CKD Models of Care: Nephrologists as the General Manager vs Member of a Larger Team?

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Disclosure of Interests

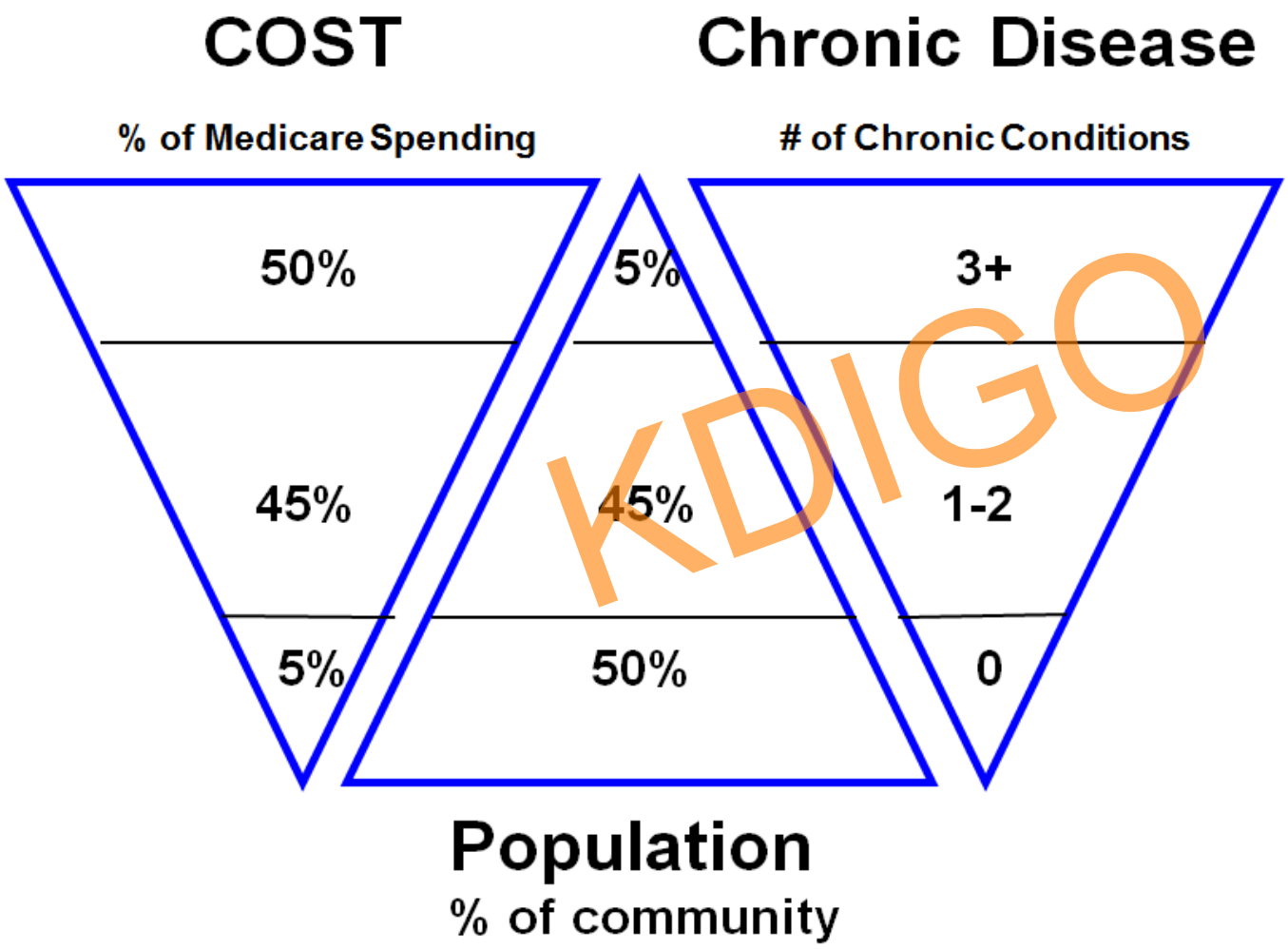
No disclosures

2017: The Practice of Nephrology – meeting expectations

1. Provide safe, timely, quality care
2. Eliminate unwarranted variation in care
3. Perform only necessary tests, procedures, and therapies
4. Provide end-of-life care
5. Address the crushing costs of care
6. Attain patient alignment
7. Deliver patient-focused care

Population Health Resource Relationship

2010 data from Mayo Clinic HSER



Services

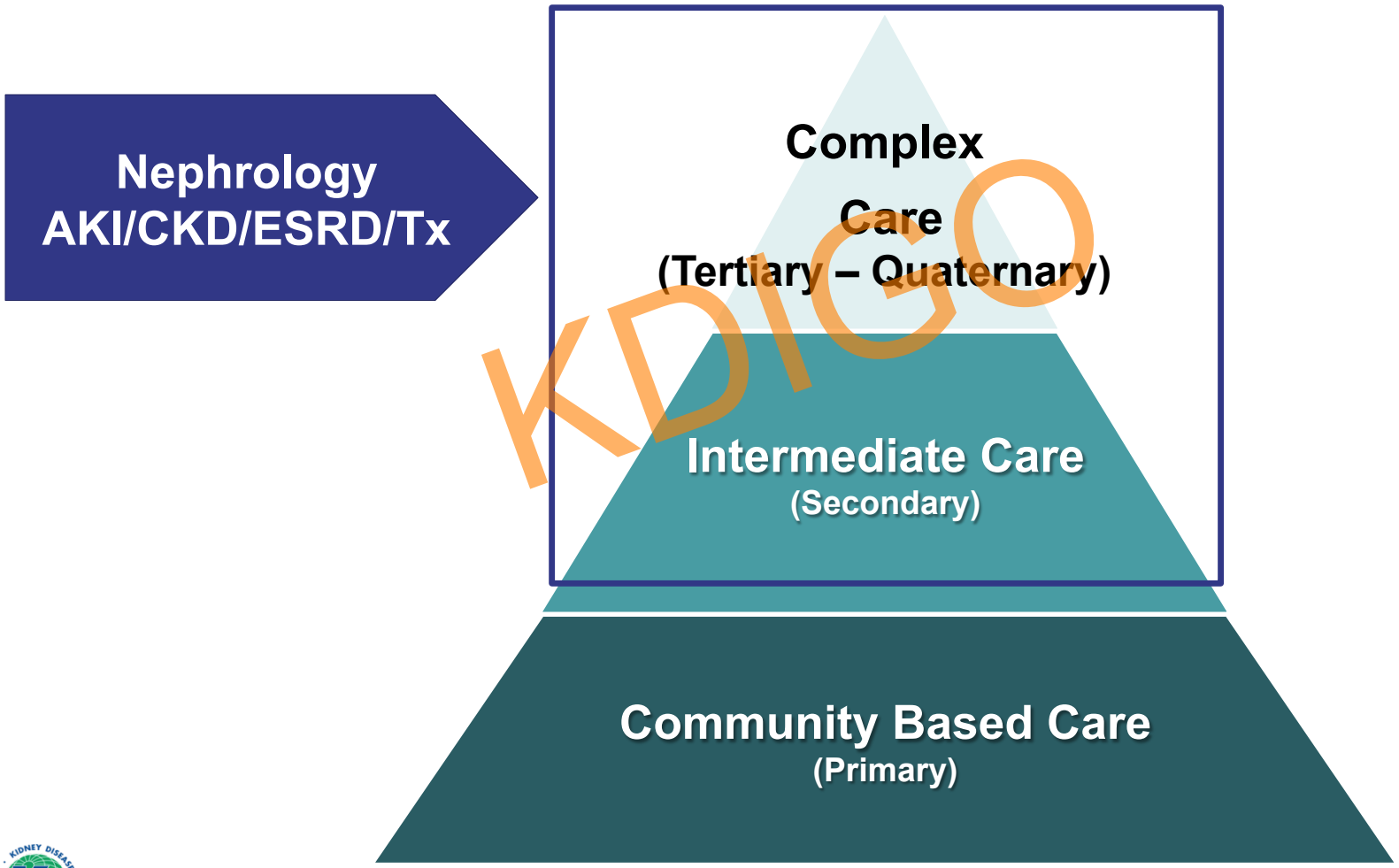
Multi-disciplinary Care Teams
Home Monitoring
+
"Medical Home"
Education
Community Support
+
Wellness, Risk Screening
Shared Decision Making
Health Education

Williams AW, Nesse RE, Wood D. Am J Kidney Dis. 2012 May; 59(5):601-3.

Essential Elements of a Chronic Care Model

- Appropriate, early patient identification
- Supportive system of longitudinal care
- Smooth transitions along disease trajectory
- Interventions to delay progression
- Trained team members
- Formalized protocols, communication tools and education
- Data management

Achieving Population Health at Each Level of the Pyramid



The Most Important information: What Our Patients Tell Us

"Patients don't get vacations."

-Mayo Clinic Dialysis Services Patient

Re-Engineering Dialysis

Practice

Delivery

Experience

Patients We Serve Represent Different Personas

I started dialysis in the hospital. I thought I was getting sick a couple months ago, but I didn't have a primary care doctor. To be honest, I was afraid of the cost and never imagined getting so sick so quickly. Now I have a lot of hospital bills to pay, and I'm trying to organize my Medicare all at once now. It's so confusing. I need to find a primary doctor that I like. I've been out for a couple months but I'm just now understanding the process. Sometimes I have to skip dialysis, because of my work schedule. I know that it messes up my schedule, and that scares me. I don't have a choice though. I have to put food on the table for my young kids. My wife is already doing most of the work. To pay for all of these pills and diabetes appointments, I have to work extra shifts when I can. Then on top of this, the care team wants me to exercise and diet. I have so much stress on my mind that I can't imagine where I would find the time. I want to be a dad too. "I'll CROSS THAT BRIDGE LATER."

JOHN (M) AGE 42

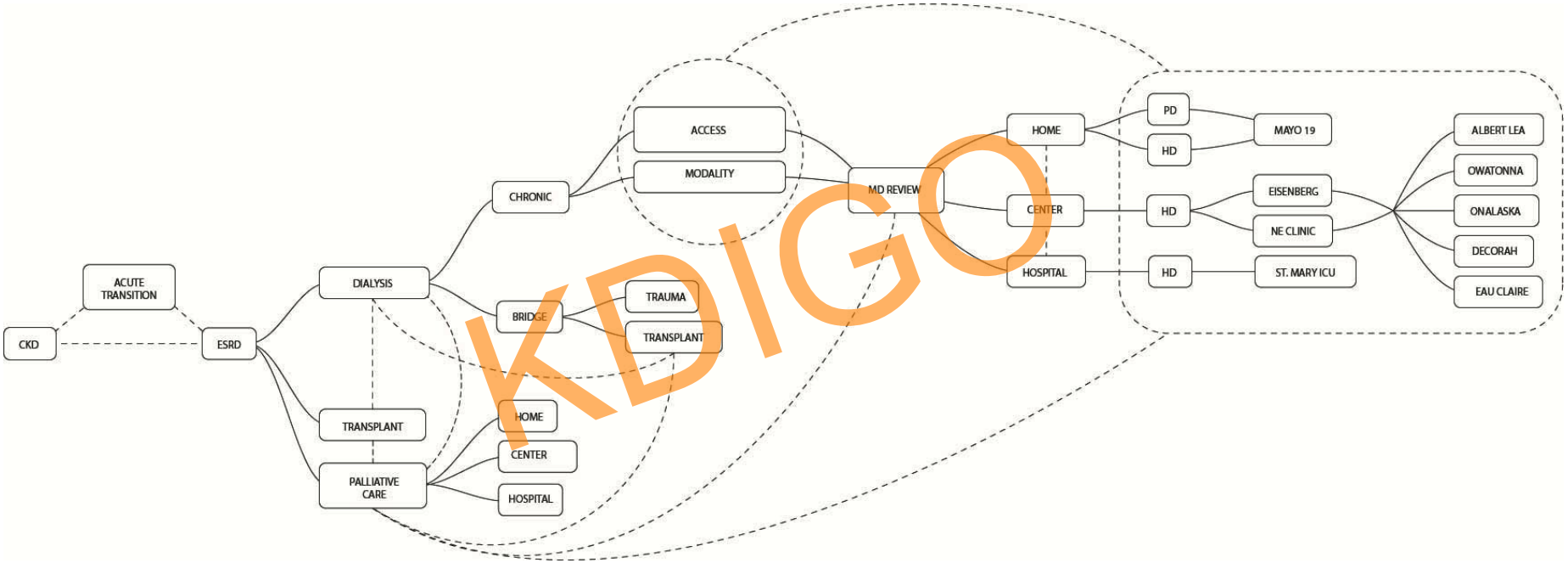
ACUTE ESRD (GRAFT)

HAD TO QUIT WORKING

MARRIED WITH KIDS

The Center for Innovation developed 8 Personas for ESRD based on more than 100 observations & interviews.
Ms. Krisa Ryan

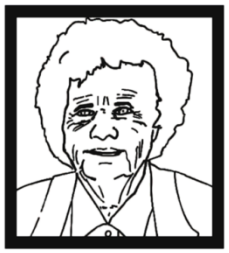
Chronic Kidney Disease Patient Trajectory



Patient Needs

Seen Through the Eyes of Personas

- Shared Decision Making (Non-paternalistic discussion between the patient and the care team around goals within the community.)
- Collaboration & Empowerment (Effectively exchanging information to set up mutual understanding and success.)
- Open & Honest Communication (Transparency of cost, data, modalities, and delivery of care)
- Improved Education Intervals and Interpretation (Real-time information that has a tighter feedback loop translated on the patient level to gain maximum usability of information.)
- Clarified External Relationships (Mutual understanding of team member roles and activities that would support their capacity to maintain workload for the future state. Note patients and their family units as active members of team.)



ROBERTA (F)
AGE 76
ACUTE ESRD (CATHETER)
RETIRED
NO FAMILY/FRIEND

NARRATIVE

I've been on dialysis for a couple months now. I used to be at Eisenberg, but now they moved me out here to the NE clinic. It's farther from my nursing home. Not that it matters, but I don't know why they moved me. I take a shuttle and nobody meets me. I have no family, and I don't know anyone else at dialysis. I hate it. I don't have any options. I'm sad most of the time. I can't even choose the food I eat at the nursing home. I don't feel like myself anymore. I don't know if I can stop dialysis or if that's sa- creligious. I hope someone talks to me. Maybe I'll tell my nurse. She talks to me the most. If they knew what I needed though, why wouldn't they give it to me?

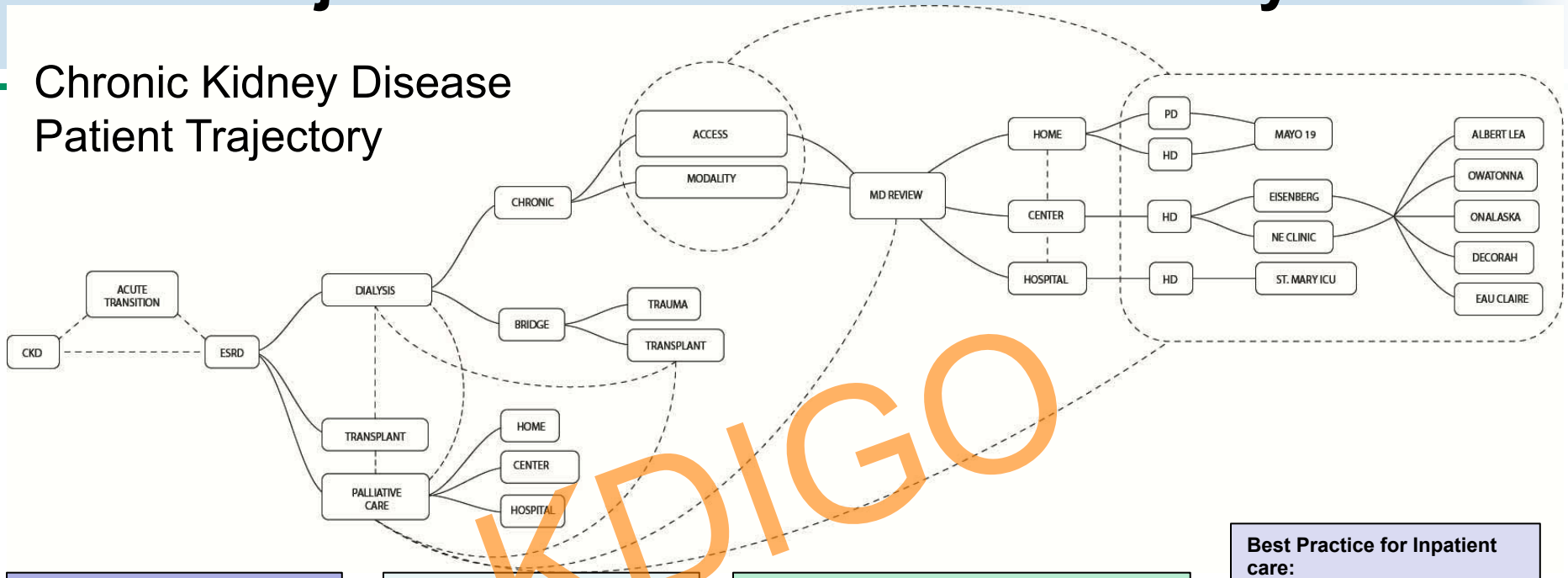
"I DON'T FEEL LIKE MYSELF ANYMORE."

INFLUENCERS

- Shared Decisions
- Collaboration
- Communication
- Education
- Relationships

Project RED Best Practice Summary

Chronic Kidney Disease Patient Trajectory



Shared Decision-making:

- Patient Education & Discussion about treatment options: Decision aids; Disease Trajectory Visual Tool; Dialysis Quick Start Guide & "Who to Call" Guide
- Annual medication therapy management consult with pharmacist
- Nurse Care Coordinator assigned to highest risk patients
- Palliative Care/Advanced Care Planning

Best Practice for Chronic Kidney Disease (CKD)

- Alert for primary care physicians for Nephrology referral eGFR <25
- Patient Education: Revised hand-outs, class contents
- Multi-author tracking tool
- Standard visit elements/ visit template
- Shared, multi-authored care plan and check list
- CKD care process pathway/ best practices available to all

Best Practice for End Stage Renal Disease:

- Care Team notified when inpatient care required or ED visit
- Emergent dialysis in the ED
- Admission order set/ co-location of patients when possible
- Work unit huddles and structured hand-offs
- Palliative Care / Advanced Care Planning
- Pharmacist Medication Management
- Continued use of multi-author tracking tool
- Nurse Care Coordinator assigned to highest risk patients
- Discharge Checklist
- "Quick Start" and "Who to Call" guides with dismissal information/education

Best Practice for Inpatient care:

- Patient Education & Discussion about treatment options: Decision aids; Disease Trajectory Visual Tool; Dialysis Quick Start Guide & "Who to Call" Guide
- Dialysis NP & RN part of the inpatient care team & part of dismissal rounds
- Standard Order Sets
- Medication Management/ med reconciliation
- Palliative Care part of the Nephrology team

MAYO CLINIC

My Options

What are my options?

These cards are a conversation guide to help you discover which renal replacement therapy options may best support your individual values, goals, and preferences for your lifestyle and vision of wellness. If none of these options seem right for you, you may consider discussing supportive care options with your provider.

How will I know if I made the best decision for me?

For any of the options available, there may be an adjustment period at the beginning. Many patients need a few months to begin to feel the full effect of lifestyle changes. At this point, you can discuss with your care team if the option you chose continues to support your values, goals, and preferences for your lifestyle and vision of wellness.

Self-Care

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

There is approximately two weeks training for patients upfront.

Patients self-manage and do their treatment each day.

Home Hemodialysis

There is approximately three weeks training for patients and helpers upfront.

Patients and helpers self-manage and do their treatment each day.

In-Center Hemodialysis

Patients participate in the treatment with the care team.

Kidney Transplant

Patients participate in the treatment with the care team.

Location

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

Treatments can be done at work, home or where you travel.

Home Hemodialysis

Treatments are done at home.

Equipment can be taken with you for travel.

In-Center Hemodialysis

Treatments are done at a dialysis center.

Patients are required to contact their social worker ahead of time in order to arrange treatments at their travel location.

Kidney Transplant

Patients gain flexibility to travel.

Cost

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

$

Treatment costs usually are covered by insurance or Medicare. Patients with End-Stage Renal Disease may be eligible for ESRD Medicare upon initiation of home peritoneal dialysis. Prescription medications may be covered under Medicare Part D. Please contact your social worker for additional questions.

Home Hemodialysis

$

Treatment costs usually are covered by insurance or Medicare. Patients with End-Stage Renal Disease may be eligible for ESRD Medicare upon initiation of home hemodialysis training. Prescription medications may be covered under Medicare Part D. In-home helpers are not covered under Medicare. Please contact your social worker for additional questions.

In-Center Hemodialysis

$$

Medicare coverage usually starts the first day of the fourth month of your dialysis treatments. Prescription medications may be covered under Medicare Part D. Please contact your social worker for additional questions.

Kidney Transplant

$*

Insurance may cover costs of post-transplant prescription medications. Most transplant recipients are eligible for End-Stage Renal Disease Medicare for at least three years. Patients are encouraged to contact their pharmacy plan for coverage and co-payment details. Please contact your social worker for additional questions.

Frequency

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

Receive treatment more often.

Treatments are usually shorter amounts of time.

Patients have monthly reviews with the care team.

Home Hemodialysis

Receive treatment more often.

Treatments are usually shorter amounts of time.

Patients have monthly reviews with the care team.

In-Center Hemodialysis

Receive treatment less often.

Treatments are usually longer amounts of time.

Patients have monthly reviews with the care team.

Kidney Transplant

If a compatible living donor is not available for a kidney transplant, your name may be placed on the kidney transplant waiting list to receive a kidney from a deceased donor. The wait could be three to five years if you are waiting for a deceased donor.

Travel

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

Patients have access to dialysis equipment that can be used for travel.

Home Hemodialysis

Patients have access to dialysis equipment that can be used for travel.

In-Center Hemodialysis

When planning to travel, patients are required to contact their social worker ahead of time in order to arrange treatments at their travel location.

Kidney Transplant

Patients gain flexibility to travel.

Procedures

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

A peritoneal catheter is placed in the abdomen.

Home Hemodialysis

A vascular access (fistula or graft) is placed in arm.

In-Center Hemodialysis

A vascular access (fistula or graft) is placed in arm.

Kidney Transplant

A healthy kidney is placed in the lower abdomen. A vascular access (fistula or graft) may also be placed as a temporary treatment method while waiting for a healthy kidney.

Side Effects

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

Possible weight gain

Home Hemodialysis

Possible low blood pressure
Possible muscle cramps
Possible fatigue

In-Center Hemodialysis

Possible low blood pressure
Possible muscle cramps
Possible fatigue

Because in-center treatment is less frequent than home treatment, patients may experience more side effects.

Kidney Transplant

Possible high blood pressure
Possible osteoporosis
Possible on-set or worsening of diabetes

Some side effects can be temporary, long-lasting or may vary with medication dosages.

Diet-Liquid

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

Treatment that is more frequent may allow increased flexibility.

Home Hemodialysis

Treatment that is more frequent may allow increased flexibility.

In-Center Hemodialysis

Treatment that is less frequent may limit flexibility.

Kidney Transplant

Patients gain back flexibility.

Medications

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

Treatment that is more frequent may require less medications.

Home Hemodialysis

Treatment that is more frequent may require less medications.

In-Center Hemodialysis

Treatment that is less frequent may require more medications.

Kidney Transplant

Kidney transplant patients require additional anti-rejection medications.

Possible Risks

WHICH END-STAGE RENAL DISEASE TREATMENT OPTION IS RIGHT FOR ME?

Peritoneal Dialysis

Possible catheter problems
Possible hernias

Home Hemodialysis

Possible access (fistula or graft) problems
Possible risk of infection

In-Center Hemodialysis

Possible access (fistula or graft) problems
Possible risk of infection

Kidney Transplant

Possible risk of the transplanted kidney to have delayed function, no function or rejection from the body at any time
Possible surgical complications
Possible risk of infection
Possible risk of original kidney disease to happen again

Smoothing Transitions

Healthy Transitions

Initial Management	Intervention Group %	Control group %	*P* value
Peritoneal dialysis	23	3	.05
Outpatient HD center	58	23	.029
Pre-emptive Transplant	13	3	NS
Mature AVF/ AVG	52	28	NS

Steven Fishbane, MD, Hofstra Northwell School of Medicine, Great Neck, NY
Kidney Week Abstract TH-OR039. Presented November 17, 2016.

Proposed Models

Models	1 (FP/Specialty + CM)	2 (FP/Specialty + CM + Allied Health Team)	3 (Specialty Clinic)	4 (Subspecialty Clinic)
Description	FPs ± specialist MD(s) supported by a care coordinator in managing patients with the selected cluster of diseases	FPs ± specialist MD(s) supported by a care coordinator and allied health team to manage patients with the selected cluster of diseases	Specialist MD(s), care coordinator, and allied health team provide consultation services and/or share care with FPs for patients with the selected cluster of diseases	Subspecialist MD(s), specialist MD(s), care coordinator, and allied health team provide consultation services and/or share care with FPs for patients with the selected cluster of diseases
Location	Virtual network FP ± specialist MD offices On or off-site care coordinator	Virtual network FP ± specialist MD offices Off-site care coordinator Off-site allied health team	Common location (clinic) for review of patients	Common location (clinic) for review of patients
Access to care coordinators	CM has specialty expertise in disease cluster			
Access to allied health	Usual access through CM as required		Partial or full team with specialty expertise	
Access to specialist MDs	May be available in the community or accessible via scheduled visits to the community and/or telehealth		Available in the community	
Access to subspecialist MDs	May be accessible but not available in the community		May be available in the community or accessible via scheduled visits to the community and/or telehealth	Available in the community
Access to group education	Refer to relevant existing hospital and/or community-based education sessions; possibility of web-based or telehealth education sessions		On-site group education available that is specific to disease cluster, lifestyle, and/or self-management Refer to relevant existing hospital and/or community-based education sessions	
Use of evidence-based protocols	Includes use of standardized tools for data collection			
Individual care plan available	Full or partial electronic care plan and electronic health record			
Focus on risk reduction	Individual and group level			

M. Beaulieu M, Levin A, Analysis of Multidisciplinary Care Models and Interface With Primary Care in Management of Chronic Kidney Disease. Seminars in Neph Vol 29, Issue 5, September 2009, Pages 467–474

Accountable/Valued Care at each level of the pyramid

- Define and involve the population – patients and families
- Redesign care services across sites
- Manage population health
  - systems integration- including efficient referral networks
  - equitable and efficient resource allocation
  - knowledge management
- Manage the financial system across sites

Improve Outcomes and Add Value

Develop flexible partnerships with PCP, Specialists and Community Services

- Establish direct connectivity
- Define evidence based guidelines for the care of people with acute and chronic disease
- Help define efficient and effective processes to ensure the guidelines are
  - easily accessed
  - integrated into practice flow
  - monitored to assess success (outcomes, compliance)

Build a network of providers whose roles transition with the needs of the patient.

CKD 0-2

PCP
Best Practice
Protocols designed collaboratively with specialists to manage risks for progression of CKD & monitor

CKD 3

PCP
Coordinated care with Nephrologist & Nephrology Team
Protocols and processes to manage risks for CKD progression, complications of CKD, renal replacement education, access planning & monitoring

CKD 4

Coordinated care shifts from the PCP to the **Nephrologist & Nephrology Team** taking the lead

CKD 5

Dialysis
&
Transplant

Coordinated care **Nephrologist & Nephrology Team** & PCP

Must Connect the System
Create an Extended Multidisciplinary Team

Understand and Utilize/Enhance the Capacity and Capabilities of Inpatient and Outpatient Facilities/Practices/Resources

Tertiary  Community

Using technology to stay connected

Connected Care Domains

Service Lines

Live Video (Synchronous)

- Live, two-way interaction between a person and a provider using audiovisual telecommunications technology.

Store-and-Forward (Asynchronous)

- Transmission of recorded health history through an electronic communications system to a practitioner, usually a specialist, who uses the information to evaluate the case or render a service outside of a real-time or live interaction.

Remote Patient Monitoring (RPM)

- Personal health and medical data collection from an individual in one location via electronic communication technologies, which is transmitted to a provider in a different location for use in care and related support.

Platforms (*)

Mobile Health (mHealth)

- Health care and public health practice and education supported by mobile communication devices such as cell phones, tablet computers, and PDAs.
- (*) Platfoms include Web, Mobile, Video & EHR

Transactions Across the Continuum of Care

AskMayoExpert ckd

Results Experts

Chronic Kidney Disease
Chronic Kidney Disease (Adult) – Patient Considerations – Complications

Non-ST Elevation Myocardial Infarction (NSTEMI)
Non-ST Elevation Myocardial Infarction (Adult) – Description – Diagnosis – Treatment – Patient Considerations

Anemia
Anemia (Adult) – Diagnosis – Treatment – Clinical Follow-Up

Calciphylaxis
Description – Diagnosis – Treatment

Proteinuria
Diagnosis – Treatment – Clinical Follow-Up – Patient Considerations – Complications

Autosomal Dominant Polycystic Kidney Disease (ADPKD)
Description – Diagnosis – Treatment – Screening – Complications

Atheroembolic Renal Disease
Diagnosis – Treatment – Prevention – Complications

Nephroureterectomy
Indications and contraindications – Side Effects – Patient Considerations – Diagnosis – Clinical Follow-Up

Primary Hyperparathyroidism
Diagnosis – Treatment – Clinical Follow-Up

Hypocalcemia
Diagnosis – Treatment – Complications

1 2 3 4 Next ›

Chronic Kidney Disease

Care Process Models
Chronic Kidney Disease (Adult)

Additional Answers
Patient Considerations
Peripherally Inserted Central Catheters
Complications
Anemia

Chronic Kidney Disease (Adult)

This algorithm does not replace clinical judgment and should be modified as needed for individual patients.

Evaluation and Testing

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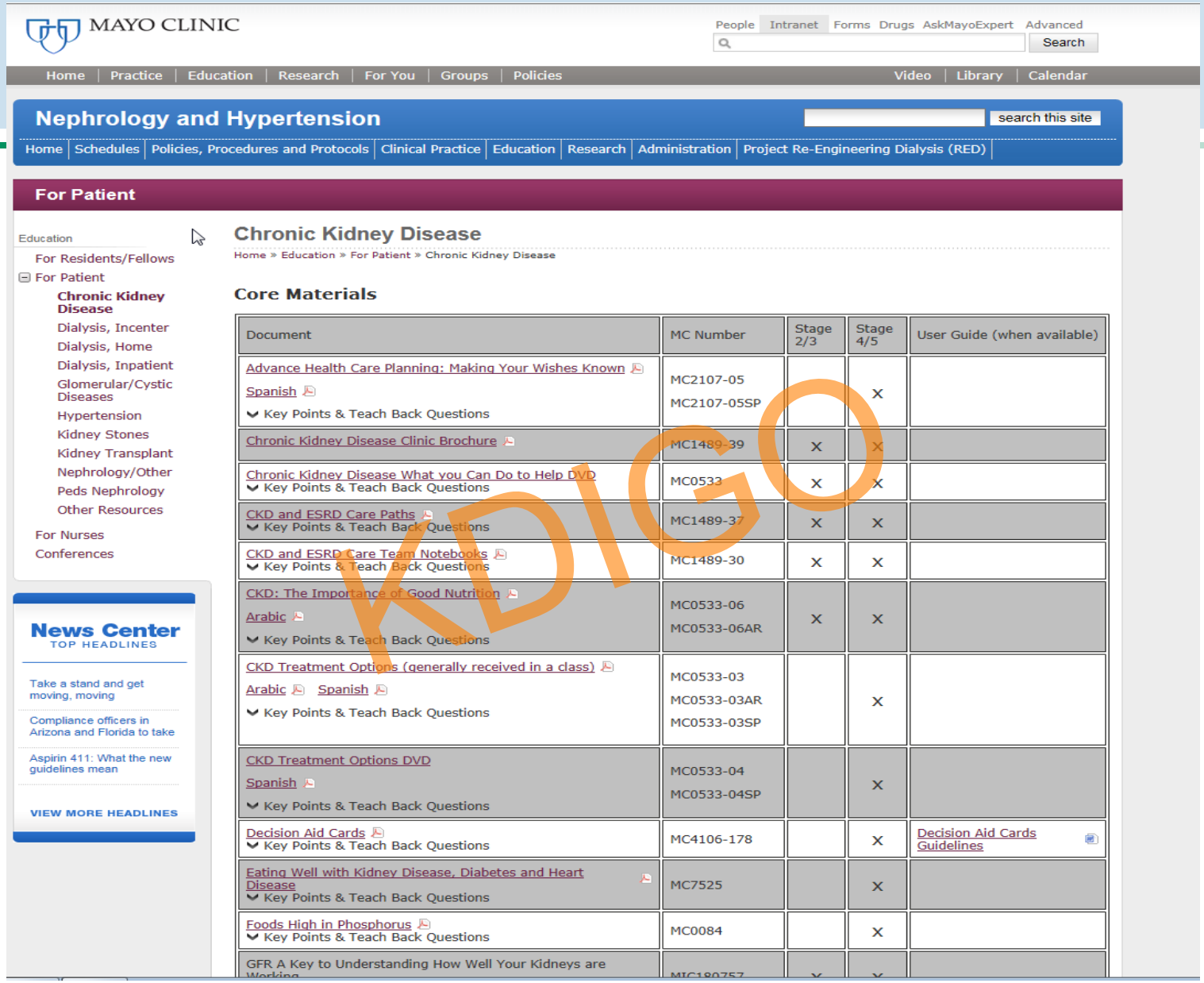
Originally published August 08, 2013
Last updated January 20, 2015



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For Patient

Education

- For Residents/Fellows
- For Patient
  - **Chronic Kidney Disease**
  - Dialysis, Incenter
  - Dialysis, Home
  - Dialysis, Inpatient
  - Glomerular/Cystic Diseases
  - Hypertension
  - Kidney Stones
  - Kidney Transplant
  - Nephrology/Other
  - Peds Nephrology
  - Other Resources
- For Nurses
- Conferences

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Take a stand and get moving, moving

Compliance officers in Arizona and Florida to take

Aspirin 411: What the new guidelines mean

VIEW MORE HEADLINES

Chronic Kidney Disease

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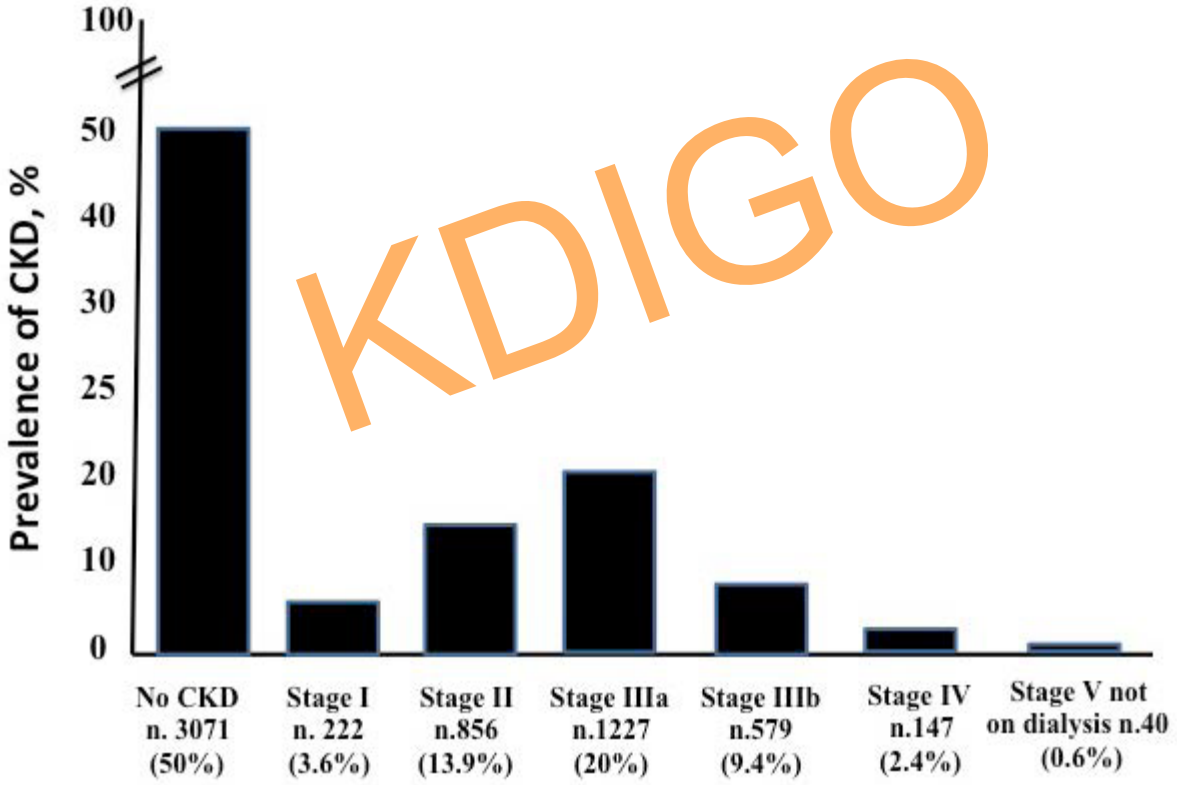
Core Materials

Document	MC Number	Stage 2/3	Stage 4/5	User Guide (when available)
Advance Health Care Planning: Making Your Wishes Known Spanish Key Points & Teach Back Questions	MC2107-05 MC2107-05SP		X	
Chronic Kidney Disease Clinic Brochure	MC1489-39	X	X	
Chronic Kidney Disease What you Can Do to Help DVD Key Points & Teach Back Questions	MC0533	X	X	
CKD and ESRD Care Paths Key Points & Teach Back Questions	MC1489-37	X	X	
CKD and ESRD Care Team Notebooks Key Points & Teach Back Questions	MC1489-30	X	X	
CKD: The Importance of Good Nutrition Arabic Key Points & Teach Back Questions	MC0533-06 MC0533-06AR	X	X	
CKD Treatment Options (generally received in a class) Arabic Spanish Key Points & Teach Back Questions	MC0533-03 MC0533-03AR MC0533-03SP		X	
CKD Treatment Options DVD Spanish Key Points & Teach Back Questions	MC0533-04 MC0533-04SP		X	
Decision Aid Cards Key Points & Teach Back Questions	MC4106-178		X	Decision Aid Cards Guidelines
Eating Well with Kidney Disease, Diabetes and Heart Disease Key Points & Teach Back Questions	MC7525		X	
Foods High in Phosphorus Key Points & Teach Back Questions	MC0084		X	
GFR A Key to Understanding How Well Your Kidneys are Working	MIC180757	X	X	

Connected Care

Prevalence of renal damage (Stage of CKD) in 6,142 patients with type II Diabetes enrolled in the Study



Stefano Bianchi FR-OR017 ASN Kidney Week, Chicago 2016

Smooth Transitions
Standardization-Collaboration-Communication

- Consistent integrated flow of information
- Standardization of care & care team members' roles – including the patient
- Expanded CKD/ESRD team

Comprehensive CKD Care Model
Nephrologists as the Captain

Concept: Integration across medical settings and disease phases, captained by nephrologists, will improve care quality and patient outcomes in late-stage chronic kidney disease (CKD) through renal replacement therapy and/or end-of-life care.

Comprehensive CKD Care Model
Nephrologists as the Captain

Goal: Develop a CMMI pilot program to test an integrated kidney care delivery model led and implemented by nephrology practices that encompasses the spectrum of advanced kidney disease including late-stage CKD, dialysis, transplantation and post-transplant care, full access to palliative care and transition to hospice care when appropriate.

Comprehensive CKD Care Model
Nephrologists as the Captain

- Manage and slow the progression of kidney disease and other complex chronic conditions common in patients with advanced kidney disease
- Prepare for, and manage care transitions to
  - maximize patient satisfaction
  - improve outcomes
  - optimize shared-decision making
  - reduce costs
- coordinate care and educate patients and caregivers about treatment choices (transplant, Dialysis, Conservative care)

Comprehensive CKD Care Model Nephrologists as the Captain

1. What expertise is needed in the CKD care model?
2. What are the patient population(s) that would benefit from being in the CKD care delivery model?
3. What is the relationship and role of the primary care physician and subspecialists?
4. What are the patient care needs that the CKD care model should address? (Services to be included)
5. What are the goals of the model and how will they be measured?
6. What model design would best facilitate the goals?

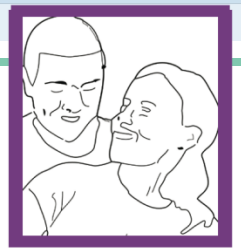
Impact for Nephrologists Based on Model

Our Responsibility

Enhance the delivery of patient-centered, high valued care through

- Developing new patient centered, collaborative, seamless care models
- Research and discoveries for translation to inform best practices
- Knowledge transfer and education
- Establishing appropriateness criteria for tests, therapies and procedures
- Defining/influencing metrics for monitoring value of care
- Influencing public policies
- Teaching multidisciplinary patient-centric team-based care

$$\text{Value} = \frac{\text{Quality}\ (\text{outcomes, safety, service})}{\text{Cost}}$$



MELISSA (F)
AGE 31
CKD TO ESRD (FISTULA)
BUSINESS WOMAN
DATING

NARRATIVE

I started in the Diabetic Nephropathy Clinic a couple years ago. I'm an ESRD patient now. They placed a catheter for PD and I was able to start doing home PD. That worked for a couple years, but now I've had to change to home HD. My boyfriend comes to every appointment with me and helps me at home. I don't have any other health problems now, so its much easier to manage. Now I have a steady routine and my care team is really pleased with me. I have been able to work and nothing can stop me. I don't know what I would do in the future if I had to change anything again.

"YOU JUST HAVE TO BE OPTIMISTIC."

INFLUENCERS

- Shared Decisions
- Collaboration
- Communication
- Education
- Relationships