

## Supplementary Online Content

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**eTable 1.** Normalization of Vignette Photos

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This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1. Normalization of Vignette Photos**

	African-American Woman Photo Median (Interquartile Range)		White Woman Photo Median (Interquartile Range)		
Age	65.00	(60.00 , 70.00)	65.00	(60.00 , 68.00)	
Healthy	4.00	(2.10 , 6.00)	3.60	(2.00 , 5.30)	
Attractive	5.00	(3.70 , 6.30)	4.80	(3.00 , 6.00)	
Intelligent	6.00	(5.00 , 7.00)	6.00	(5.00 , 7.00)	
Trustworthy	5.90	(5.00 , 7.00)	5.90	(5.00 , 7.00)	
Neutral	6.00	(4.60 , 7.80)	6.00	(5.00 , 8.00)	
Happy	3.00	(1.55 , 4.70)	3.20	(1.50 , 5.00)	
Sad	5.00	(2.90 , 6.60)	5.10	(2.90 , 6.80)	
Threatening	3.70	(1.50 , 6.00)	3.00	(1.20 , 5.60)	

Values represent estimated patient age and Likert scale ratings (1-10, strongly disagree to strongly agree) among international participants (n=771 African-American woman, n=829 White woman) who were randomized to photos selected for these vignettes in a separate study conducted by (KB, SS, LL, KHT, LZ). Participants were told that the patients had heart failure.

**eTable 2. Patient Vignettes**

Patient Vignette headshot photo inserted here. Photos are available upon request.

<p><b>History of Present Illness:</b> Ms. Keisha Jones is a 63 year old Non-Hispanic African-American woman---OR--- Ms. Kelly Jones is a 63 year old Non-Hispanic White woman ---OR---Mr. Jamal Jones is a 63 year old Non-Hispanic African-American man ---OR--- Mr. Greg Jones is a 63 year old Non-Hispanic White man with a history of dilated non-ischemic cardiomyopathy (left ventricular ejection fraction 20%, Left Ventricle End Diastolic Dimension 7.5cm), chronic kidney disease stage III (Cr 1.8mg/dL, GFR 42 ml/min/1.73m2*L), diabetes (HgbA1c 7.5%), depression, and moderate asymptomatic peripheral arterial disease who has had 4 hospitalizations in the past 6 months for acute on chronic heart failure exacerbation. She ---OR--- He experiences dyspnea and lightheadedness walking across the room (5 feet). She ---OR--- He has been shocked for ventricular tachycardia once in the past 12 months.</p>
<p><b>Height/Weight/Body Mass Index:</b> 178 cm (5 feet 10 inches) / 109 kg (240lb) / 34.4</p>
<p><b>Insurance Type:</b> Medicaid</p>
<p><b>Blood Type:</b> 0+ <b>PRA Class I:</b> 0%, Class II: 10%</p>
<p><b>Cardiac History:</b></p> <ul style="list-style-type: none"><li>• Diagnosed 2017 with dilated non-ischemic cardiomyopathy</li><li>• 4 heart failure hospitalizations in the past 6 months</li><li>• LHC 2/2017: non-obstructive disease, 40% mid left anterior descending artery, 30% distal Left circumflex, 30% distal right coronary artery, left ventricular end diastolic pressure 35</li><li>• Single chamber Implantable Cardioverter Defibrillator 6/2017 with one documented episode of sustained ventricular tachycardia responding to defibrillation, several non-sustained ventricular tachycardia events no longer than 10 seconds</li><li>• No prior cardiac surgery</li></ul>
<p><b>New York Heart Association Functional Class:</b> III-IV <b>Vital Signs:</b> BP 85/62, HR 110, Respiratory Rate 15, Pulse Ox 98% room air</p>
<p><b>Medications:</b> asa 81mg daily, spironolactone 25mg, bumex 4mg twice a day, glargine 30units nightly, lispro 10units three times a day before meals plus sliding scale, sertraline 50mg daily, atorvastatin 40mg nightly, intolerable of angiotensin converting enzyme inhibitors/ angiotensin receptor blocker/ angiotensin receptor-neprilysin inhibitor/ Beta blockers due to hypotension</p> <p><b>Allergies:</b> none</p>
<p><b>Past Other Medical History:</b></p> <ul style="list-style-type: none"><li>• Chronic Kidney Disease Stage III (Baseline Cr 1.8mg/dL, 42 ml/min/1.73m2*L)</li></ul>

- Diabetes Mellitus II (HgbA1c 7.5%) on insulin for past 5 years (no retinopathy nor neuropathy)
- Peripheral arterial disease found during work-up: Right Ankle brachial index moderate 0.70, monophasic posterior tibial and dorsalis pedis, Normal Left ankle brachial index, <50% stenosis right carotid, 70% stenosis left carotid
- Depression controlled on sertraline
- Obesity

**Past Surgery:**

None

**Social History:** lost job working for United Postal Services 6 months ago due to worsening heart failure symptoms, has a 10 year old and 15 year old living at home, seeking disability insurance, has one vehicle for the family, final year of education was 10<sup>th</sup> grade

**Marital Status:** married, spouse is working full-time as a retail clerk

**Tobacco:** never

**Ethanol:** occasional beers on special occasions

**Recreational Drug Use:** remote marijuana use when 20+ years of age

**Adherence:** Lost to follow-up for a couple years when she –OR–he did not have healthcare insurance. Missed last 2 consecutive appointments due to car trouble otherwise follows regularly. Appears to take medications as prescribed. Typically calls when medications run out. Does not understand the reasons for taking each medication. Occasional dietary indiscretions.

**Cardiac Diagnostic Testing:**

**Left Heart Catheterization:** (2/2017) non-obstructive disease, 40% mid left anterior descending artery, 30% distal Left circumflex, 30% distal right coronary artery, left ventricular end diastolic pressure 35

**Transthoracic Echocardiogram:** (3/2018) severely dilated left ventricle with global left ventricular dysfunction (Left Ventricular Ejection Fraction 20%, Left Ventricle End Diastolic Dimension 7.5cm), mildly dilated right ventricle with mildly reduced function (Tricuspid annular plane systolic excursion 19 mm), mild mitral regurgitation, mild tricuspid regurgitation, mild aortic regurgitation, right ventricular systolic pressure 40mmHg

**Cardiopulmonary Exercise Test:** (3/2018) peak V02 8.2ml/kg/min, VE/VC02 46, RER 1.3

**6min walk:** 175 meters

**ECG:** sinus tachycardia, left anterior fascicular block (QRS 120ms)

<b>Right Heart Catheterization:</b>	<b>No continuous drips:</b>	<b>Nitroprusside 1mcg/kg/min:</b>
Central Venous Pressure	9	
Pulmonary Artery (systolic/diastolic/mean)		
Wedge	56/25/35	35/10/20
Pulmonary Artery Saturation	30	15
Fick Cardiac Output/Cardiac Index	30%	38%
Pulmonary Vascular Resistance	3.31/1.46	3.75/1.66
Systemic Blood Pressure	1.51	1.33
	86/60	78/50

**Pulmonary:**

**Pulmonary Function Test:** FEV1 3.18 (94% predicted), FVC 4.37 (88% predicted), FEV1/FVC 73%, DLCO normal. Normal spirometry

**General Laboratory: (4/2018)**

Complete Blood Count: white blood cell 7.5 K/MM3; Hemoglobin 11 g/dL; platelet 210 K/MM3  
 Chemistry: Sodium 125 mmol/L; Potassium 4 mmol/L; Chloride 99mmol/L; CO2 28 mmol/L;  
 BUN 40 mg/dL; Creatinine 1.8 mg/dL; Glucose 150 mg/dL  
 Liver: AST 41 U/L, ALT 56 U/L, alkaline phosphatase 35 U/L, total bilirubin 3 mg/dL, albumin 2.8 gm/dL  
 Iron Studies: ferritin 250 ng/mL, transferrin saturation 20%  
 Coagulation: INR 1.2, PT 14 seconds  
 HgbA1c: 7.5%  
 TSH: 0.9mIU/L  
 Vitamin D 25OH: 50 ng/mL  
 Urine drug screen/ethanol/nicotine: negative  
 Urine albumin/creatinine ratio: 25mg/g  
 Renal ultrasound: medical-renal disease  
 Liver ultrasound: congestive hepatopathy  
 Liver biopsy: negative for cirrhosis

**Infectious Disease:**

Hepatitis A negative	CMV/EBV negative	HSV 1/2 negative/positive
Hepatitis B surface Antigen negative	Measles immune	Zoster negative
Hepatitis B surface Antibody negative	Mumps immune	HIV negative
Hepatitis C Antibody negative	Rubella immune	RPR negative
Coccidioidomycosis negative	Chagas negative	
Histoplasmosis negative	Quantiferon negative	

**Cancer Screens:**

**Colonoscopy:** hemorrhoids, diverticulosis last performed 2 years ago

**Mammogram:** normal (women patient)---OR--- **Prostate-specific antigen:** within normal limits (man patient)

**eTable 3. Additional Illustrative Quotes Representing Subthemes of Interviews**

<b>Central Phenomenon: Is the heart sick enough? Is the body well enough? Is there enough social/emotional support to make it through the process?</b>		
<b>Themes Subthemes</b>	<b>Vignette Type</b>	<b>Illustrative Quotations (Participant Race)</b>
<b>1. Forming an Overall Impression:</b>		
Neutral evaluations of appearance	African-American Man	...a middle-aged gentleman who doesn't appear to be obese. And he doesn't appear to be frail. He's well-groomed... I guess, that's about all I can say...he does not look jaundiced, looking at his eyes. He's wearing what looks to be a shirt with a fabric that's not threadbare. Okay, I guess that's enough profiling. (White man participant)
	African-American Woman	She's like any other person... Every patient I view as...what would I do if this [was] my brother, sister, mother, father, so that's my family... She's equally eligible if she meets all the criteria like any other person. (Minority man participant)
	White Woman	I mean I guess it's pretty tough to tell from a photo, but I guess I would say everyone's proven eligible. (Minority man participant)
Avoiding dwelling on photo appearance	African-American Man	I wouldn't make a decision based on a picture. (White man participant)
	White Man	I mean, just looking at a picture doesn't really derive in one way or another, unless I see markers of progressive end stage disease. (Minority man participant)
	African-American Woman	I wouldn't make any pre-assumptions [about the photo] before going into what her medical condition is and so on, and what her blood type, her size, and what her social situation is... (Minority man participant)
	White Woman	Just the photo? Nothing really. From a heart failure standpoint, it's nice to see she's not on oxygen... Well, I'm indifferent... just based purely on the photo, I don't really see anything. It [wouldn't] sway me one way or the other. (White man participant)
Clinical assessment of the photos for all	African-American Man	So, he looks a little bit on the older end of the age spectrum for patients who would maybe consider for heart transplantation... But otherwise, if I could just add one more thing, he looks fairly robust. So, a lot of times when we're evaluating somebody for advanced therapies, we always try to have a picture because a picture is often worth a thousand words. If you see somebody who looks very pale, frail, cachectic, temporal wasting that sometimes gets me some pause because they're often very deconditioned and may not do well... Definitely seeing somebody who look strong and robust is reassuring even if they're a little bit on the older end of the age spectrum. (Minority woman participant)

	White Man	He looks well for somebody with advanced heart failure as far as development. His color looks good... That's hard to say just by looking at somebody but he doesn't look that sick, so I wouldn't be able to make that decision based on the photo alone. (White woman participant)
	African-American Woman	She is probably middle-aged African-American, female. She looks a little fatigued, she has bags under her eyes, and so she's not sleeping well. I don't really appreciate much wasting based on the picture, like severe end stage cardiac temporal wasting. I don't have a great view of that though in this picture. I see her neck, it's fairly normal, I can't appreciate any vasculature yet. She looks well-kept. That's probably all I could really say from this. (White woman participant)
	White Woman	Well, when I look at the photo, I look for signs of cachexia, wasting, muscle loss, signs of psychiatric disease, hyperthyroidism. A well-kept person – haircut, makeup, or shaving for men, indicates possible ability to do the activities of daily living... it's hard when you were just given a piece of paper as opposed to when you're in the meeting and you've seen the patient, but we do evaluate a lot patients that we don't actually see ourselves. (White man participant)
<b>2. Identifying Urgency:</b>		
Urgency for all	African-American Man	It sounds like his clinical urgency is there, and it would just be a judgment call. (White man participant)
	White Man	...I think going straight to transplant would be more difficult for him given how sick he appears on paper. (White woman participant)
	African-American Woman	Everything in the first paragraph tells me this woman appears sick enough to need advanced heart failure therapies but I've seen nothing in this paragraph that would be a contraindication. (Minority woman participant)
	White Woman	I mean, she's not leaving the hospital, it's that simple. It's kind of like malpractice to discharge this lady with these numbers in my opinion, so she's leaving with something. (Minority man participant)
Women of both races appear to be equally sick	African-American Woman	Everything is pointing that she's got advanced heart failure and that needs to be addressed as soon as possible. Preferably a transplant straight unless she crashes and we need to kind of bridge her with VAD but preferably we could also bridge her with the short term temporary assist devices now and then get her to transplant as soon as possible. I don't see any red flags as to...why we shouldn't do that as quickly as possible. (Minority man participant)
	White Woman	So, in my mind right now, I'd still be willing to work for either advanced therapies, but I would definitely triage her to semi-rapid evaluation given the security of her illness, the severity of her heart failure. (White man participant)

3. Evaluating the Appropriateness of Prior Care for Women:		
Believing care was inappropriate for women	African-American Woman	Based on the information that I have now, I don't know why she wouldn't have been evaluated before. She looks like someone who should be on a waitlist for something, somewhere. (Minority woman participant)
	White Woman	It's a little surprising that it took that long for her to be diagnosed. Maybe she's just very stoic. And it also means she probably started to fall off the cliff in 2017 and when she got hospitalized a bunch of times. So unfortunately, the chance for her to get better, which is medications alone, seems to have already passed her by. (White woman participant)
4. Anticipating Challenges:		
Believing all groups are at increased risk	African-American Man	Is he a heart-kidney transplant candidate? Is he heart-lung candidate? Or we can take the risk with the durable VAD? (White man participant)
	White Man	This reinforces my decision for a VAD instead of a transplant at least at first because he's a big type O and he will have a long wait for transplant. (White woman participant)
	African-American Woman	...if we went the transplant route, she would likely need dual organ transplant, and she only has two years to qualify for that, so that would be a challenge. (Minority woman participant)
	White Woman	At age 63, so we start with age in thinking about LVAD or transplant. And age alone puts her in the category of looking at both.... the diabetes and the CKD will be an issue when it comes to thinking about transplant, because both of those can get a lot worse with the medications required for transplantation. Both of those give me pause in thinking about transplant. (White woman participant)
Concern for comorbidities (particularly PAD, CKD)	African-American Man	I think that it's not entirely clear cut. He is a fairly high-risk transplant candidate because his kidney function is borderline. So, one would have to be thinking about whether he could get away with a heart transplant alone or whether he would need a dual organ transplant with a heart and kidney and that obviously is an even more limited resource... (Minority woman participant)
	White Man	I think if this was my patient, I would really be strongly supporting the idea that he may need an LVAD soon, that I think we need to address all these other comorbidities as well, but that shouldn't stop him from being an eligible candidate because these are modifiable risks, except for the PAD portion. (Minority man participant)
	African-American Woman	I'm thinking that she is the usual 63-year-old who is not uncomplicated and has a number of comorbidities, including CKD and diabetes, depression, and PAD; but...there's nobody out there with no comorbidities... (White woman participant)

	White Woman	So now I'm seeing that she's on insulin. She's not going to get the heart transplant. Cause those patients tend to be a bit problematic even from an LVAD point of view. Obviously, from heart transplant...she is not the candidate anymore. It's going to be a problem. Again, the depression is also an issue and I'm saying it again. (White man participant)
5. Evaluating Trust and Making the Ultimate Recommendation:		
Trust is based upon interpersonal interactions and patient behavior	African-American Man	Sure. Yeah [I trust him]. He worked for the post office, that's pretty good. (White man participant)
	White Man	Trust? Over there is, like, I would say [that I'm] confident 80%. I'll probably say...he's really not being...compliant. Later on, he's been good. I think he potentially can be a good partner. (Minority woman participant)
	African-American Woman	Instinctively, yeah [I trust her]. She hasn't been a total model citizen with compliance but she sounds like she's been decent. (White woman participant)
		She works. She takes care of the kids. She has done everything appropriately. She seemed normal. She told us about her marijuana use. It looks like the only time she was lost was when she didn't have insurance or car trouble, so I would trust her. (Minority woman participant)
		I don't know this patient. I give everyone the benefit of doubt when I meet them especially new patients. So, you need to give me a reason not to trust you. So, yes, I trust her. (Minority man participant)
White Woman	So, do I...trust that she's going to be compliant with my therapy? In this short amount of time I would say, no... If she does good she comes back, she had compliance, she comes for her visits and she does well with the inotropes, she can manage the pump at home for the inotropes, then I...begin to trust her more. And I would feel better about pursuing the VAD. (White man participant)	
White Woman	I think that I don't fully trust that she's going to prioritize her healthcare needs at this point as number one or a close number two. I feel like if you have kids, you're always prioritizing your kids over everything else. But that being said, right up there with the kids, I think that we would have to work to get her to that point. But it's doable. (White woman participant)	
		I guess personally having never met the patient, which happens to us a lot of the time in the selection committee, you know it's hard for me to say if I trust the patient or not. What I can say is if medically they are a candidate...(Minority man participant)

Giving all groups the benefit of doubt in terms of adherence	African-American Man	A few red flags but nothing that would rule him out for candidacy. The reality of the US healthcare system is that often patients don't have adequate insurance, and that might be a reason why they do not seek medical care or lost to follow-up. (Minority woman participant)
	White Man	I think if the adherence was related to he just didn't want to show up, that might be different, but these are situations that a lot of patients face and it's not that they don't want to come to appointments, sometimes they don't know where to get the help to make that possible. (White woman participant)
	African-American Woman	<p>She's sort of an average citizen. She misses appointments if her car breaks down. Seems to take her meds, calls when her meds are running out, doesn't understand the reasons for taking each medication. Guess what? Most patients don't. Occasional dietary indiscretion, so she's human, so nothing raises any red flags to me. She's the average 63-year-old with lots of comorbidities... (White woman participant)</p> <p>I would not actually describe it [non-adherence] that way. I think that would be something that someone could put in her chart that would have negative repercussions moving forward... So, she had car trouble, maybe she called in and said, "My car couldn't start. I can't make it this time." That's a reason and that's not non-adherence, that's communicating to us that she had a problem with that. (White woman participant)</p>
	White Woman	<p>This is literally like all of our patients...they live in America. They have real lives. They have real troubles... Not everybody fits into the perfect box of candidacy. In fact, most of our patients don't fit into the perfect box of candidacy... There's nothing here that is just glaringly concerning to me. (Minority woman participant)</p> <p>She has a history of lost to follow up because she didn't have insurance. But, you know, we live in America, so what she going to do? But I think she would need to understand that that's not possible, right? Once she's been transplanted, we would need to make sure that she and her husband might be able to address the car trouble... (Minority woman participant)</p>
Inotropes to help kidneys prior to VAD for both women	African-American Woman	In this patient, we need to make a decision to list her for transplant or not or move on to LVAD. This is where she should go on inotropes...first of all, to make it better and prevent imminent death and to also clarify the issue I talked about earlier, about kidneys. (White man participant)
	White Woman	...putting her on inotropes and testing it to see if her renal function improves, that would be a helpful thing to know. (White woman participant)

LVAD indicates left ventricular assist device.

**eTable 4. Mean Survey Response for Each Vignette Category**

	African-American Man			African-American Woman			White Man			White Woman		
	Mean	(SE)	N	Mean	(SE)	N	Mean	(SE)	N	Mean	(SE)	N
<b>TREATMENT RECOMMENDATIONS</b>												
Heart Transplant	7.35	(0.49)	23	7.53	(0.59)	19	7.42	(0.52)	24	6.53	(0.61)	20
Bridge to Transplant VAD	8.21	(0.34)	24	8.11	(0.58)	19	7.70	(0.50)	23	7.78	(0.57)	20
Destination VAD	7.68	(0.56)	22	7.00	(0.77)	20	6.80	(0.57)	23	7.48	(0.63)	20
No Therapies	1.76	(0.23)	25	1.40	(0.18)	20	1.96	(0.26)	24	1.43	(0.25)	20
<b>FACTORS IMPACTING DECISION</b>												
HPI	9.04	(0.25)	25	9.45	(0.23)	20	9.34	(0.17)	25	9.33	(0.21)	20
Age	9.28	(0.24)	25	9.60	(0.22)	20	9.46	(0.15)	25	9.50	(0.27)	20
Race or Ethnicity	8.15	(0.59)	23	9.35	(0.48)	20	6.54	(0.69)	24	7.29	(0.88)	17
Sex	8.28	(0.53)	23	9.35	(0.48)	20	6.54	(0.69)	24	7.14	(0.84)	18
Height/Weight/BMI	7.52	(0.44)	25	8.40	(0.47)	20	6.98	(0.43)	25	8.08	(0.42)	20
Insurance	8.08	(0.44)	25	8.55	(0.56)	20	7.50	(0.35)	25	7.66	(0.75)	19
Blood Type & PRA	8.48	(0.41)	23	9.05	(0.51)	20	8.52	(0.34)	24	8.85	(0.48)	20
Cardiac History	9.44	(0.30)	25	9.75	(0.14)	20	9.65	(0.10)	23	9.85	(0.11)	20
NYHA & Vitals	9.64	(0.17)	25	9.65	(0.25)	20	9.87	(0.07)	23	9.75	(0.14)	20
Medications	9.50	(0.23)	24	9.70	(0.13)	20	9.35	(0.27)	23	9.25	(0.42)	20
Other Medical/Surgical History	7.56	(0.32)	25	8.70	(0.38)	20	8.42	(0.33)	24	8.73	(0.28)	20
Social History	7.32	(0.43)	25	8.20	(0.39)	20	6.65	(0.41)	23	7.65	(0.42)	20
Adherence	7.02	(0.39)	25	8.25	(0.36)	20	6.83	(0.39)	24	7.38	(0.38)	20
Cardiac Diagnostic	9.50	(0.20)	24	9.70	(0.13)	20	9.25	(0.19)	24	9.13	(0.32)	20
Pulmonary Studies	9.40	(0.24)	25	9.75	(0.14)	20	9.63	(0.12)	24	8.60	(0.35)	20
Laboratory test	8.56	(0.32)	25	8.95	(0.32)	20	8.94	(0.26)	24	8.53	(0.36)	20
Infectious Disease	9.20	(0.27)	25	9.90	(0.07)	20	9.29	(0.25)	24	9.35	(0.26)	20
Cancer Screening	9.44	(0.25)	25	9.80	(0.14)	20	9.42	(0.17)	24	9.05	(0.48)	20
Additional Studies	7.88	(0.63)	25	8.00	(0.64)	20	7.25	(0.70)	24	7.83	(0.57)	20

Survey results are compared from this study (N=46) and prior study of participants who completed interviews and surveys (N=44). Likert scores are 1 to 10, with 10 representing greatest support and 1 least support. BMI indicates body mass index; HPI, history of present illness; NYHA, New York Heart Association; PRA, panel-reactive antibody; SE, standard error; VAD, ventricular assist device.