

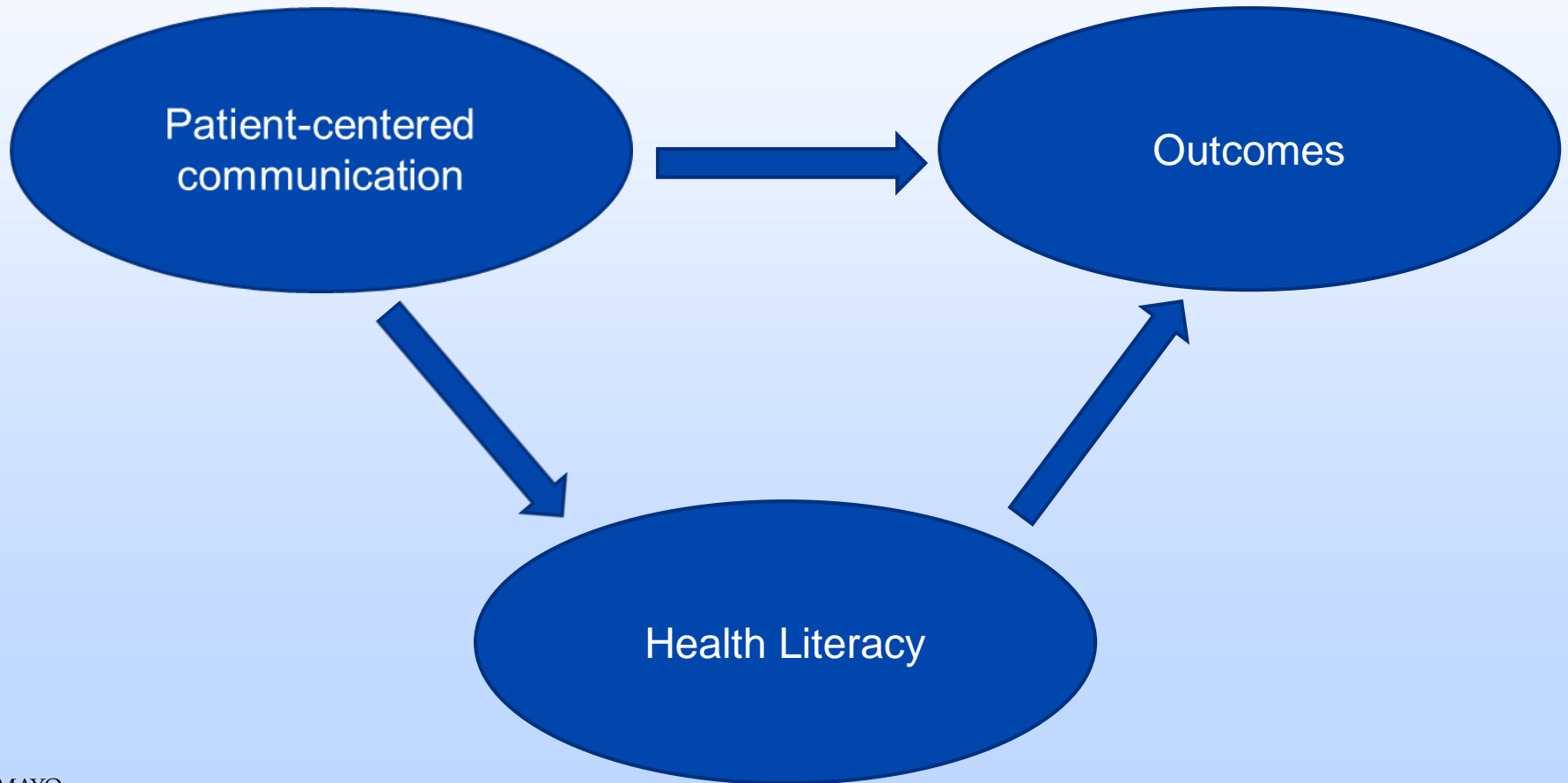


# Patient-centered communication, health literacy and outcomes in heart failure

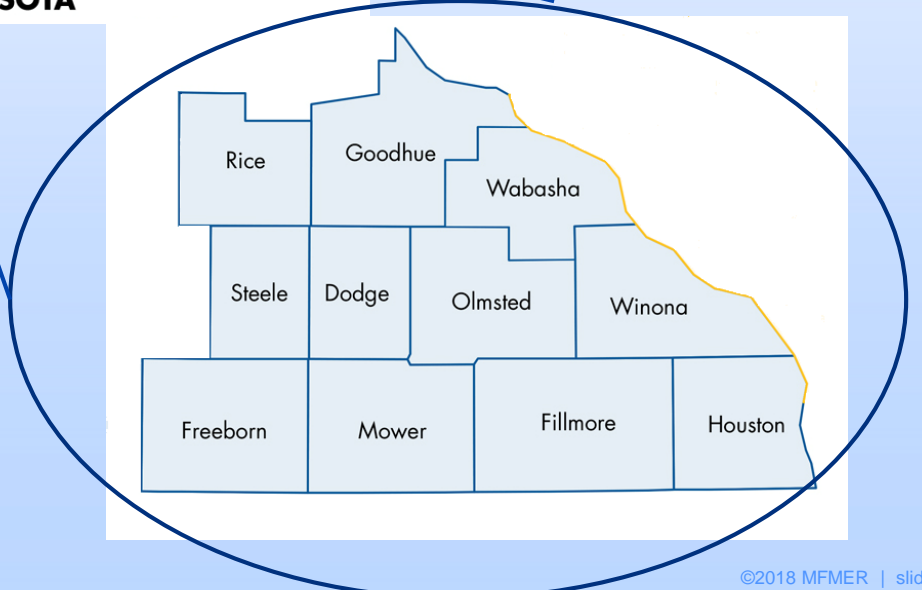
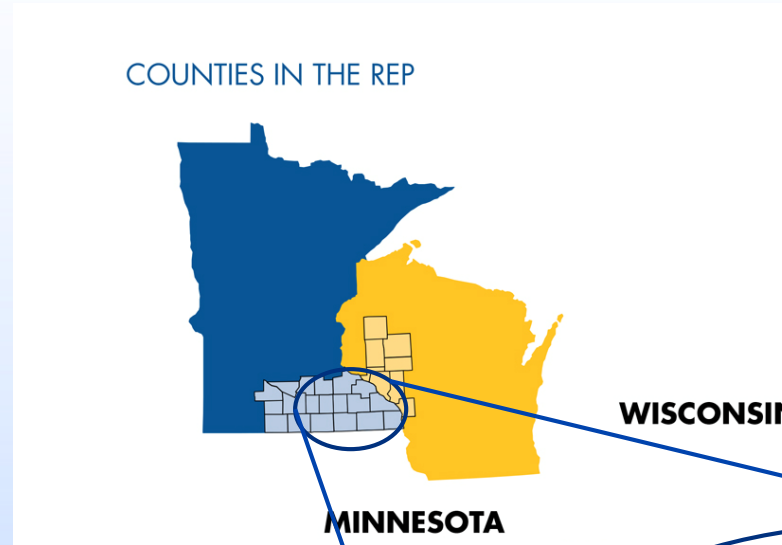
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# Hypothesis



# The Rochester Epidemiology Project (REP)



For more information,  
please visit  
[www.rochesterproject.org](http://www.rochesterproject.org)



# Methods

- Incident codes for Heart Failure (HF) between 01-2013 and 12-2015
- 11 counties region covered by the REP
- A survey was mailed to evaluate:
  - Patient-centered communication
  - Health literacy
  - Education
  - Marital status
- Comorbidity, hospitalizations and death were retrieved through the REP

# Patient-centered communication screener

<i>Over the past 6 months, to what extent:</i>	Not at all	A little	A moderate amount	Quite a bit	A great deal
<i>Has your doctor involved you as an equal partner in making decisions about illness management strategies and goals?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Has your doctor or other health care advisor listened carefully to what you had to say about your illness?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Has your doctor or other health care provider thoroughly explained the results of your tests you had done (e.g., cholesterol, blood pressure, or other laboratory tests)?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- Patient-centered communication measured through healthcare subscale of the CIRS (Chronic Illness Resources Survey)
- Three 5 points questions: total score 3-15
- Excellent (15 or 14), good (13 or 12) or fair (<12) communication

# Health literacy three questions screener

	Not at all	A little	Somewhat	A little bit	Extremely
<i>How confident are you filling out forms by yourself?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>How often do you have someone (like a family member, friend, hospital/clinic worker, or caregiver) help you read hospital materials?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>How often do you have problems learning about your medical condition because of difficulty reading hospital materials?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- Health literacy is measured through the 3 brief questions screener
- Three 5 points questions: total score 3-15

# Results

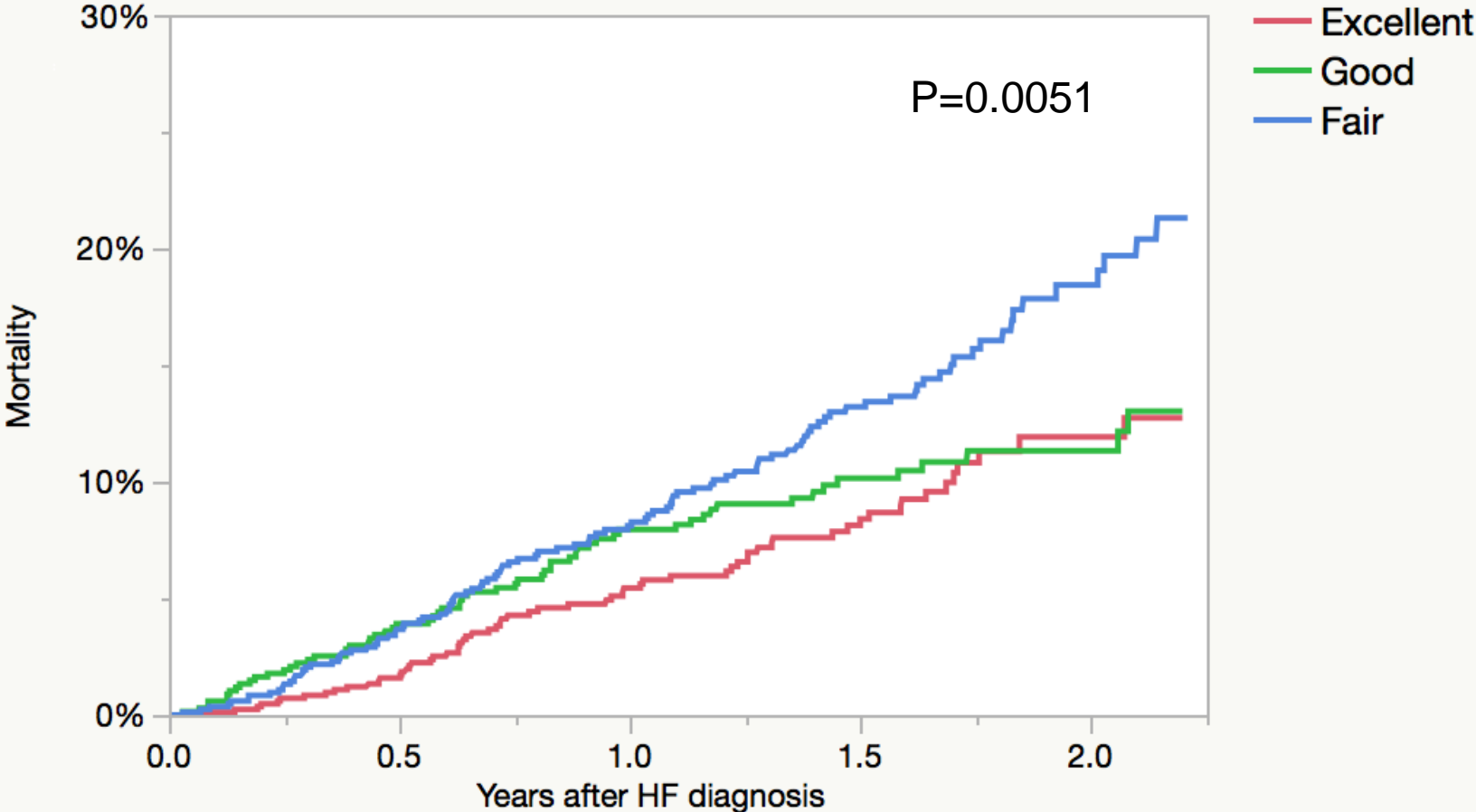
- Response rate: 44% (2573/5864)
- 2398 retained for analysis
- The median patient-centered communication was 12
- Patient with fair communication were:
  - Older
  - Lower education attainment
  - Lower health literacy score
- Mean follow-up: 15.4  $\pm$  7.3 months
- 233 deaths and 1194 hospitalizations

# Baseline Characteristics by patient-centered communication

Characteristics	Patient-centered communication			P value
	Fair (n=853)	Good (n=686)	Excellent (n=859)	
Age, mean (sd)	75.4 (12.0)	73.2 (13.1)	71.4 (12.4)	<0.001
Male	478 (56.0)	361 (52.6)	448 (52.2)	0.221
Education				<0.001
Less than high school	113 (13.3)	91 (13.3)	73 (8.5)	
High school graduate	322 (37.8)	238 (34.7)	285 (33.2)	
Some college/college degree	324 (38.0)	296 (43.2)	385 (44.8)	
Graduate degree	94 (11.0)	61 (8.9)	116 (13.5)	
Married	494 (57.9)	403 (58.8)	515 (60.0)	0.690
Charlson index				0.193
0	87 (10.2)	48 (7.0)	78 (9.1)	
1-2	340 (39.9)	266 (38.8)	330 (38.4)	
>=3	426 (49.9)	372 (54.2)	451 (52.5)	
Survey completed by mail	583 (68.4)	415 (60.5)	513 (59.7)	<0.001
Health literacy score, median (IQ)	12 (10-14)	12 (10-14)	13 (11-15)	<0.001



# Mortality by patient-centered communication



# Hazard Ratios (95% CI) for death by patient-centered communication

<b>Mortality (unadjusted)</b>	<b>HR</b>	<b>95% CI</b>	<b>P value trend</b>
Fair communication	1.00		0.002
Good communication	0.72	(0.53 – 0.99)	
Excellent communication	0.61	(0.45 – 0.84)	
<b>Mortality (adjusted)*</b>			
Fair communication	1.00		0.010
Good communication	0.73	(0.53 – 1.00)	
Excellent communication	0.67	(0.49 – 0.92)	

\*Adjusted for age, sex, Charlson comorbidities index, education, marital status and mode of completion

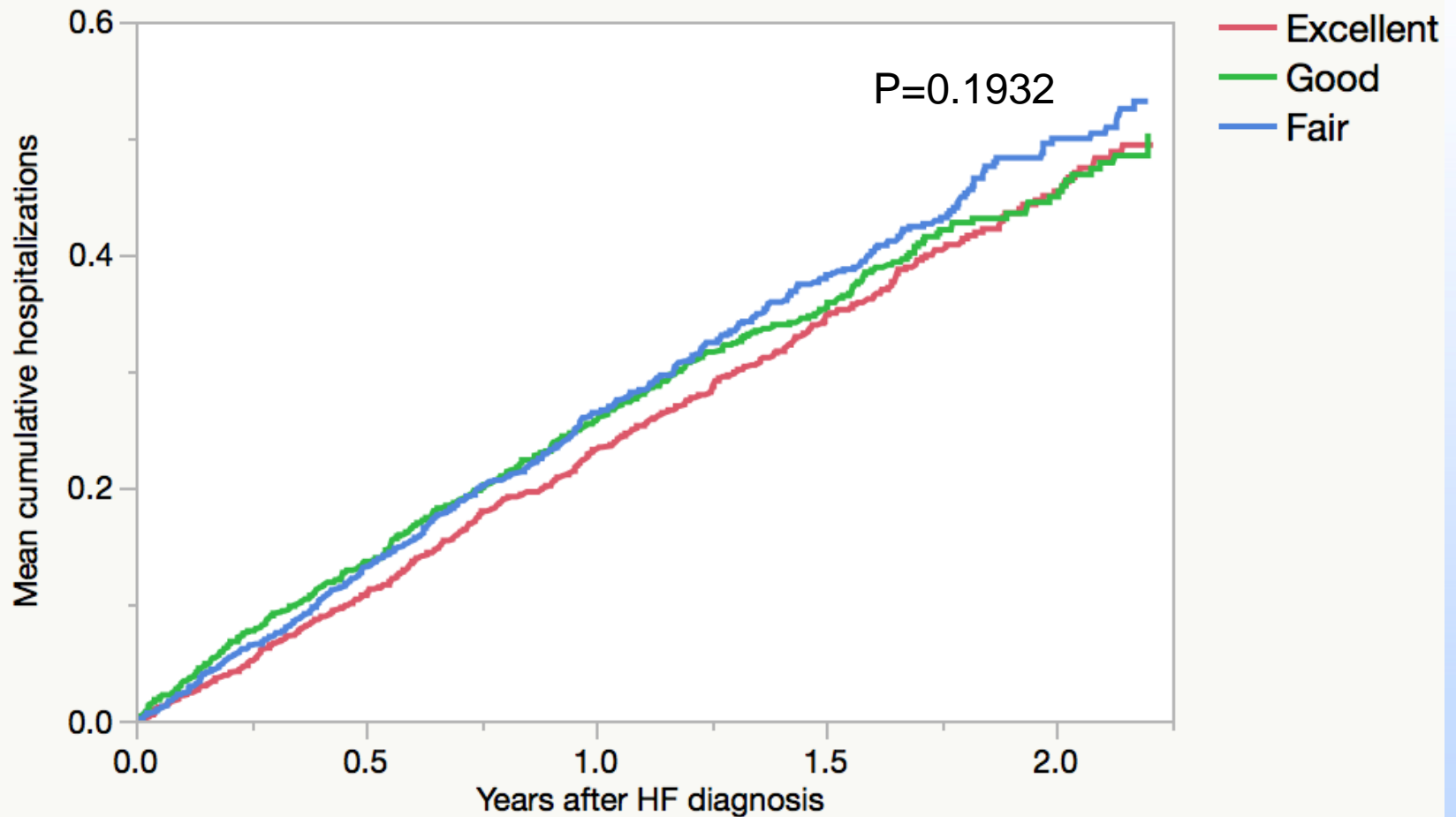
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Fair communication	1.00		0.010
Good communication	0.73	(0.53 – 1.00)	
Excellent communication	0.67	(0.49 – 0.92)	
<b>Mortality (adjusted)**</b>			
Fair communication	1.00		0.004
Good communication	0.67	(0.45 – 0.87)	
Excellent communication	0.63	(0.47 – 0.94)	

\*Adjusted for age, sex, Charlson comorbidities index, education, marital status and mode of completion

\*\* Adjusted for age, sex, Charlson comorbidities index, education, marital status, mode of completion and health literacy

# Mean cumulative hospitalizations by patient-centered communication



# Hazard Ratios (95% CI) for hospitalizations by patient-centered communication

<b>Hospitalizations (unadjusted)</b>	<b>HR</b>	<b>95% CI</b>	<b>P value trend</b>
Fair communication	1.00		0.238
Good communication	1.07	(0.85 – 1.34)	
Excellent communication	1.14	(0.92 – 1.42)	
<b>Hospitalizations (adjusted)*</b>			
Fair communication	1.00		0.524
Good communication	1.00	(0.80 – 1.25)	
Excellent communication	1.07	(0.86 – 1.34)	

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# Hazard Ratios (95% CI) for hospitalizations by patient-centered communication

<b>Hospitalizations (unadjusted)</b>	<b>HR</b>	<b>95% CI</b>	<b>P value trend</b>
Fair communication	1.00		0.238
Good communication	1.07	(0.85 – 1.34)	
Excellent communication	1.14	(0.92 – 1.42)	
<b>Hospitalizations (adjusted)*</b>			
Fair communication	1.00		0.524
Good communication	1.00	(0.80 – 1.25)	
Excellent communication	1.07	(0.86 – 1.34)	
<b>Hospitalizations (adjusted)**</b>			
Fair communication	1.00		0.227
Good communication	0.98	(0.85 – 1.13)	
Excellent communication	1.09	(0.95 – 1.25)	

\*Adjusted for age, sex, Charlson comorbidites index, education, marital status and mode of completion

\*\* Adjusted for age, sex, Charlson comorbidites index, education, marital status, mode of completion and health literacy

## Limitation

- Possible non-responders bias
- Limited external validity
- Residual confounding

## Strengths

- Population based cohort study
- Complete enumeration of outcomes through the REP
- Validated instruments
- Large sample size

# Conclusions

- After adjustment both excellent and good patient-centered communication are associated with reduced risk of death
- Our results suggest that interventions aimed at improving the patient-centered communication could improve mortality in patients with HF



Thank you for the attention