boot Camp*
- *Transplant Center Grand Rounds*
- *Weekly Russell Rounds and Friday morning*
- *Year in Review presentations*
- *Alliance webinars*
- *National conferences (ATC, ISHLT, NATCO, ITNS, UNOS TMF)*

SAVE the Date: Transplant Boot Camp 2021
A 10-week educational series provided by the MGH Transplant Center

Starting, Wednesday, June 23rd, 12:00PM– 1:00PM
Via Zoom Webinar (registration links will be sent)
CNE & CME will be offered for majority of courses*

Topics To Include:

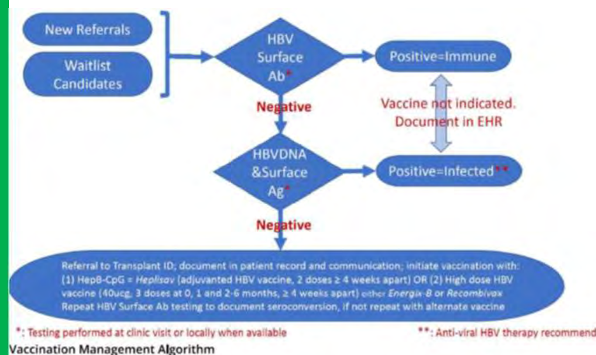
1. Compliance in Organ Transplant (Linda Irwin, NP)* - June 23rd
   (*This is a regulatory course and therefore will not offer CNE or CME)
2. Vascular Composite Allograft (Curtis Cetrulo, MD) - June 30th
3. HLA and DSA Testing (Vikram Pattanayak, MD) - July 7th
4. Transplant Infectious Disease (Jay Fishman, MD) - July 14th
5. Everything You Need to Know About TJC VAD Survey (Janice Camuso, RN)* - July 21st
   (*This is a regulatory course and therefore will not offer CNE or CME)
6. Liver Transplantation (Emily Bethea, MD) - July 28th
7. Heart Transplantation (Gregory Lewis, MD) - August 4th
8. Living Donor Transplant (Leigh Anne Dageforde, MD)- August 18th
9. Kidney Transplantation (Nahel Elias, MD) - August 25th
10. Lung Transplantation (Deb Basler, NP; Caroline McEnery, NP and Orlaith Delgado, NP) - September 1st

For any questions, please reach out to Linda Irwin, MA, RN, ANP-C, CCTC

Accreditation

Center-wide Quality Initiatives: Pick some

- ✓ Access to Care – by race, gender
- ✓ Staff education
- ✓ Patient Education
- ✓ Hepatitis B Vaccines and documentation
- ✓ COVID Vaccination
- ✓ Weight loss
- ✓ EPIC Quality reports
- ✓ Remote Visits (>10,000 in COVID)



Vaccination Management Algorithm

Program Specific QAPI Initiatives

Heart	Incidence fungal infection; posaconazole treatment Grade 3 rejection/immunosuppression protocol modification Use of DCD donor hearts
Lung	Incidence of CMV infection Time to extubation COVID-19 and Refractory ARDS
Liver	Acute Alcoholic Hepatitis Protocol Substance Use Disorder Clinic Expansion Use of DCD donor livers
Kidney	Readiness Tracking stent removals after transplant BMI project; early referral to weight loss center
Living Donor	Ensuring donor blood is collected and stored for 10 years
Pediatrics	Vaccination after transplant

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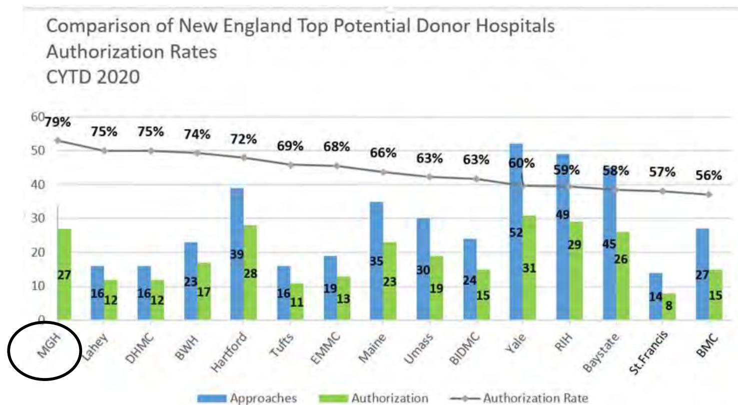
Organ Procurement:
Overall Authorization Rate by Top Potential Hospitals CY 2022

(in order of highest authorization rate)



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MGH PHS Donor and Recipient Tracking –CMS requirement
Day 0, 1-3 months and 6-12 months post-transplant

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SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Massachusetts General Hospital (MAMG)

Adult Liver Transplant Summary

SHOW PEDIATRIC

Transplants from Deceased Donors in a year	Transplants from Living Donors in a year	Survival on the waitlist	Getting a Deceased Donor Transplant Faster	1-Year Liver Survival
93	2			

Metric Management

Survival on the waitlist **(waitlist mortality)** and Getting a Deceased Donor Transplant Faster **(transplant rate)** are negatively influenced by factors that do no equate with quality.

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Key Challenges	Impact	Recommendations

Meeting Insurance COE Criteria	**Estimated loss of 100+ new referrals/redirected patients on the waitlist a year**	**Improve metrics, waitlist management practice, address COE criteria**:
		• **Currently underway:** Optimize waitlist management processes (reduce waitlist size, updated TCR forms, move patients to GI clinic, defer/remove lower MELD pts etc) to ensure we are meeting/exceeding COE criteria.
		  • Will require additional clinical and administrative staff including hepatology MDs, APP, waitlist management RN, analytics team.
		• **Short-term:** Advocacy with payers with engagement of MGB senior leaders to address COE criteria concerns. A new COE denials and "pain point" tracking system is in development in Epic to monitor ongoing insurance barriers to quantify administrative burden.
		  • This effort will require additional financial coordinator support to address existing insurance challenges.

Access/Capacity	**Estimated loss of 10-15 potential liver transplants a year**	**Implement "Just Say Yes" for severe liver disease and liver transplant candidate transfers.** • **Currently underway:** Partnership underway to with the Patient Transfer and Access Center (PTAC) to expedite accepting appropriate OSH transfers to MGH or BWH (repatriation). • **Mid-term:** Hire transplant hepatologists at both MGH* and BWH* (non-RVU efforts). • **Long-term:** Dedicate an inpatient floor to manage liver disease patients and allocate additional ambulatory space for hepatology and transplant patients.

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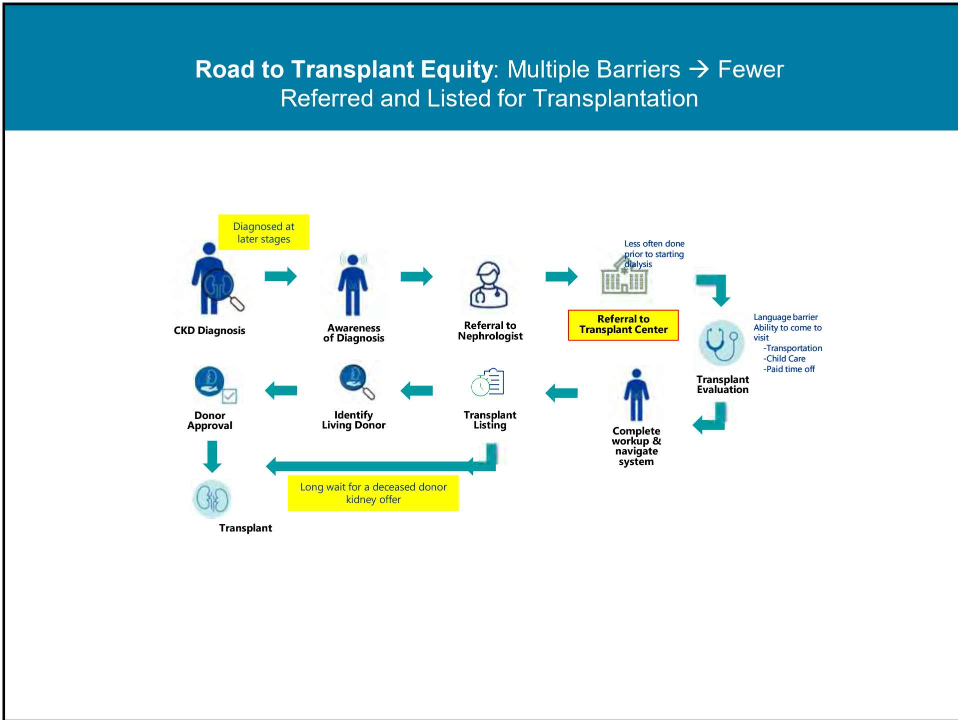
Road to Transplant Equity: Multiple Barriers → Fewer Referred and Listed for Transplantation



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Equity Challenges: *Adverse social determinants of health*

- Need financial and other resources (patient navigators, multilingual providers, pharmacy, transportation, social work, outreach facilities) to *coordinate care* through the process of transplantation.
- Need system to provide *extra-renal transplants* to underinsured patients.
- Creativity: Education of providers (and patients) for early referral – and ease of access to care.

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Equity and Diversity Overview Examples

- **New outreach clinic in Chelsea for underserved populations: MGH Equity in Kidney Transplantation (EqKT) Initiative: Kidney Transplant Evaluation Program:** first session **February 7, 2022 → First (9) patients transplanted from Chelsea project**
- ***Listed MGH renal candidates under Mass Health Limited*** *(safety net) who lack usual resources for transplantation (approved MGH Finance, MGPO, and MGH leadership).* (5**7 listed**)
- Adverse impact of **renal function measurements** in African-American candidates using adjusted GFR (glomerular filtration rate) to give added waiting time on list for earlier transplantation. (**8 transplanted**)
- **Documented and reduce implicit bias during listing meeting**
- **Education sessions** with Medical and Surgical Directors *to encourage diversity and identify institutional racism as important challenge*
- **Training**: Substance use disorder training, Equity conference for heart failure & transplant program completed

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So, let's make our Transplant Center better!

Transplantation is a team sport – and "coaching" often fails. Where do we start? It's about "buy-in"

John Kotter from Harvard Business School told me: "5-10 years from now, I will meet you in an airport and ask you NOT about your job title, salary, or reputation. I will ask you: **What is your legacy?**"

- Your research will often be forgotten, repeated, or found to be wrong (sorry).
- Your organizational decisions are long since eradicated
- Your grants have ended
- **So, your legacy is (largely) your family and the people you have trained and the lives you have saved.**

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Kotter's: Leading Change – 1.0

Stage	Actions Needed	Pitfalls
Establish a sense of urgency	• Examine market and competitive realities for potential crises and untapped opportunities. • Convince at least 75% of your managers that the status quo is more dangerous than the unknown.	• Underestimating the difficulty of driving people from their comfort zones • Becoming paralyzed by risks
Form a powerful guiding coalition	• Assemble a group with shared commitment and enough power to lead the change effort. • Encourage them to work as a team outside the normal hierarchy.	• No prior experience in teamwork at the top • Relegating team leadership to an HR, quality, or strategic-planning executive rather than a senior line manager
Create a vision	• Create a vision to direct the change effort. • Develop strategies for realizing that vision.	• Presenting a vision that's too complicated or vague to be communicated in five minutes

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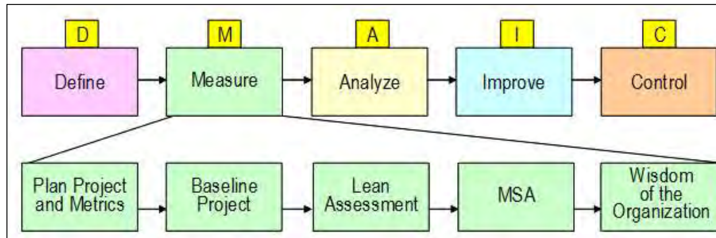
Process Improvement Project: Traditional



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Alternative: Get everyone involved!!

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Kotter's: Leading Change – 2.0

Communicate the vision	• Use every vehicle possible to communicate the new vision and strategies for achieving it. • Teach new behaviors by the example of the guiding coalition.	• Undercommunicating the vision • Behaving in ways antithetical to the vision
Empower others to act on the vision	• Remove or alter systems or structures undermining the vision. • Encourage risk taking and nontraditional ideas, activities, and actions.	• Failing to remove powerful individuals who resist the change effort
Plan for and create short-term wins	• Define and engineer visible performance improvements. • Recognize and reward employees contributing to those improvements.	• Leaving short-term successes up to chance • Failing to score successes early enough (12-24 months into the change effort)

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Kotter's: Leading Change – 3.0 "Winning!"

Consolidate improvements and produce more change	• Use increased credibility from early wins to change systems, structures, and policies undermining the vision. • Hire, promote, and develop employees who can implement the vision. • Reinvigorate the change process with new projects and change agents.	• Declaring victory too soon—with the first performance improvement • Allowing resistors to convince "troops" that the war has been won
Institutionalize new approaches	• Articulate connections between new behaviors and corporate success. • Create leadership development and succession plans consistent with the new approach.	• Not creating new social norms and shared values consistent with changes • Promoting people into leadership positions who don't personify the new approach

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Thank you!

Questions?
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