



2020 MHA Health Summit  
Measuring Outcomes for CAH Swing Bed Patients  
National Study

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### Background



- Approximately 1,182 CAHs (88%) provide swing bed services
- Medicare swing bed program allows rural hospitals with fewer than 100 beds to use IP beds for acute or SNF care
- Swing bed services provided in rural PPS hospitals are paid for under SNF PPS, while CAHs receive cost-based reimbursement
- PPS hospitals are required to collect patient data and report to CMS. CAHs are exempt, leaving them vulnerable to criticisms.
- Lack of quality data for CAH swing beds limits their ability to participate in alternative payment models for acute and post-acute services
- Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT) requires post-acute providers to submit standardized and interoperable patient assessment data that will facilitate coordinated care, improved outcomes, and overall quality comparisons, but does not include CAH swing beds

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### Purpose



The purpose of this study was:

- To identify measures that can be used to assess the quality of care provided to CAH swing bed patients
- To implement a field test of these measures
- To measure outcomes for CAH swing bed patients
- To compare patient outcomes in CAH swing beds and rural Skilled Nursing Facilities (SNFs)

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### Measuring Quality for Swing Bed Patients

- The University of Minnesota Rural Health Research Center team conducted an email survey with the State Office of Rural Health and Flex Program staff, a series of key informant interviews with CAH networks, CAHs and consultant groups, an online survey of CAH quality experts to develop the measure specifications for the Swing Bed program
- The study's selection of quality measures focused on outcome and functional status measures as respondents reported desire to
  - Assess whether CAH swing bed patients are getting appropriate care, help them return home as quickly as possible, and prevent hospital readmissions
  - Market CAH swing bed programs, allow CAHs to participate in alternative payment contracts, increase CAH swing bed patient volume, and compare the quality of CAH swing bed care to SNF care
  - Ensure that CAHs are in compliance with CMS intent and requirements regarding swing bed care

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### Measuring Quality for Swing Bed Patients



- Focusing on outcome and functional status measures aligns with the IMPACT Act of 2014 priorities, where CMS developed and implemented quality measures for post-acute. Among other measures, five quality domains were developed:
  - Skin integrity/changes in skin integrity
  - Functional status, cognitive function, and changes in functional and cognitive function
  - Medication reconciliation
  - Incidence of major falls
  - Transfer of health information and care preferences when and individual transitions

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### Measuring Quality for Swing Bed Patients

**Outcome Measure: Discharge of Swing Bed Patients to the Community**

**Table 5. CAH Swing Bed Patient Discharge Status**

Community	71.9%
SNF	13.3%
Acute Hospital	8.6%
Deceased	2.5%
Hospice	1.9%

*The purpose of the recommended discharge disposition measures is to assess whether a CAH swing bed program is successfully returning discharged patients to the community or prior residence.*

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### Measuring Quality for Swing Bed Patients



**Outcome Measure: 30-Day Follow-up Status after Swing Bed Stay**

**Table 6. CAH Swing Bed Patient Outcome Results (Non-risk adjusted)**

30-day hospital readmission rate after swing bed discharge	14.5%
30-day ED visit rate after swing bed discharge	9.3%

*The purpose of the recommended 30-day follow-up measures is to assess whether a CAH swing bed program is successfully preventing unplanned returns to a hospital*

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### Measuring Quality for Swing Bed Patients



MDS-based risk-adjusted functional status measures were chosen as they aligned with IMPACT goals; are approved by NQF for IRFs; have been adopted by CMS for other post-acute settings; detailed measure specification and risk-adjustment methods have already been developed; and their ability to allow comparison of outcomes.

**Self-Care**  
NQF endorsed measure #2633 uses MDS Section GG to address the following items:

- Eating
- Oral hygiene
- Toilet hygiene
- Shower/bathing
- Upper body dressing
- Lower body dressing
- Putting on/taking off footwear

All items are scored using a 1-6 rating scale based on level of dependence/independence required. Potential score range for the measure is 7 to 42



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### Measuring Quality for Swing Bed Patients




**Mobility**

NQF endorsed measure #2634 uses MDS Section GG to address the following items:

- Roll left and right
- Rise to lying
- Lying to sitting on side of bed
- Sit to stand
- Chair/bed to chair
- Ability to transfer to and from a chair (or wheelchair)
- Ability to get on and off a toilet or commode
- Car transfer
- Walk 30 feet
- Walk 50 feet with two turns
- Walk 150 feet
- Walk 30 feet on uneven surfaces
- One step (curb)
- 4 steps
- 12 steps
- Picking up an object from the floor

All items are scored using a 1-6 rating scale based on level of dependence/independence required. Potential score range for the measure is 15 to 90

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### Measuring Quality for Swing Bed Patients



**Risk Adjustments**  
 In order to compare CAH Medicare swing bed patients to other CAHs and other post-acute care settings such as SNFs, it is necessary to risk adjust the measures. Risk-adjustment elements are from MDS Section GG and other sections and include:

- Age group
- Primary medical condition
- Major surgery within 100 days prior to admission
- Prior level of dependence with regard to self-care, indoor ambulation and use of stairs
- Falls history
- Prior use of devices (walker, manual wheelchair, etc.)
- Presence and stage of pressure ulcer(s) at admission
- Cognitive abilities based on Brief Interview for Mental Status (BIMS) or memory/recall questions
- Communication impairment
- Urinary and bowel continence
- Tube feeding or total parenteral nutrition
- Comorbidities

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### Implementing the Field Test







The University of Minnesota Rural Health Research Center, Stroudwater Associates and Mary Guyot Consulting collaborated on the implementation of a field test




Nurses with extensive swing bed and quality improvement expertise provided training to relevant hospital staff



An Inter-rated Reliability process was accomplished with three patient scenarios that contained 82 items that required scoring. Overall, 88% of items were scored correctly. Follow-up support was provided to staff on specific issues related to risk adjustment and functional status details.



A web-based tool was developed to support data collection and reporting



The field test involved voluntary reporting from 133 CAHs in 14 states

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### Results of the Field Test



- Ran from April 1, 2018 through March 31, 2019
- 8,420 swing bed patient stays
- Average length of stay of 12.5 days
- Median length of stay of 10 days
- Patients were a chronically ill, elderly population with functional status need
- 2/3 of patients were over age 75
- 90% had insurance coverage from Medicare and Medicare Advantage
- Almost half had a medical condition (often complex) as primary reason for admission. Fractures and other multiple trauma and hip and knee replacement represented 25% the primary reason for admission
- Prior to current illness, approximately 1/3 were not independent in everyday activities; 60% used a walker; and 17% used a manual or motorized wheelchair

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### Results of the Field Test

Table 3. CAH Swing Bed Patient Characteristics

Age	88.2% over age 65
	64.4% over age 75
Residence prior to hospitalization that preceded swing bed stay	94.1% Community
	3.6% Nursing Home
Expected primary payer source for swing bed stay	90.2% Medicare or Medicare Advantage
	5.4% Commercial Insurance
	2.0% Medicaid
Primary medical condition (Most frequent categories)	27.9% Other Medical Conditions
	20.0% Medically Complex Conditions
	17.8% Debility, Cardiorespiratory Conditions
	12.5% Fractures and Other Multiple Traumas
	9.9% Hip and Knee Replacement
Had major surgery during 100 days prior to admission	34.4% Yes
Prior functioning independence	
• Self-care	62%
• Indoor mobility	70%
• Stairs	48.8%
• Functional cognition	62%
Prior device use	
• Manual wheelchair	14.6%
• Motorized vehicle or scooter	2.8%
• Walker	60.5%
• None of the above	3.6%

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### Results of the Field Test

Table 4. CAH Swing Bed Patient Risk Adjustment Characteristics

Had a fall in 6 months prior to admission	43.9%
Had at least one unhealed pressure ulcer at swing bed admission	9.6%
Makes self fully understood	80.2%
Clearly understands others	76.9%
Brief Interview for Mental Status (BIMS) summary score (0 to 15)	63.7% Cognitively intact (score 13-15)
	24.9% Moderately impaired (score 8-12)
	11.6% Severely impaired (score 0-7)
Always urinary continent	57.3%
Always bowel continent	74.8%
Tube feeding	1.3%
Parenteral nutrition	0.7%
Medical comorbidities	
• Diabetes	28.5%
• Chronic Ischemic Heart Disease	25.7%
• Major Infections	18.2%
• Dementia	10.8%

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### Results of the Field Test

Table 7. CAH Swing Bed Functional Status Results

Average non-risk adjusted improvement in patient self-care	7.2 units Based on 7 items with each item scored on a scale of 1-6 at admission and discharge (average overall patient self-care score at admission of 25.4)
Average non-risk adjusted improvement in patient mobility	19.7 units Based on 15 items with each item scored on a scale of 1-6 at admission and discharge (average overall patient mobility score at admission of 37.2)

**Self-Care:** There was a 28.3% improvement in patient's self-care score from admission to discharge

**Mobility:** There was a 53% improvement in the patient mobility score from admission to discharge

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**Results of the Field Test**

In order to compare the self-reported CAH swing bed patient outcomes, the data had to be risk adjusted. We adapted risk-adjustment methodologies used by CMS for facility-level change in readmission rates and functional status.

Hospital readmission rates were risk-adjusted for:

- Patient age
- Length of swing bed stay
- Primary diagnosis
- Comorbidities
- BIMS score
- Mobility score at discharge
- Self-care score at discharge
- Tube/parenteral feeding

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**Results of the Field Test**

Self-care and mobility scores were risk-adjusted for:

- Patient age
- Self-care score and mobility score at admission
- Primary diagnosis
- Major surgery during 100 days prior to admission
- Comorbidities
- BIMS score
- Bladder and bowel continence
- Prior use of devices and aids
- Falls history
- Tube/parenteral feeding

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**Results of the Field Test**

Three data sources were used for comparison of risk-adjusted outcome measures

- Field test data from 124 participating CAHs providing information on changes in functional status between admission and discharge for self-care and mobility as well as hospital readmission rates during their stay and 30 days after discharge. Data risk adjusted as described previously.
- CMS 2018 Nursing Home Compare data for SNFs located in rural counties as designed by HRSA provided hospital readmission rates after the hospitalization that resulted in a rural SNF stay. CMS SNF Quality Reporting Program Measures and Technical Information Brief provided information on changes in functional status between admission and discharges by self-care and mobility scores for all SNFs in US in 2018. This data was risk-adjusted by CMS.
- Using 2018 Medicare claims data, a large ACO management firm provided information on hospital readmission rates 30 days after discharge from a rural SNF for 521 SNFs participating in ACOs and located in rural counties as designated by HRSA in 12 states. These data are risk-adjusted using the CMS Hierarchical Condition Category (HCC) risk-adjustment model, which accounts for beneficiary age, sex, disability status, Medicaid enrollment and clinical conditions as measured by Hierarchical Condition Category (HCCs).

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### Results of the Field Test



**Table 8. Comparison of Risk Adjusted Hospital Readmission Results for CAH Swing Beds and Rural SNFs**

	CAHs in sample (n=124)	Rural SNFs* (n=4,250)	Rural SNFs** (N=521)
Hospital readmission rate during swing bed stay	5.0%		
30-day hospital readmission rate after swing bed discharge	13.6%		
30-day hospital readmission rate after hospitalization that resulted in rural SNF stay		21.1%	
30-day hospital readmission rate after rural SNF discharge			12.2%

\*Source: 2018 Nursing Home Compare data for SNFs located in rural counties as designated by HRSA  
\*\*Source: A large ACO management firm, based on 2018 Medicare claims data analysis for 521 SNFs participating in ACOs and located in rural counties as designated by HRSA

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### Results of the Field Test



**Table 9. Comparison of Risk-Adjusted Functional Status Results for CAH Swing Beds and U.S. SNFs**

	CAHs in sample (n=124)	U.S. SNFs* (n=15,304)
Change in self-care score	7.1	8.3
Change in mobility score	20.0	21.3

\*Source: CMS SNF Quality Reporting Program Measures and Technical Information Brief, 2018 data for all SNFs in the U.S.

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### Conclusion



- Relevant quality measures for CAH swing bed patients include outcome and functional status components.
- Relevant hospital staff were successfully trained to collect detailed information on the outcome and functional status measures as well as information on patient characteristics necessary for risk adjustment
- Based on multiple data sources, the overall risk-adjusted hospital readmission rate (during the swing bed stay and 30 days post discharge) for CAH swing bed patients of 18.6% was significantly lower than the overall risk-adjusted hospital readmission rate for rural SNF patients of 33.3%.
- The improvement in risk-adjusted changes in self-care and mobility scores were similar for CAH swing bed patients and all SNF patients in the U.S. Unfortunately, similar information just for rural SNF patients is not currently available on the CMS website.
- These results contribute to the development of a national evidence base that quantifies the cost and quality dimensions of CAH swing beds and allows fair comparisons with other rural post-acute care options such as SNFs.

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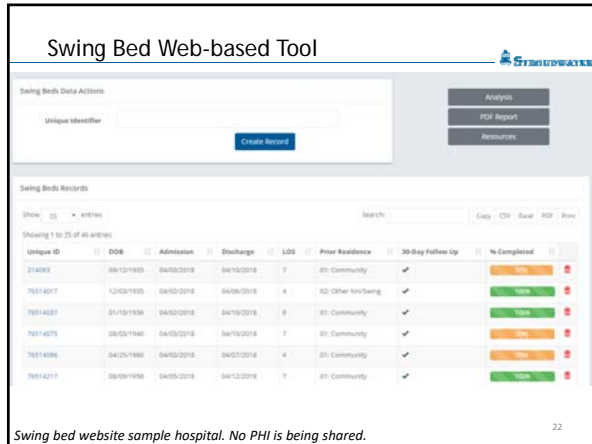
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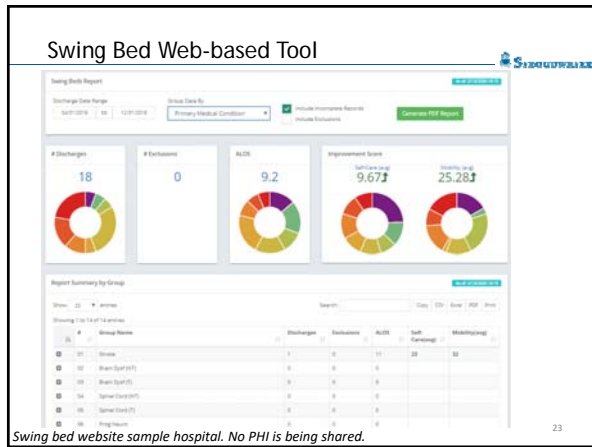
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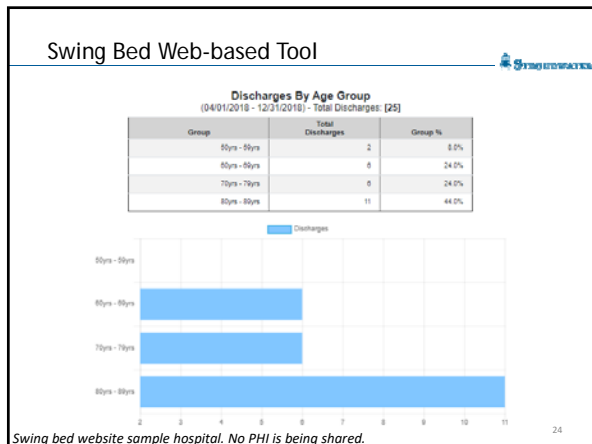
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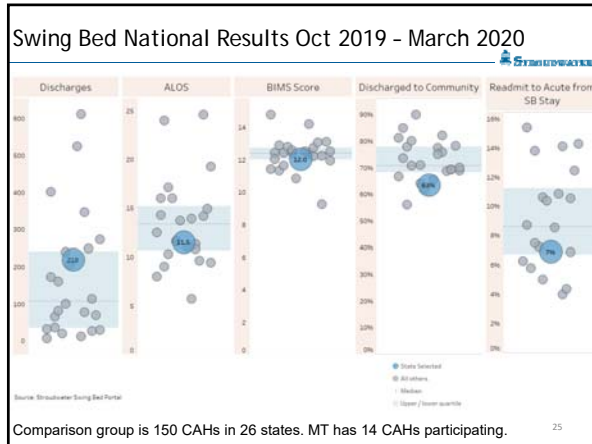
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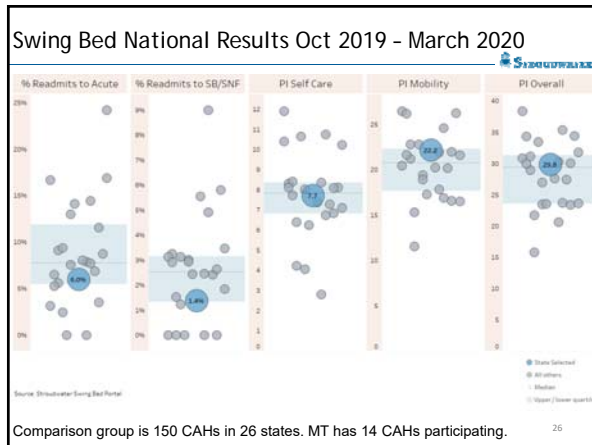
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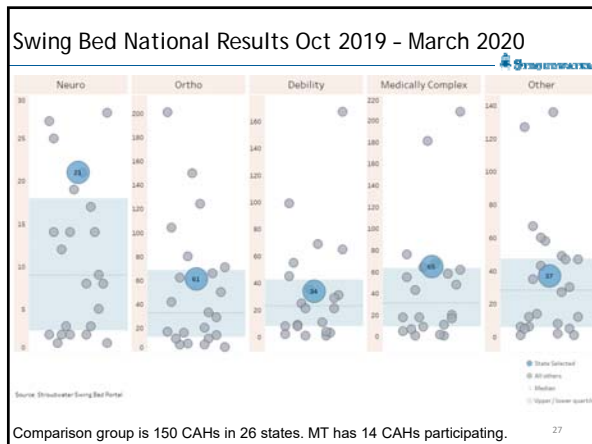
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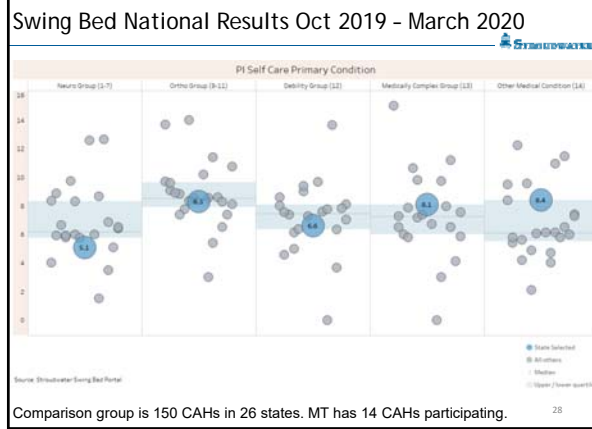
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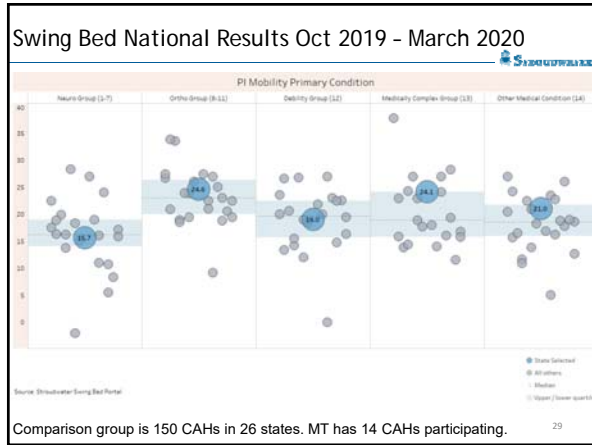
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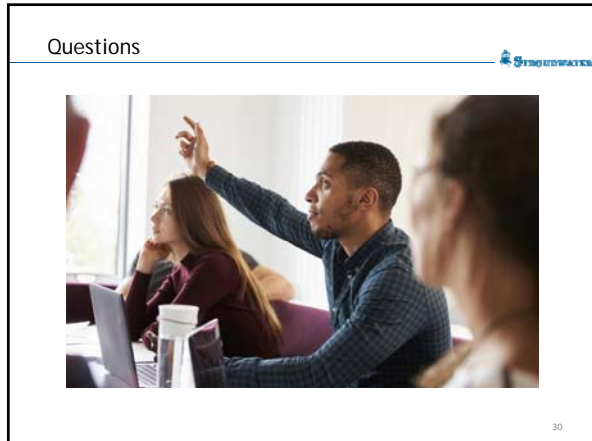
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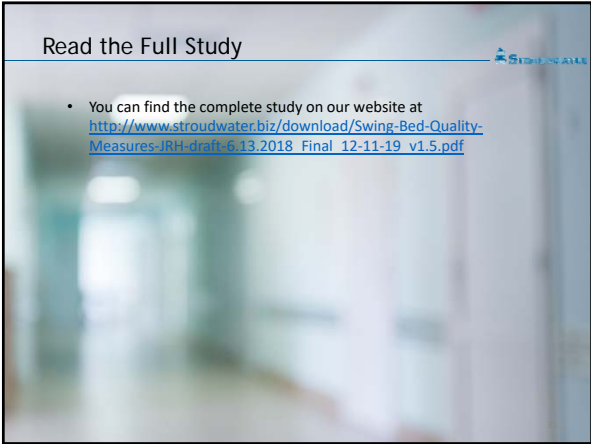
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Read the Full Study 

- You can find the complete study on our website at [http://www.stroudwater.biz/download/Swing-Bed-Quality-Measures-JRH-draft-6.13.2018\\_Final\\_12-11-19\\_v1.5.pdf](http://www.stroudwater.biz/download/Swing-Bed-Quality-Measures-JRH-draft-6.13.2018_Final_12-11-19_v1.5.pdf)



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