
HQI Annual Conference

Christine Martini-Bailey, RN, BSN
Associate Director
Health Services Advisory Group (HSAG)
November 12, 2015
Presentation Outline

• Understand the financial impact of HAIs.
  – Value-Based Purchasing safety domain
• Provide an overview of the TAP Strategy.
• Review how HSAG uses TAP reports to identify units with excess infections.
• Discuss the TAP catheter-associated urinary tract infection (CAUTI) assessments.
Nearly 25 percent of the nation’s Medicare beneficiaries

HSAG is the Medicare QIN-QIO* for Arizona, California, Florida, Ohio, and the U.S. Virgin Islands.

*Quality Innovation Network-Quality Improvement Organization
Meet the HSAG California HAI Team

Howard Pitluk
MD, MPH, FACS
Vice President
Medical Affairs
Chief Medical Officer
hpitluk@hsag.com
602.801.6950

Laurie Hensley
MHA, CPHQ
Quality Improvement Specialist
lhensley@hsag.com
818.858.3416

Jodi Roberts
RN, HACP
Infection Control Quality Improvement Specialist
jroberts@hsag.com
818.858.3414

Christine Martini-Bailey
RN, BSN
Associate Director
cbailey@hsag.com
614.307.2936
The Financial Impact of HAIs
Value-Based Purchasing Safety Domain
A Business Case For Quality

### Compliance-Based Payments

**WHAT**

- **Inpatient Quality Reporting**
  - Hospitals that submit data, including HAI data, are eligible for Medicare's annual payment update (APU).

**HOW**

- **FINANCIAL IMPACT**: 1/4 of APU increase reduction

**INCENTIVE-BASED PAYMENTS**

- **Value-Based Purchasing (VBP)**
  - HAIs directly affect your score.
  - Low-performing hospitals subject to reductions.
  - High-performing hospitals eligible to earn money.

### Penalty-Based Reductions

- **WHAT**
  - **Hospital-Acquired Conditions (HACs)**
    - Lowest quartile of hospitals that fail to avoid preventable conditions (e.g., infections) receive a penalty.
  - **Readmissions**
    - Hospitals with excess readmissions are penalized. HAIs linked to a 60% increase in 30-day readmissions.

- **HOW**
  - **FINANCIAL IMPACT**: 1% reduction, Up to 3% reduction, Up to 2% reduction

**INCENTIVE-BASED PAYMENTS**

- **Value-Based Purchasing (VBP)**
  - HAIs directly affect your score.
  - Low-performing hospitals subject to reductions.
  - High-performing hospitals eligible to earn money.
VBP Program Fiscal Year 2017 Standards: Safety Domain

<table>
<thead>
<tr>
<th>Measure ID</th>
<th>Description</th>
<th>Achievement Threshold</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUTI</td>
<td>Catheter-associated urinary tract infection</td>
<td>0.845</td>
<td>0.0000</td>
</tr>
<tr>
<td>CLABSI</td>
<td>Central line-associated blood stream infection</td>
<td>0.457</td>
<td>0.0000</td>
</tr>
<tr>
<td>C. difficile</td>
<td>Clostridium difficile infection (CDI)</td>
<td>0.750</td>
<td>0.0000</td>
</tr>
<tr>
<td>MRSA bacteremia</td>
<td>Methicillin-resistant <em>Staphylococcus aureus</em> bacteremia</td>
<td>0.799</td>
<td>0.0000</td>
</tr>
<tr>
<td>PSI-90</td>
<td>Complication/patient safety for selected indicators (composite)</td>
<td>0.777936</td>
<td>0.547889</td>
</tr>
<tr>
<td>SSI</td>
<td>Surgical site infection</td>
<td>0.751</td>
<td>0.0000</td>
</tr>
<tr>
<td></td>
<td>Colon</td>
<td>0.698</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
Clinical Process of Care 30%
Patient Experience of Care 70%

VBP Weights FY 2013

Outcome 25%

VBP Weights FY 2014

Efficiency 20%

VBP Weights FY 2015

Safety 25%

VBP Weights FY 2016

Safety 25%

VBP Weights FY 2017

Safety 25%

VBP Weights FY 2018
# VBP Patient Safety Domain

## Domain I

- **15%**
  - **PSI 90 Composite**
    - PSI 3: Pressure Ulcers
    - PSI 6: Iatrogenic Pneumothorax
    - **PSI 7: CLABSI***
    - PSI 8: Post-Op Hip Fx
    - PSI 12: VTE/PE
    - PSI 13: Post-op Sepsis
    - PSI 14: Wound Dehiscence
    - PSI 15: Accidental Puncture

## Domain II

- **85%**
  - **HAI (NHSN)**
    - CLABSI*
    - CAUTI*
    - SSI Hyster
    - SSI Colon
    - MRSA Bacteremia
    - CDI*

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*Part of Centers for Medicare CMS\(^1\) QIO HAI Prevention Collaborative

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\(^1\) Centers for Medicare & Medicaid Services
Target Assessment For Prevention

- TAP Strategy
- TAP Report
- TAP Assessment
Overview of the TAP Strategy

- Developed by the Centers for Disease Control and Prevention (CDC)
- Data-driven approach
- Targets facilities/units with disproportionate burden related to HAIs
- Identifies gaps in infection prevention so targeted locations can be addressed

Opportunity to have CDC’s Experts Provide Input on Opportunities for Improvement in HAI
TAP Reports Overview

- NHSN\textsuperscript{2} data (CLABSI, CAUTI, CDI)
- Targets prevention efforts to the areas of greatest need
- Uses a metric called the \textit{Cumulative Attributable Difference (CAD)}

The standard infection ratio (SIR) can be an ambiguous number. The CAD provides a definite target toward which to aim your improvement efforts.
Understanding the CAD

How the CAD is calculated:\textsuperscript{4}

\textit{Hospital-Level CAD}
\[= (\text{Observed Infections ICU} - \text{Expected Infections ICU} \times \text{SIR threshold})
+ (\text{Observed Infections Ward} - \text{Expected Infections Ward} \times \text{SIR threshold})\]

\textit{Unit-Level CAD} = (\text{Observed Infections} - \text{Expected Infections} \times \text{SIR threshold})

How to interpret and use the CAD:

The CAD is the number of infections that need to be prevented in order to reach a targeted SIR threshold.

- A \textbf{positive} CAD indicates the number of infections above the targeted SIR threshold. This indicates areas for improvement.
- A \textbf{negative} CAD indicates the number of infections below the targeted SIR threshold.

The CAD can be used to identify and rank units with an excess number of infections.
**Location Rank:**
Ranked by highest to lowest CAD and assists you in identifying where to focus QI efforts

**Event:**
The number of infections

**CAD:**
How many infections a unit must reduce to achieve target SIR

**SIR:**
Observed/Expected

**Number of Pathogens:**
Enables infection control professionals (ICPs) to identify pathogens

---

### Table 2: Location Ranked by CAD within a Facility

<table>
<thead>
<tr>
<th>Facility CAD</th>
<th>Location Rank</th>
<th>Location</th>
<th>CDC Location Type</th>
<th>Event</th>
<th>Device Days</th>
<th>DUR %</th>
<th>CAD</th>
<th>SIR</th>
<th>SIG</th>
<th>Number of Pathogens (CNS, YS, SA, FS, KPO, FM, EC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>ICU_N</td>
<td>IN:ACUTE:CC:MS</td>
<td>1</td>
<td>2,752</td>
<td>69</td>
<td>13.94</td>
<td>3.88</td>
<td>16</td>
<td>(0, 0, 0, 0, 1, 1, 0)</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>MICU_</td>
<td>IN:ACUTE:CC:M</td>
<td>3</td>
<td>2,833</td>
<td>0.31</td>
<td>0.56</td>
<td></td>
<td></td>
<td>(0, 0, 1, 1, 0, 0)</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Rehab2</td>
<td>IN:ACUTE:WARD:REHAB</td>
<td>0</td>
<td>252</td>
<td>-0.10</td>
<td></td>
<td></td>
<td></td>
<td>(0, 0, 0, 0, 1, 0)</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Rehab1</td>
<td>IN:ACUTE:WARD:REHAB</td>
<td>0</td>
<td>300</td>
<td>-0.12</td>
<td></td>
<td></td>
<td></td>
<td>(0, 0, 0, 0, 1, 0)</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Rehab3</td>
<td>IN:ACUTE:WARD:REHAB</td>
<td>0</td>
<td>310</td>
<td>-0.12</td>
<td></td>
<td></td>
<td></td>
<td>(0, 0, 0, 0, 1, 0)</td>
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<tr>
<td>6</td>
<td>6</td>
<td>TICU_S</td>
<td>IN:ACUTE:CC:MS</td>
<td>0</td>
<td>542</td>
<td>-0.41</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>7</td>
<td>PICU</td>
<td>IN:ACUTE:CC:MS_PED</td>
<td>1</td>
<td>1,716</td>
<td>-1.57</td>
<td>0.19</td>
<td></td>
<td></td>
<td>(0, 0, 0, 0, 1, 0)</td>
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<tr>
<td>8</td>
<td>8</td>
<td>SICU</td>
<td>IN:ACUTE:CC:S</td>
<td>2</td>
<td>3,575</td>
<td>-2.11</td>
<td>0.24</td>
<td></td>
<td></td>
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<tr>
<td>9</td>
<td>9</td>
<td>NICU</td>
<td>IN:ACUTE:CC:NS</td>
<td>5</td>
<td>2,100</td>
<td>-2.63</td>
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<tr>
<td>10</td>
<td>10</td>
<td>TICU</td>
<td>IN:ACUTE:CC:T</td>
<td>0</td>
<td>2,779</td>
<td>-3.00</td>
<td></td>
<td></td>
<td></td>
<td>(0, 0, 0, 0, 1, 0)</td>
</tr>
</tbody>
</table>

Data value will be ‘1’ if there is no location reporting. SIR set to ‘1’ when expected number of events < 1.0. DUR% not calculated if device days or patient days are missing at facility level.

(CNS, YS, SA, FS, KPO, FM, EC) = No. of E. Coli, Yeast (both candida and non-candida species), P. aeruginosa, K. pneumoniae/K. oxytoca, Proteus Mirellus, Enterococcus species (LC) = location category. (ICU, WARD+)

CAD = (OBSERVED_ICU - EXPECTED_ICU*SELECTED CAD MULTIPLIER) + (OBSERVED_WARD - EXPECTED_WARD*SELECTED CAD MULTIPLIER)

SIR TEST = ‘SIG’ means SIR > SIR Goal significantly

Data contained in this report were last generated on August 31, 2015 at 12:12 PM.
Every Journey Begins With a Good Map!

Accurate mapping is critical

Impacts risk adjustment—SIR

Avoids incorrect reporting to CMS

Remember to re-evaluate current mapping of each unit

Pay close attention to the “CDC Location Code”

Same Unit Mapped Differently—CAUTI

<table>
<thead>
<tr>
<th>loccdc</th>
<th>summaryYM</th>
<th>infCount</th>
<th>numExp</th>
<th>numucathdays</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M01</td>
<td>1</td>
<td>0.560</td>
<td>431</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M02</td>
<td>1</td>
<td>0.601</td>
<td>462</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M03</td>
<td>0</td>
<td>0.468</td>
<td>360</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M04</td>
<td>2</td>
<td>0.511</td>
<td>393</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M05</td>
<td>1</td>
<td>0.468</td>
<td>360</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M06</td>
<td>0</td>
<td>0.191</td>
<td>147</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M07</td>
<td>1</td>
<td>0.313</td>
<td>241</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M08</td>
<td>0</td>
<td>0.283</td>
<td>218</td>
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<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M09</td>
<td>1</td>
<td>0.441</td>
<td>339</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M10</td>
<td>1</td>
<td>0.573</td>
<td>441</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M11</td>
<td>0</td>
<td>0.585</td>
<td>450</td>
</tr>
<tr>
<td>IN:ACUTE:CC:MS</td>
<td>2012M12</td>
<td>0</td>
<td>0.624</td>
<td>480</td>
</tr>
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</table>

\[
\frac{8}{5.61} = \text{SIR 1.4}
\]

<table>
<thead>
<tr>
<th>loccdc</th>
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<th>infCount</th>
<th>numExp</th>
<th>numucathdays</th>
</tr>
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<tbody>
<tr>
<td>IN:ACUTE:CC:N</td>
<td>2013M01</td>
<td>2</td>
<td>1.520</td>
<td>400</td>
</tr>
<tr>
<td>IN:ACUTE:CC:N</td>
<td>2013M02</td>
<td>1</td>
<td>1.505</td>
<td>396</td>
</tr>
<tr>
<td>IN:ACUTE:CC:N</td>
<td>2013M03</td>
<td>0</td>
<td>1.474</td>
<td>388</td>
</tr>
<tr>
<td>IN:ACUTE:CC:N</td>
<td>2013M04</td>
<td>1</td>
<td>1.140</td>
<td>300</td>
</tr>
<tr>
<td>IN:ACUTE:CC:N</td>
<td>2013M05</td>
<td>1</td>
<td>0.901</td>
<td>237</td>
</tr>
<tr>
<td>IN:ACUTE:CC:N</td>
<td>2013M06</td>
<td>1</td>
<td>0.562</td>
<td>148</td>
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<td>IN:ACUTE:CC:N</td>
<td>2013M07</td>
<td>1</td>
<td>0.969</td>
<td>255</td>
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<td>2013M08</td>
<td>0</td>
<td>0.749</td>
<td>197</td>
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<td>2013M09</td>
<td>0</td>
<td>0.638</td>
<td>168</td>
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<tr>
<td>IN:ACUTE:CC:N</td>
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<td>2</td>
<td>0.676</td>
<td>178</td>
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<td>IN:ACUTE:CC:N</td>
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<td>2</td>
<td>0.847</td>
<td>223</td>
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<td>2013M12</td>
<td>4</td>
<td>0.977</td>
<td>257</td>
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</table>

\[
\frac{15}{11.95} = \text{SIR 1.2}
\]
CAUTI Initial Facility Assessment Tool

• Used to determine potential gaps in infection prevention.
• Completed at unit level where data indicate excess CAUTI infections.
• Six domains:
  1. General Infrastructure, Capacity, and Processes
  2. Appropriate Indications for Indwelling Urinary Catheter Insertion
  3. Aseptic Indwelling Urinary Catheter Insertion
  4. Proper Indwelling Urinary Catheter Maintenance
  5. Timely Removal of Indwelling Urinary Catheters
  6. Preventing Candiduria and Detection of Asymptomatic Bacteriuria
## CAUTI Initial Facility Assessment Tool Data Example

### Aggregate for Facility *****: General Infrastructure, Capacity, and Processes Descriptives

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Unknown</th>
<th>%</th>
<th>N*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is senior leadership involved in CAUTI prevention activities?</td>
<td>19</td>
<td>83%</td>
<td>0</td>
<td>0%</td>
<td>4</td>
<td>17%</td>
<td>23</td>
</tr>
<tr>
<td>2. Is unit-level leadership involved in CAUTI prevention activities?</td>
<td>23</td>
<td>96%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>4%</td>
<td>24</td>
</tr>
<tr>
<td>3. Does your facility currently have a team/work group focusing on CAUTI prevention?</td>
<td>16</td>
<td>67%</td>
<td>2</td>
<td>8%</td>
<td>6</td>
<td>25%</td>
<td>24</td>
</tr>
<tr>
<td>4. Does your facility have a staff person with dedicated time to coordinate CAUTI prevention activities?</td>
<td>10</td>
<td>43%</td>
<td>5</td>
<td>22%</td>
<td>8</td>
<td>35%</td>
<td>23</td>
</tr>
<tr>
<td>5. Does your facility have a nurse champion for CAUTI prevention activities?</td>
<td>14</td>
<td>61%</td>
<td>7</td>
<td>30%</td>
<td>2</td>
<td>9%</td>
<td>23</td>
</tr>
<tr>
<td>6. Does your facility have a physician champion for CAUTI prevention activities?</td>
<td>2</td>
<td>9%</td>
<td>10</td>
<td>44%</td>
<td>11</td>
<td>48%</td>
<td>23</td>
</tr>
</tbody>
</table>

**Does your facility train staff on:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Unknown</th>
<th>%</th>
<th>N*</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Aseptic technique for urinary catheter insertion (for all staff who are given responsibility for inserting indwelling urinary catheters)?</td>
<td>22</td>
<td>96%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>4%</td>
<td>23</td>
</tr>
<tr>
<td>8. Proper urinary catheter maintenance procedures (for all staff who are given responsibility for indwelling urinary catheter care)?</td>
<td>23</td>
<td>96%</td>
<td>1</td>
<td>4%</td>
<td>0</td>
<td>0%</td>
<td>24</td>
</tr>
<tr>
<td>9. Use of bladder ultrasound scanners (for all staff who use them)?</td>
<td>21</td>
<td>88%</td>
<td>3</td>
<td>12%</td>
<td>0</td>
<td>0%</td>
<td>24</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Unknown</th>
<th>%</th>
<th>N*</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Proper indwelling urinary catheter handling and placement of the drainage bag (for all staff involved in moving patients including transport personnel)?</td>
<td>21</td>
<td>88%</td>
<td>1</td>
<td>4%</td>
<td>2</td>
<td>8%</td>
<td>24</td>
</tr>
<tr>
<td>11. Appropriate indications for urine culturing (for ordering providers)?</td>
<td>16</td>
<td>69%</td>
<td>2</td>
<td>9%</td>
<td>5</td>
<td>22%</td>
<td>23</td>
</tr>
</tbody>
</table>
CDC CDI TAP Assessment Pilot

HSAG is a Pilot QIN-QIO for CDI TAP Assessment
CMS Inpatient Prospective Payment Systems (IPPS) Reports
CMS IPPS Reports

- “Snapshot” of what is being submitted on your behalf to CMS
- Validation of your submission
- **Only** proof your data were entered prior to the deadline
- Means to verify data accuracy
- **Every submission, every time!**
Reminder: Always Generate a New Data Set Before Running Reports
Needs to be Done for Every Report, Every Time

Select modify

Analysis → Output Options → CMS Reports → Acute Care Hospitals (Hospital IQR) → CDC Defined Output
Keys to Successful NHSN Reporting

Change to “SummaryYM” to display report by month
### National Healthcare Safety Network

**SIR for CAUTI Data for CMS IPPS - Overall**

As of: March 26, 2015 at 3:16 PM

Data Range: CAU_RATE_ID summaryYM 2014M01 to 2014M03


<table>
<thead>
<tr>
<th>summaryYM</th>
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<th>numucathdays</th>
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<th>SIR_pval</th>
<th>SIR95CI</th>
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<td>2014M01</td>
<td>102</td>
<td>92.097</td>
<td>45449</td>
<td>1.099</td>
<td>0.3700</td>
<td>0.600, 1.327</td>
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<tr>
<td>2014M02</td>
<td>104</td>
<td>80.767</td>
<td>39667</td>
<td>1.288</td>
<td>0.0147</td>
<td>1.057, 1.554</td>
</tr>
<tr>
<td>2014M03</td>
<td>76</td>
<td>84.089</td>
<td>41190</td>
<td>0.894</td>
<td>0.3305</td>
<td>0.700, 1.113</td>
</tr>
</tbody>
</table>

If infCount in this table is less than you reported, aggregate data are not available to calculate numExp.

Lower bound of 95% Confidence Interval only calculated if infCount > 0. SIR values only calculated if numExp >= 1.

SIR excludes those months and locations where device days are missing.

Applicable ward-level data included for 2015 and forward only, per CMS IPPS requirements.

Beginning January 2015, the CAUTI definition excludes all non-bacterial pathogens and therefore, the number of CAUTIs reported in 2015 and forward may be lower than in previous years.


Data contained in this report were last generated on March 26, 2015 at 2:17 PM.

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**Group By “SummaryYM”**

**Fictitious Data**
Thank you!

Christine Martini-Bailey, RN, BSN
Associate Director, HSAG
cbailey@hsag.com
614.307.2936
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Publication No. QN-11SOW-C.1-11052015-01