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### Linking Registries, EHRs and Comprehensive Care Programs to Drive Quality in Cancer Care

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## Charting a New Course for a System in Crisis



Institute of Medicine 2013 Care often is not patient-centered, many patients do not receive palliative care to manage their symptoms and side effects from treatment, and decisions about care often are not based on the latest scientific evidence.

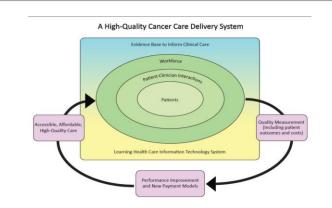
## IOM Recommendations to improve the quality of cancer care

•A national quality reporting program with meaningful quality measures

•Improve the affordability of cancer care by leveraging existing efforts to reform payment and eliminate waste

•Reimbursement aligned to reward affordable, patient-centered high quality care

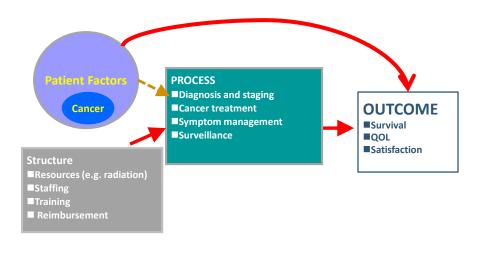
### IOM highlights importance of quality measurement and new payment models



Delivering on IOM Recommendations to Chart a New Course will require quality measurement to be used for accountability

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## Framework for Measuring Quality of Care





## Charting a new course for quality cancer care

Surveillance

**Quality Improvement** 

Accountability

To make progress on the quality and affordability of cancer care will require that we shift quality measurement from efforts focused largely on surveillance and QI to **accountability** 

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### Data Sources

| Payer  | Practice  | Hospital   |
|--|---|--|
| <ul> <li>Claims data</li> <li>Pharmacy<br/>data</li> <li>Data collected<br/>for<br/>administrative<br/>purposes –<br/>e.g. pre-<br/>authorization</li> </ul> | <ul> <li>EHR data</li> <li>Billing data</li> <li>Medical<br/>record data<br/>(paper)</li> </ul> | <ul> <li>EHR data</li> <li>Billing data</li> <li>Medical<br/>record data<br/>(paper)</li> <li>Registry data</li> </ul> |

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#### Data Elements included in Data Sources for Cancer Quality Measurement

|                            | Cancer<br>Registry | Claims | Medical<br>Record | Patient Self-<br>report |
|----------------------------|--------------------|--------|-------------------|-------------------------|
| <b>Diagnosis of cancer</b> | Yes                | Yes    | Yes               | Yes                     |
| Timing of diagnosis        | Yes                | No     | Yes               | Yes                     |
| Tumor size                 | Yes                | No     | Yes               | No                      |
| Stage                      | Yes                | No     | Yes               | No                      |
| Patient refusal            | No                 | No     | Yes               | Yes                     |
| Comorbidity                | No                 | Yes    | Yes               | Yes                     |
| Contraindications          | No                 | No     | Yes               | ?                       |

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### Utility of Administrative Data for Measure Quality of Cancer Care and Other Outcomes

|                         | Definition                   | Availability                                |
|-------------------------|------------------------------|---|
| Case Identification     | Diagnosis of cancer          | Cannot differentiate incident vs. prevalent |
| Disease characteristics | Stage, biomarkers            | Not available (except ICD-9 codes for mets) |
| Comorbid conditions     | Chronic health conditions    | Medical claims                              |
| Diagnostic testing      | Imaging, lab tests           | Medical claims                              |
| Treatment               | Infusions, oral medications  | Medical and pharmacy data                   |
| Hospitalizations        | Admissions                   | Medical claims                              |
| Providers               | Practices, facilities        | Medical claims provider ID                  |
| Cost                    | \$ paid for service, episode | Medical claims                              |
| Outcomes                | PFS, OS                      | Not available                               |
| Patient preferences     | PROs                         | Not available                               |

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## Potential Methods of Attribution

| Payer   | Practice   | Hospital  |
|---|--|---|
| <ul> <li>Provider with most visits</li> <li>Provider with any visits</li> <li>Provider with most chemo billed</li> <li>Provider with any chemo billed</li> <li>Highest cost provider</li> </ul> | <ul> <li>Any patient with visit within last year</li> <li>Any patient with chemotherapy in last year</li> <li>New patients in last year</li> </ul> | <ul> <li>Cancer registry</li> <li>Any admission</li> <li>Any chemotherapy<br/>billed</li> <li>Most<br/>chemotherapy<br/>billed</li> </ul> |

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| Physician and Practice<br>Characteristics  | No. (%)    | Percentage o<br>Medicare Patie<br>Assigned |       |        | f Total Visits<br>Assigned Patients | Percentage of<br>and Management<br>with Assign | Visits That Were |        | Billed That Were |
|--|------------|--|-------|--------|-------------------------------------|--|------------------|--------|------------------|
|  |            | median                                     | IQR   | median | IQR                                 | median   | IQR              | median | IQR              |
| All Community Tracking<br>Study physicians | 8604 (100) | 12   | 2-37  | 20     | 360                                 | 40   | 17-77            | 205    | 6-648            |
| Specialty§                                 |            |  |       |        |                                     |  |                  |        |                  |
| PCPs                                       | 5527 (45)  | 39   | 14-57 | 62     | 23-77                               | 77   | 56-87            | 467    | 42-1293          |
| All medical specialists                    | 1406 (25)  | 6  | 1-14  | 10     | 1-28                                | 28   | 15-49            | 186    | 2-477            |
| Oncologists                                | 97 (2)     | 28   | 21-34 | 62     | 53-70                               | 66   | 56-74            | 1616   | 619-6637         |
| Cardiologists                              | 213 (4)    | 7  | 3-13  | 17     | 9-32                                | 34   | 21-52            | 945    | 198-1591         |
| Neurologists                               | 114 (2)    | 7  | 4-12  | 14     | 7-21                                | 21   | 15-31            | 205    | 23-277           |
| Dermatologists                             | 88 (2)     | 7  | 4-10  | 10     | 7-17                                | 15   | 12-21            | 233    | 80-227           |
| Surgeons                                   | 1261 (23)  | 9  | 4-14  | 14     | 7-23                                | 18   | 10-27            | 136    | 12-147           |
| Emergency medicine<br>physicians           | 390 (6)    | 0  | -     | 0      | <del></del>                         | 6  | 0-16             | 0      | _                |
| Practice size and type                     |            |  |       |        |                                     |  |                  |        |                  |
| 1 or 2 physicians                          | 3092 (36)  | 16   | 4-46  | 26     | 7-69                                | 46   | 17-83            | 311    | 18-838           |
| 3–10 physicians                            | 1696 (22)  | 11   | 4-27  | 20     | 7-50                                | 31   | 16-68            | 323    | 27-793           |
| 11-50 physicians                           | 633 (8)    | 9  | 2-34  | 17     | 4-60                                | 33   | 17-74            | 333    | 16-1007          |
| ≥51 physicians                             | 279 (3)    | 11   | 1-35  | 23     | 2-63                                | 46   | 18-75            | 228    | 1-994            |
| Medical school                             | 555 (7)    | 9  | 2-22  | 15     | 2-42                                | 28   | 15-60            | 61     | 2-154            |
| All other                                  | 2349 (25)  | 8  | 0-37  | 13     | 0-59                                | 51   | 17-79            | 40     | 0-341            |
| PCPs only¶                                 | 5527 (45)  | 47   | 20-68 | 70     | 33-86                               | 87   | 68-94            | 541    | 53-1458          |

\* The numbers of physicians are unweighted, and all percentages are weighted. Assignments of patients to individual physicians were made using the plurality provider algorithm, first allowing for assignments to any physician and then allowing for assignments to only infrave are physicians. Medians were based on Medicare claims billed by 8604 Community Tracking Study physicians unvey responders for J.79 million Deneficianes they traced in 2000 and were weighted with Community Tracking Study survey weights. We exclude beneficiaries the survey responders is reliaive to any physician and then allowing for assignment to only were weighted with Community Tracking Study survey weights. We exclude beneficiaries the reserve of a settive value units, derived from the Physician of the Schedul tables of the Centers for Medicare and Medicaid Services."
Charges are reported a reliaive valuation and management visits that were with assigned patients were based on the subgroup of 7830 Community Tracking Study physicians. See analytic and management visits that were with assigned patients were based on the subgroup of 7830 Community Tracking Study physicians. Second as reliaive were hysicians devices."
Specially data were missing for 20 physicians. Second physicians devices are deviced by second as reliaive of physicians. Second physicians devices are deviced by second as the special speciality and physicians.
Specially data were missing for 20 physicians. Second physicians devices are deviced by second physicians.
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### Initiatives to Measure Cancer Care Quality



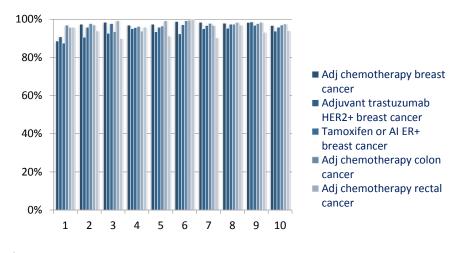
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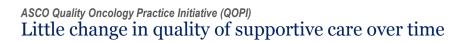
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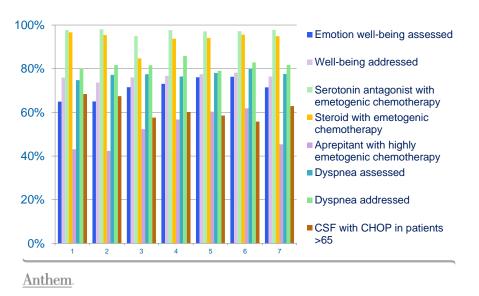
### **Existing Cancer Quality Measures**

|                                | Drococc             | Outcome  | NQF      |
|--------------------------------|---------------------|----------|----------|
|                                | Process<br>Measures | Measures | Endorsed |
| JCAHO                          | 5                   | 0        | 0        |
| RAND QATOOL                    | 117                 | 0        | 0        |
| RAND ASSIST                    | 41                  | 0        | 4        |
| Commission on Cancer           | 8+                  | 0        | 6        |
| ASCO QOPI <sup>®</sup>         | 134                 | 16*      | 43       |
| ΑΜΑ ΡΟΡΙ                       | 21                  | 0        | 16       |
| PPS Exempt Cancer Centers      | 3†                  | 2        | 5        |
| Dartmouth Atlas                | 0                   | 11*      | 0        |
| OSHPD                          | 0                   | 2        | 0        |
| 30-day post-surgical mortality | 0                   | 7        | 1        |
|                                |                     |          |          |

#### ASCO Quality Oncology Practice Initiative (QOPI) Very high adherence to adjuvant therapy quality indicators







# Cancer surgery outcomes vary substantially by hospital volume

#### Adjusted Perioperative Mortality and Survival for Cancer Surgery Hazard of Death at Lowest Volume vs. Highest Hospitals

|                 | Adjusted<br>Perioperative | Adjusted 5-Year<br>Survival | Adjusted 5-Year<br>Conditional Survival <sup>*</sup> |
|-----------------|---------------------------|-----------------------------|--|
| Cancer Type     | Mortality                 |                             |  |
| Colon           | 1.23                      | 1.12                        | 1.10   |
| Esophagus       | 1.76                      | 1.34                        | 1.29   |
| Liver           | 2.11                      | 1.21                        | 1.08 <sup>+</sup>                                    |
| Lung            | 1.31                      | 1.09                        | 1.06   |
| Pancreas        | 2.26                      | 1.22                        | 1.13   |
| Rectal          | 1.33                      | 1.18                        | 1.17   |
| Stomach         | 1.43                      | 1.13                        | 1.10   |
| <sup>†</sup> NS |                           |                             |  |

Bilimoria K Y et al. JCO 2008;26:4626-4633

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#### Gaps in cancer quality measures

### Lack of variability on many of the NQF endorsed measures of quality limits utility of measures for public reporting or P4P

- Many measures are not be specific enough (e.g. any adjuvant therapy)
- Low scores often represent data problems public reporting of these measures would lead to resources being spent on data infrastructure/quality

#### Few validated outcome measures

#### Few measures of overuse

No measures of patient experience



### Our model: a Quality Initiative

The Cancer Care Quality Program provides a framework for rewarding high quality cancer care

Oncologists participating in the Cancer Care Quality Program will receive additional payment for treatment planning and care coordination when they select a treatment regimen that is on Pathway

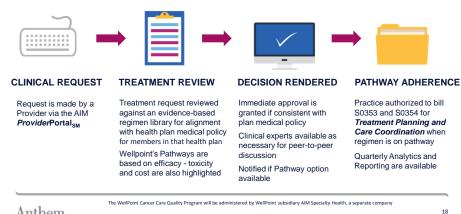
Web-based platform with decision-support for Quality Initiative also improves efficiency of review against Health Plan Medical Policy and decreases administrative burden for practices



#### www.cancercarequalityprogram.com

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### **Cancer Care Quality Program** administered by AIM Specialty



## Clinical data entered by practice staff through web portal

| patient          Patient       Image: Control Request         Selects drugs in regimen       4 Perse etter Patient Chical batals. Data will be automatically saved in the system.         Enters clinical info:       • Cancer type         • Disease stage       Biomarkers         • Performance Status       • Line of therapy         • Line of therapy       • Line of therapy   | Practice identfies                  | Alm   |  | @ ProviderPorta                    |
|---|-------------------------------------|---|--|------------------------------------|
| <ul> <li>Selects drugs in regimen</li> <li>Enters clinical info:</li> <li>Cancer type</li> <li>Disease stage</li> <li>Biomarkers</li> <li>Performance Status</li> <li>Line of therapy</li> </ul>  | patient                             | Order Request                                       |  | Logo                               |
| Selects drugs in<br>regimen<br>Enters clinical info:<br>• Cancer type<br>• Disease stage<br>• Biomarkers<br>• Performance<br>Status<br>• Line of therapy  |                                     |   |  | Step: (12)3(4)5(6)                 |
| <ul> <li>Cancer type</li> <li>Disease stage</li> <li>Biomarkers</li> <li>Performance<br/>Status</li> <li>Line of therapy</li> </ul>   | -                                   | Refresh Save and Exit<br>Joe Demo - Male            |  |                                    |
| Disease stage     Biomarkers     Performance     Status     Line of therapy   | Enters clinical info:               | Enter Diagnosis                                     |  |                                    |
| Biomarkers     'KDR: 182.9 Maigrant recepter of breachus and lung, unspecified site     Performance     Status     Line of therapy  | Cancer type                         | * Pathology:  | Select Pathology   |                                    |
| Performance     Status     Line of therapy  | <ul> <li>Disease stage</li> </ul>   | * Stage:  | Select Stage   |                                    |
| Status  •Line of Theatment  •Line of Theatment  • I the of Theatment  • I theatment  • I theatment  • I theatment  • I theatment  • | <ul> <li>Biomarkers</li> </ul>      | * ICD9:   | 162.9 Malgnant neoplasm of bronchus and lung, unspecified site |                                    |
| • Line of therapy   | Performance                         | Performance Status:                                 |  | ¥                                  |
|   | Status                              | * Line of Treatment:                                | Select Line of Treatment                                       |                                    |
| If Previous   | <ul> <li>Line of therapy</li> </ul> |   |  |                                    |
| 44 Previous   |                                     |   |  |                                    |
|   |                                     | 46 Previous   |  | Save and Continue                  |
|   |                                     |   |  |                                    |
|   |                                     |   |  |                                    |
| Anthem Note: AIM Specialty Health maintains the confidentiality of all protected health information. All data displayed is fictional and any resemblance to real persons is ourely coincidental. Proprietary and Confidential   | A1                                  | Note: AIM Specialty Health maintains the confidenti | ality of all protected health information.                     | Proprietary and Confidential. 2014 |

## Clinical detail: stage and biomarkers

| lere we will collect                | Enter Diagnosis                        |   |       |
|-------------------------------------|--|---|-------|
| nore detailed<br>nformation         | * Pathology:                           | Adenocarcinoma - Invasive Lobular Carcinoma                       | 1     |
| egarding your<br>atient's diagnosis | * Stage:                               | IIA   | · •   |
| atient s diagnosis                  | * ICD9:                                | 174.4 Malignant neoplasm of upper-outer quadrant of female breast | •     |
| lease confirm:                      | * Bio-Markers & Tumor Characteristics: |   |       |
| Specific cancer<br>type             | Estrogen Receptor:                     | Positive  | · •   |
| Disease stage                       | HER2/NEU:                              | Negative  | · •   |
| Bio-Markers as                      | Menopausal Status;                     | Post-Menopausal   | · •   |
| needed<br>Line of                   | OncotypeDx @ Breast                    | Not reported  | · •   |
| treatment                           | Progesterone Receptor:                 | Negative  | · •   |
| Performance<br>Status               | * Line of Treatment:                   | Adjuvant/ Post-operative  | · 🖌 0 |
|                                     | * Performance Status:                  | 1 - Symptoms present but ambulatory without restriction           | ×     |





## Pathway option available

|   | Consider Alter | native Regimens  |                              |                               |              |
|---|----------------|--|------------------------------|-------------------------------|--------------|
|   |                | assed regimens available for the patient are below. Please consider selecting a Pathway (<br>rio. To proceed with the current regimen click "Save and Continue". | Ə ) regimen that             | meets the pati                | ent          |
| based on the<br>Information you<br>Intered, you may |                | Name   | Line of<br>Treatment         | Stages                        | Actions      |
| e offered an  | Seed 0         | AC (Adriamycin (Doxonubicin) and Cyloxan (Cyclophosphamide) every 2 weeks), followed by<br>Taxol (Pacifizael) Weekly (Adjuvanti Atler Surgery)                   | Adjuvant/Post-<br>operative  | L IA, IB, IA,<br>IIB, IIC     | View Details |
| lternative Pathway<br>egimen. By                    | ✔ Select ②     | AC [Adriamycin (Doionubicin) and Cytoxan (Cyclophosphamide) every 3 weeks] (Adjuvant) After Surgery) (W)   | Adjuvant/Post-<br>operative  | L IIA, IIB, IIA,<br>IIB, IIC  | View Details |
| hoosing a Pathway<br>egimen, your                   | 🖌 Seed 📀       | AC (Adriamycin (Dororubicin) and Cytoxan (Cyclophosphamide) every 3 weeks), Followed by<br>Taxol (Pacifizer) Weekty (Adjuvanti After Surgery) (W)                | Adjuvant/Post-<br>operative  | l IA, IB, IIA,<br>IIB, IIC    | View Details |
| ractice will be<br>ligible for                      | ✓ Seed ②       | TC [Taxotere (Docetaxel) and Cytoxan (Cyclophosphamide)] (AdjuvantiAfter Surgery )   | Adjuvant/Post-<br>operative  | I, IIA, IIB, IIA,<br>IIB, IIC | View Details |
| enhanced  | ✓ Select       | AC (Adriamycin (Doronublicin) and Oytoxan (Cyclophosphamide) every 2 weeks), followed by<br>Taxol (Paditaxel) every 2 weeks (Adjuardi After Surgery)             | Adjuvant/Post-<br>operative  | L IIA, IIB, IIA,<br>IIB, IIC  | View Details |
| reimbursement                                       | ✓ Select       | AC (Advamycin (Doxonubicin) and Oytoxan (Cyclophosphamide) every 3 Weeks), followed by<br>Taxofere (Docetaxel) every 3 Weeks (Adjuvanti After Surgery)           | Adjuvanti Post-<br>operative | L IIA, IIB, IIA,<br>IIB, IIC  | View Details |
| Choose "View<br>Details" for                        | ✓ Seect        | Anmider (Anastrazole) after Surgery (Adjuvant, Stage (-HI)   | Adjuvanti Post-<br>operative | l, IIA, IIB, IIA,<br>IIB, IIC | View Details |
| additional<br>nformation.                           | ✓ Select       | Aromasin (Exemestane) after Initial Tamosfen (AdjuvantiAfter Surgery, Stage (HII)  | Adjuvant/Post-<br>operative  | L IIA, IIB, IIA,<br>IIB, IIC  | View Details |
| inormation.   | ✔ Seed         | CEF (Cytoxan (Cyclophosphamide), Epinubicin, Fluorouraci (S-FU)) (Adjuvanti After Surgery)   | Adjuvant/Post-<br>operative  | L IA, IB, IIA,<br>IB, IIC     | View Details |
|   | ✓ Select       | CIRF [Cytoxan (Cyclophosphamide), Methobrevale and Fluorouracii (5-FU)] (Adjuvanti After   Surgery)  | Adjuvanti Post-<br>operative | LIA IB, IA,<br>IIB, IIC       | View Details |

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### Not perfect... but a way forward

#### **Quality Measures**

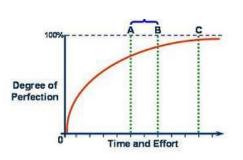
- Pay for performance based on pathway adherence
- Reporting to practices will include adherence to % of evidence-based regimens, NQF endorsed measures (e.g. hospice), hospitalizations

#### **Data Sources**

- Clinical data captured via portal
- Medical claims
- Pharmacy claims

#### Attribution

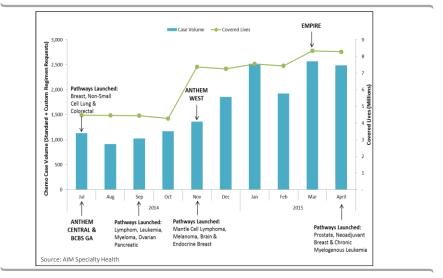
• Practice self identifies when registers patient with Program



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## Program growth since July 2014



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## Where do we go from here?



A national designation awarded by Blue Cross and Blue Shield companies to hospitals and medical facilities that have demonstrated expertise in delivering quality healthcare in the areas of bariatric surgery, cardiac care, complex and rare cancers, knee and hip replacement, spine surgery and transplants. The designation is based on objective, evidence-based selection criteria established in collaboration with expert physicians and medical organizations.

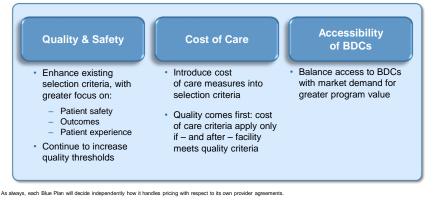
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## Refining Program to Meet Market Needs

The Blues are responding with a value-based approach

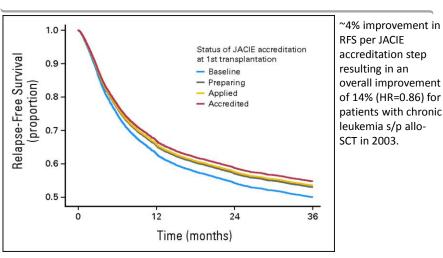
**Total Value Proposition** 



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## Accreditation associated with better RFS after ASCT

Gratwohl A et al. JCO 2010; 29:1980-1986



## What about other outcomes?

| Long Ter                | m Outcomes of ASC        | T                   |
|-------------------------|--------------------------|---------------------|
|                         | All Survivors<br>(N=324) | Siblings<br>(N=309) |
| Health Condition        |                          |                     |
| No condition            | 84 (25.9%)               | 189 (61.2%)         |
| Psychological Distress  |                          |                     |
| Somatization            | 35 (10.8%)               | 12 (3.9%)           |
| Global distress         | 19 (5.9%)                | 10 (3.2%)           |
| Health Care Utilization |                          |                     |
| Medical contact         | 322 (99.4%)              | 308 (99.7%)         |
| Cancer/HCT visit        | 182 (56.2%)              | 6 (1.9%)            |
| Health Status           |                          |                     |
| Excellent/good          | 283 (87.6%)              | 292 (94.5%)         |
| Fair/poor               | 40 (12.4%)               | 17 (5.5%)           |

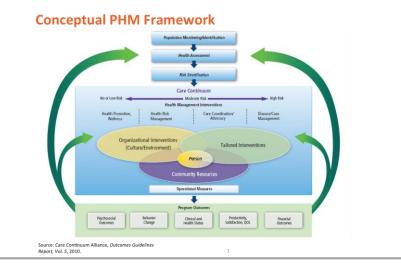
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Can-Lan S et al. Biol Blood Marrow Transplant. 2013 Jul; 19(7): 1073–1080.

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## New Focus: Population Health Management



# PHM will shift focus from procedure outcomes to disease and population outcomes

## Long Term Outcomes of ASCT Acute Leukemia

|                         | Health System A | Health System B |
|-------------------------|-----------------|-----------------|
| Survival                |                 |                 |
| 1-yr RFS                | ??%             | ??%             |
| Health Condition        |                 |                 |
| No condition            | ??%             | ??%             |
| Psychological Distress  |                 |                 |
| Somatization            | ??%             | ??%             |
| Global distress         | ??%             | ??%             |
| Health Care Utilization |                 |                 |
| Medical contact         | ??%             | ??%             |
| Health Status           |                 |                 |
| Excellent/good          | ??%             | ??%             |

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Discussion



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