Social Cultural Intelligence™

Using Big Data Analytics to Identify Cross-Cultural Insights Through the Patient-to-Treatment™ Journey

Forbes

The U.S. ranks

dead last

in life expectancy for men and second to last for women among the 17 wealthiest nations.

Latinos and African-Americans experience

30 to 40%

poorer health outcomes

than white Americans. This disparity leads not only to shortened lives and increased illness, but also costs the nation more than **$60 billion in lost productivity each year**

2014 Report- Robert Wood Johnson Foundation

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"Your health care depends on who you are,"

according to a 2014 report from the Robert Wood Johnson Foundation, the nation's largest philanthropy dedicated to health. "Race and ethnicity continue to influence a patient's chances of receiving many specific health care interventions and treatments."

+9.2 AA
+12.3 Hispanic

+ access
< outcomes

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Information disparities

Minority race/ethnicity groups received less information from their doctors about rationale for treatment recommendations.

Blacks and Hispanics were

63% and 50%

less likely,

to receive such information compared to Whites.

Physician-patient decision making may differ in care of racial/ethnic minorities
*Published: September 9, 2015- Boston University Medical Center*

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Ronald M. Andersen

**The Andersen's Behavioral
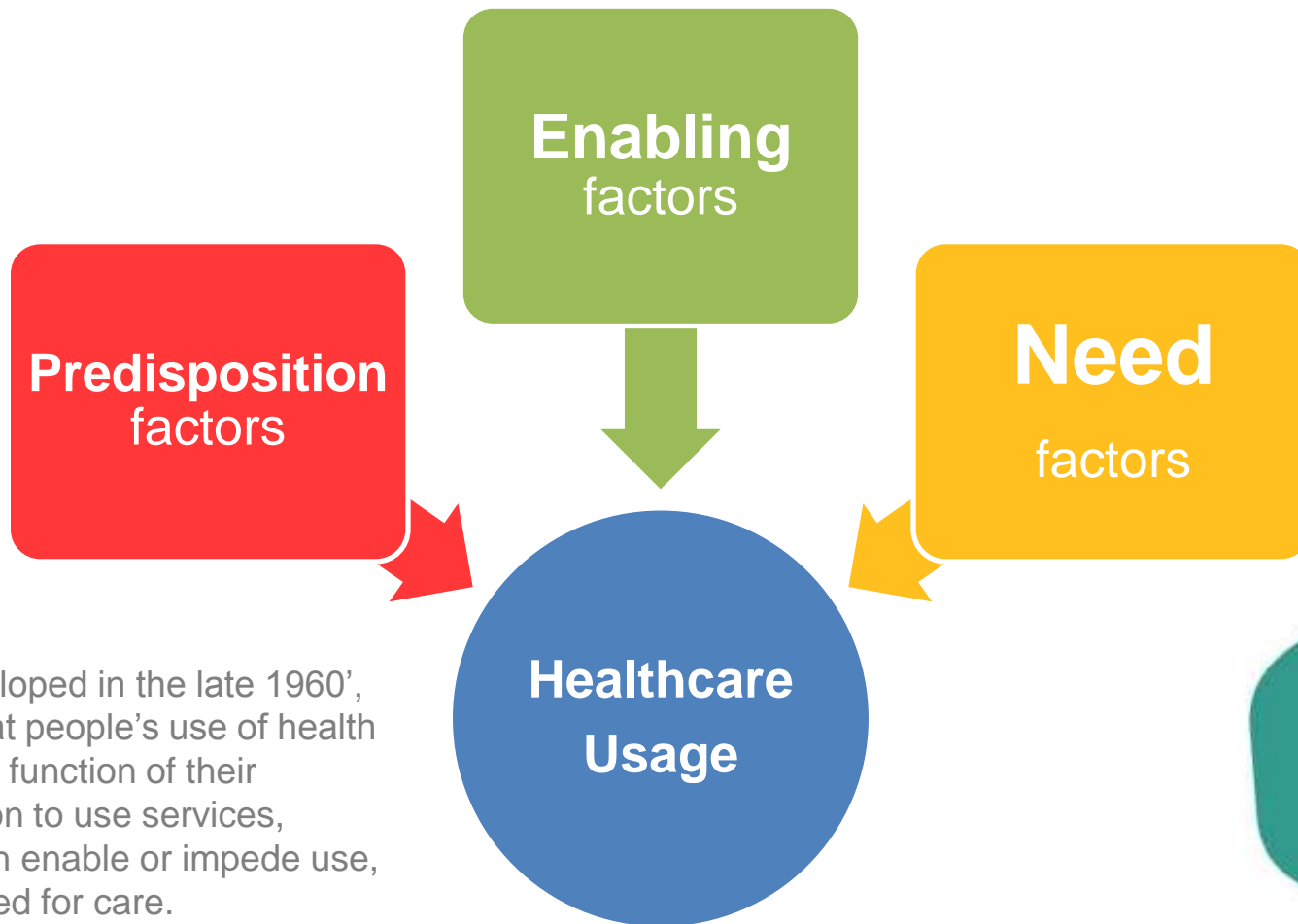Model of Health Care Utilization**

There are both individual and societal determinants to health services utilization.

Andersen Model of Health Care Utilization

Anderson Healthcare Utilization Model
3 Factors of Healthcare

Enabling factors

Predisposition factors

Need factors
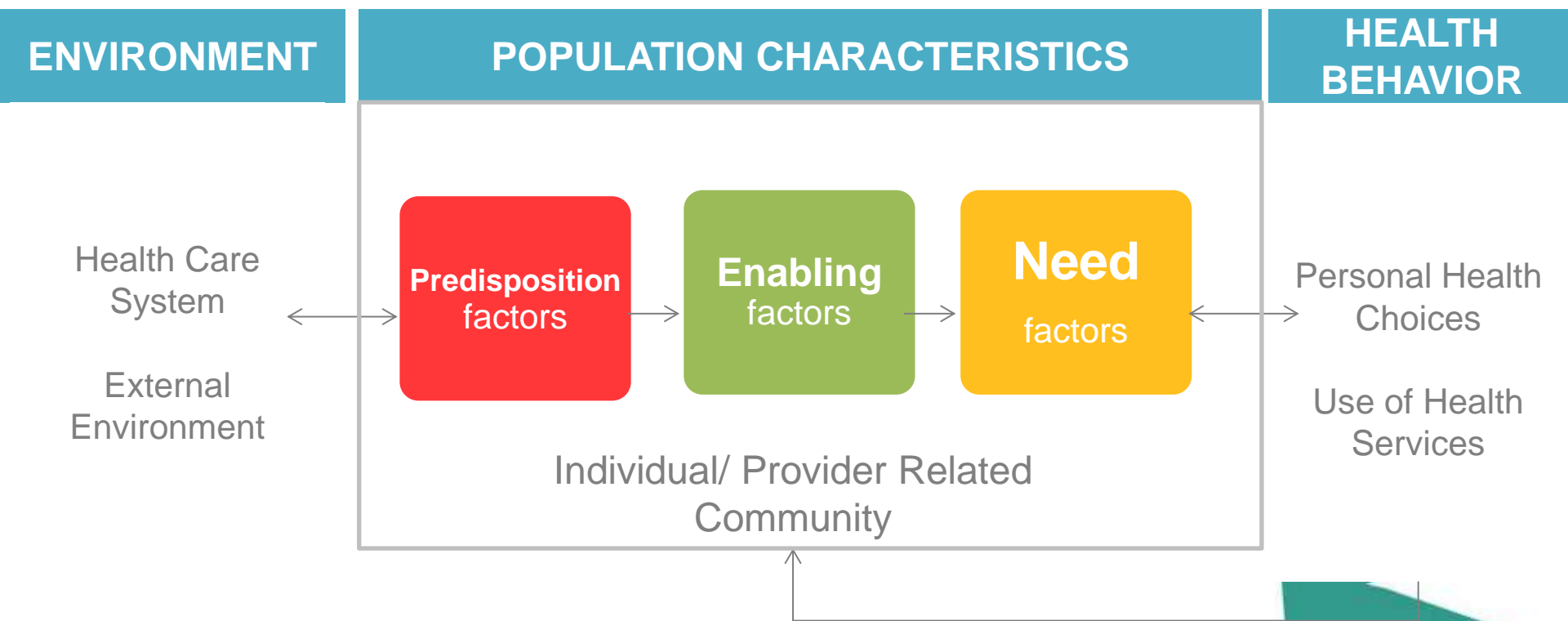
Healthcare Usage

Initially developed in the late 1960', suggests that people's use of health services is a function of their predisposition to use services, factors which enable or impede use, and their need for care.

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Anderson Healthcare Utilization Model
3 Factors of Healthcare

Predisposition factors

- Demographics
- Cultural context
- Spiritual
- Socioeconomic status
- Attitudes
- Experiential

Enabling Factors

- Income
- Insurance
- Transportation
- Access/Availability
- Responsibilities

Need Factors

- Individual's perceived health care need
- Indicators of their health status

Behavioral Healthcare
Behavioral Healthcare Marketing

How?

SOCIAL CULTURAL INTELLIGENCE™

The ability to examine patterns of behavioral, emotional, physical, and spiritual sentiments to identify actionable cross-cultural insights through the patient journey.

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Social Cultural Intelligence™

is

Insight extracted from

BIG DATA

It's the digitization of everything we do

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The Patient Forum.com — SHARING HEALTH

patientslikeme®

HealingWell.com — Community. Support. Resources.

82%

of internet users say they have gone online to find others and interact with those who might have health concerns similar to theirs. (Pew Internet)

2x

According to comScore, Hispanic usage of health care websites is growing twice as fast as the general market.

CAREGIVER ACTION NETWORK

WebMD®

HealthBoards — HEALTH MESSAGE BOARDS

Irritable Bowel Syndrome Self Help and Support Group
a trusted community for IBS and Digestive Health sufferers

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Researching with
Social Cultural Intelligence™

Shifting the research paradigm

TRADITIONAL RESEARCH

NEED · **STUDY** · **DATA**

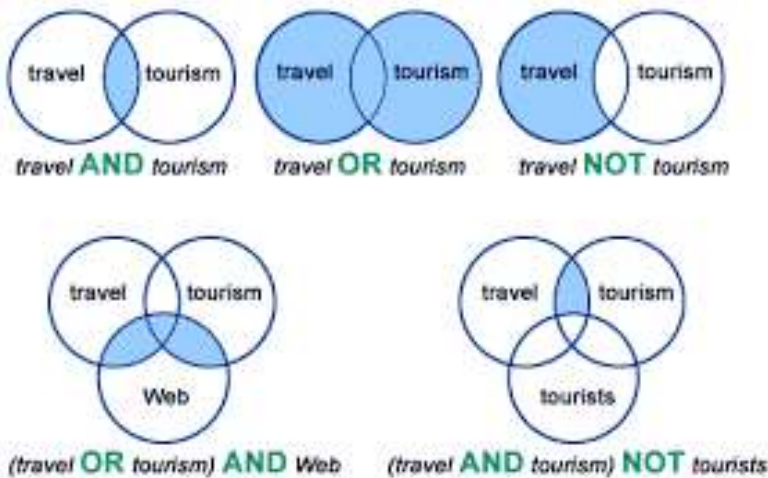SOCIAL INTELLIGENCE

DATA · **NEED** · **STUDY**
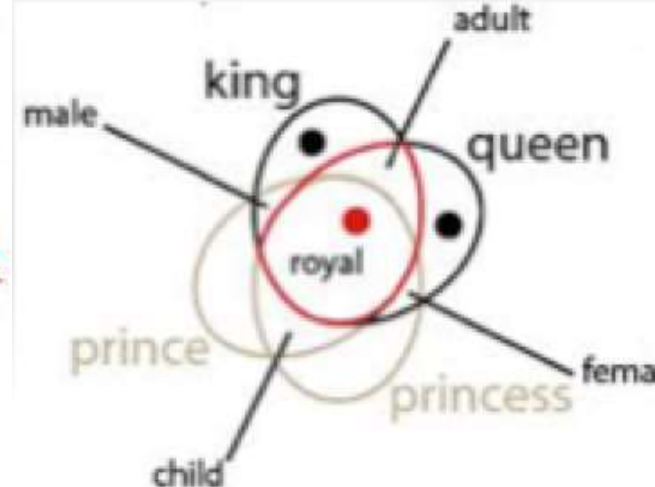
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# 3 lenses of data collection

KEYWORD BOOLEAN   TOPIC/TEXT ANALYTICS   ARTIFICIAL INTELLIGENCE

Search analysis
Keyword spiders
Site Scraping
Text analytics
Artificial Intelligence
Machine learning/tagging
Clustering/relational adjacency analysis

Quantitate evaluation of qualitative organic data

Enabling factors

Predisposition factors

Need factors

Healthcare Usage
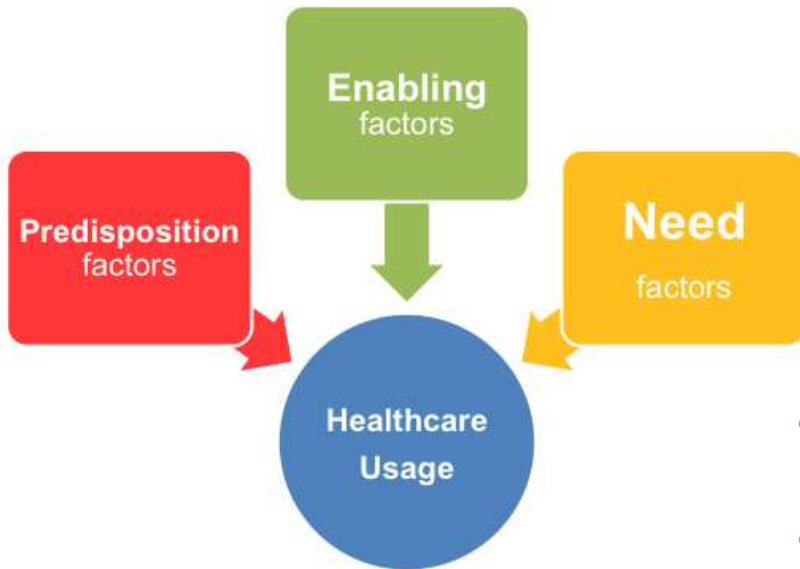
Bringing quantitative insights to the Andersen Model

- **Sufferer Insights**
  - Symptoms
  - Side effects
  - Barriers/drivers
  - Treatment
  - Diagnosis
  - Key issues

  -Opinions
  -Perceptions
  -Experiences
  -Needs
  -Feelings
  -Behaviors

- **Contextual** (underlying motivations)
  - Situational/Practical/Emotional
- **Influencers**
  - HCP's, Family, Friends, Community
- **Caregiver Insights**
- **Segmentation** (age/gender/cultural/etc.)
- **Suffer journeys**

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Isolating key influencing topics to analyze conversations

CONVERSATION TOPICS

EXPERIENCE

RELATIONSHIPS

Symptoms	Treatment	Consequences	Community	Family/Friends	HCPs
• Physical • Cognitive • Psychological • Disease progression	• Contraction • Consideration • Diagnosis • Efficacy • Experience • Duration • Side effects • Concomitant conditions • Testing • Financial • Results	• Daily life • Abilities • Appearance • Future • Emotional well-being • Stigma	• Asking advice • Giving advice • Reporting out • Appreciation	• Concern • Sexuality • Support • Appreciation • Difficulties	• HCP team • Relationship • Medical care

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Mapped through the patient-to-treatment journey™

To identify meaningful interceptions
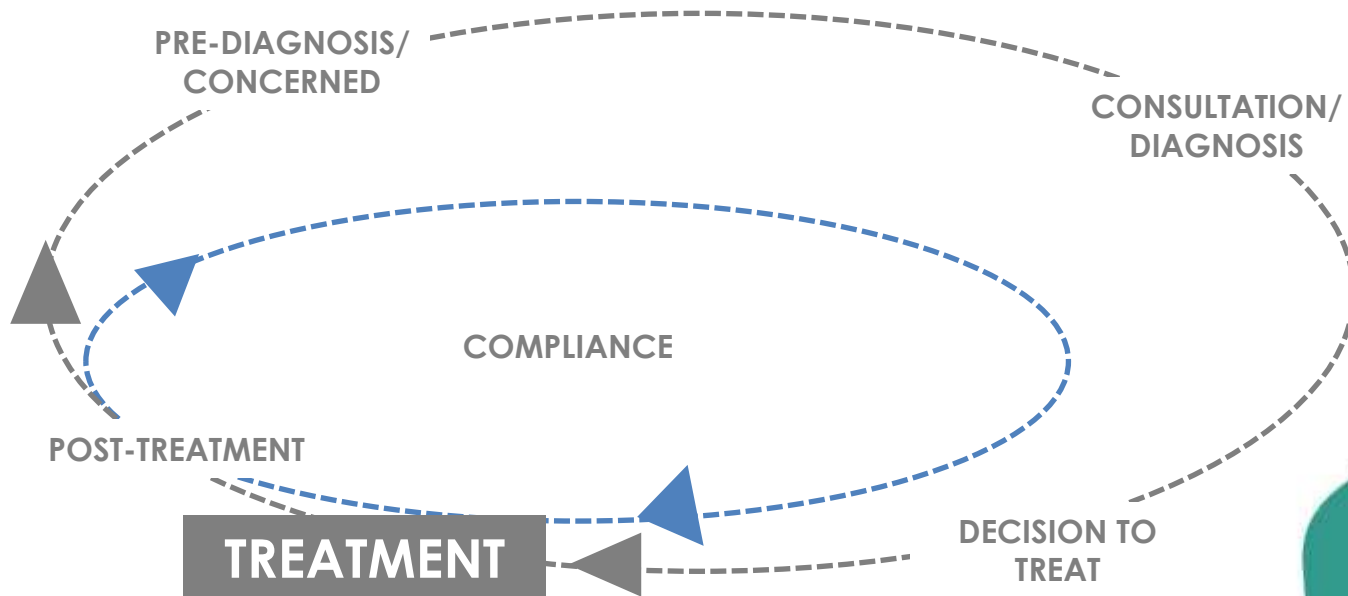
PRE-DIAGNOSIS/
CONCERNED

CONSULTATION/
DIAGNOSIS

COMPLIANCE

POST-TREATMENT

TREATMENT

DECISION TO
TREAT

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See it

In Action

Fresh off the press

Understanding Barriers to Breast Cancer Treatment Using a Novel Social Media Approach

"We present powerful, real world data using this new modality for qualitative research, capitalizing on the rich conversations occurring on-line for patients with breast cancer. Future research should further focus on how to further employ and learn from this type of social intelligence research." - 2015

How is this study different?

- Past examination of barriers to breast cancer treatment receipt has typically been limited to registry or claims-based studies or smaller, survey-based analyses.

THIS STUDY

1,024,041 unique posts related to discussions about breast cancer treatment	Assigned general themes for **958,345** posts	Assigned specific barriers to treatment for **387,238** posts.

Emotional, physical, and spiritual sentiments expressed about breast cancer 1 year (2/1/14-1/31/15).

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Under the hood

Using text analytics, natural language processing, and computational linguistics to extract data from the mining process, key topics and content relationships were examined and categorized into recurring themes, focusing on barriers to breast cancer treatments.

Machine tagging software then tagged and sorted data with regard to demographics (race/ethnicity) per profile information, motivations expressed, and the underlying perspective which allowed for a thematic analysis and an understanding of underlying drivers/barriers to treatment.

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Breast Cancer
Overall Discussion Topics

Overall

diagnosis 28%
treatment 29%
information 19%
prevention 24%

Hispanic

diagnosis 38%
treatment 29%
information 22%
prevention 11%

AfAm

diagnosis 27%
treatment 37%
information 22%
prevention 14%

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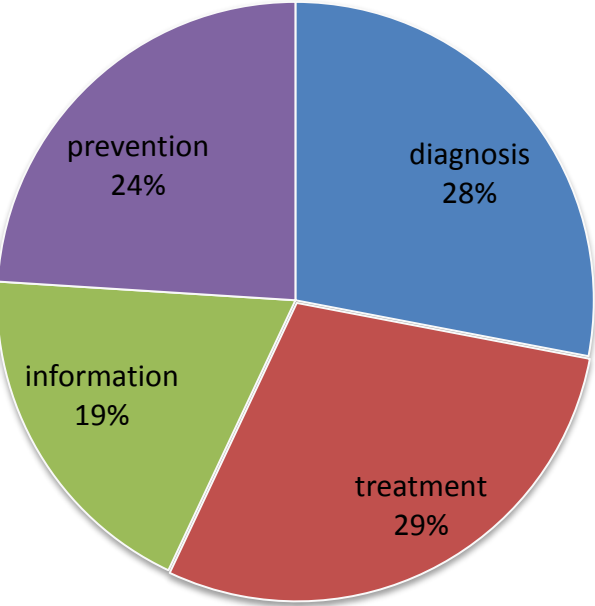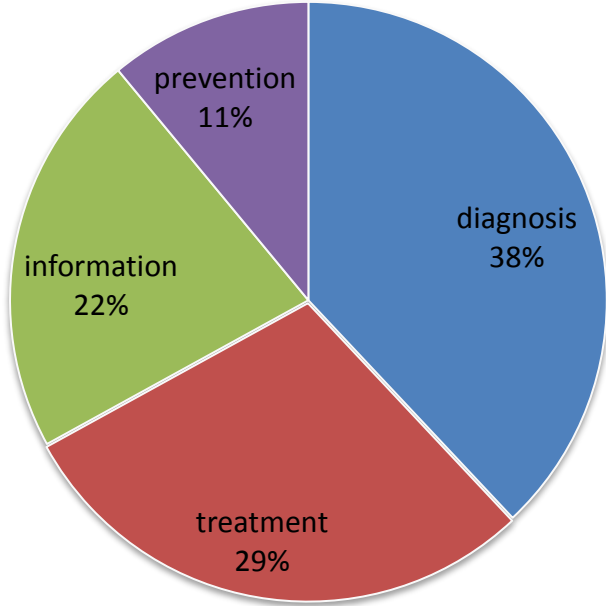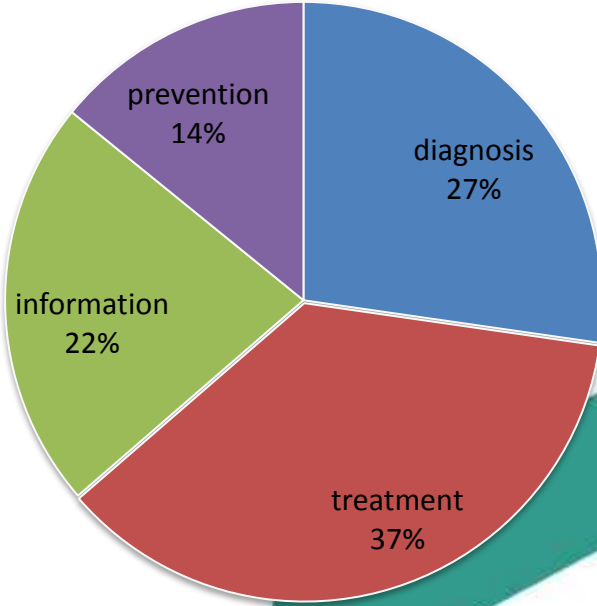
Breast Cancer Treatment Barriers Overall

Process/Duration 7%

Resources 15%

Beliefs 21%

Emotional 23%

Relationships 7%

Physical 18%

HCP Issues 9%

N=387,238

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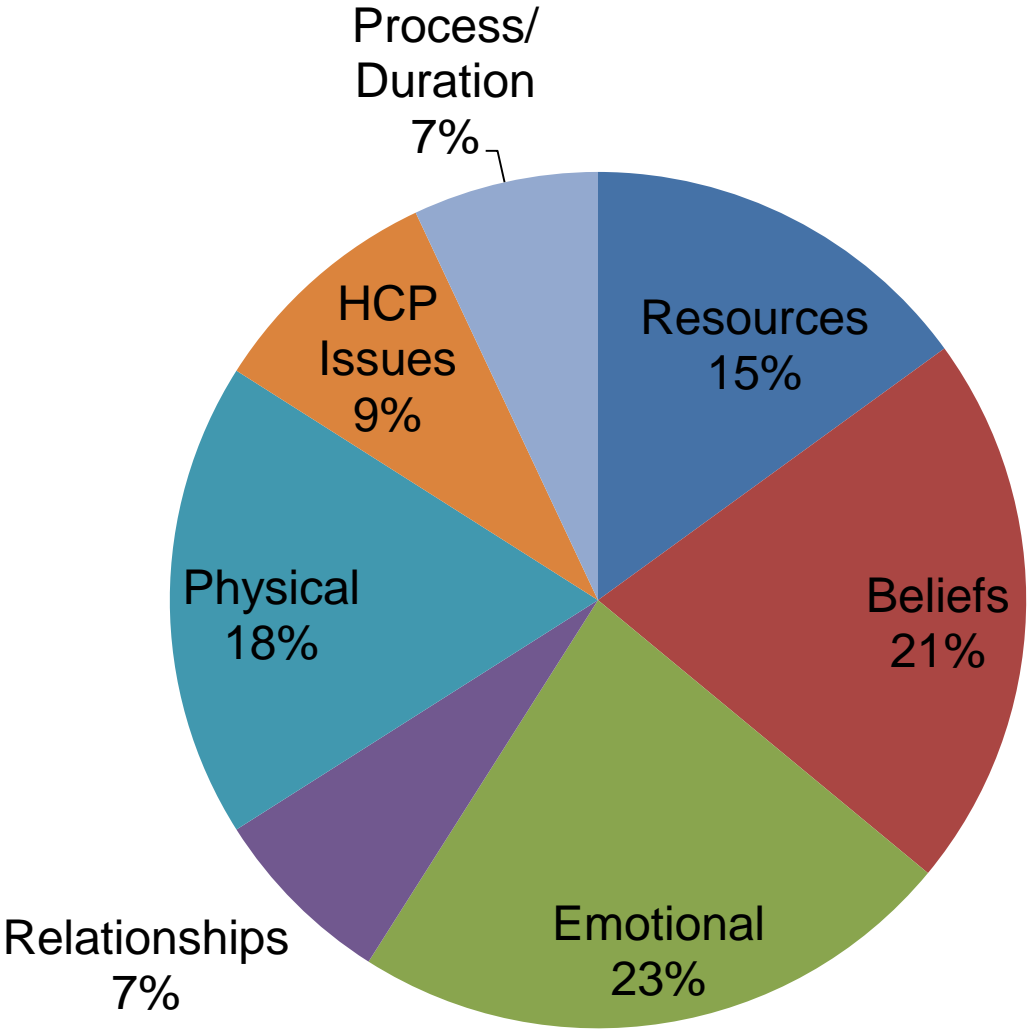
Treatment Barriers Profile by Segment

Legend: resources, beliefs, emotional, relationship, physical, HCP, process

Overall (N=387,238)
- process: 7
- HCP: 9
- physical: 18
- relationship: 7
- emotional: 23
- beliefs: 21
- resources: 15

Hispanic (N= 17,425)
- process: 7
- HCP: 13
- physical: 9
- relationship: 11
- emotional: 14
- beliefs: 24
- resources: 22

AfAm (N= 34,464)
- process: 6
- HCP: 13
- physical: 6
- relationship: 9
- emotional: 17
- beliefs: 25
- resources: 24

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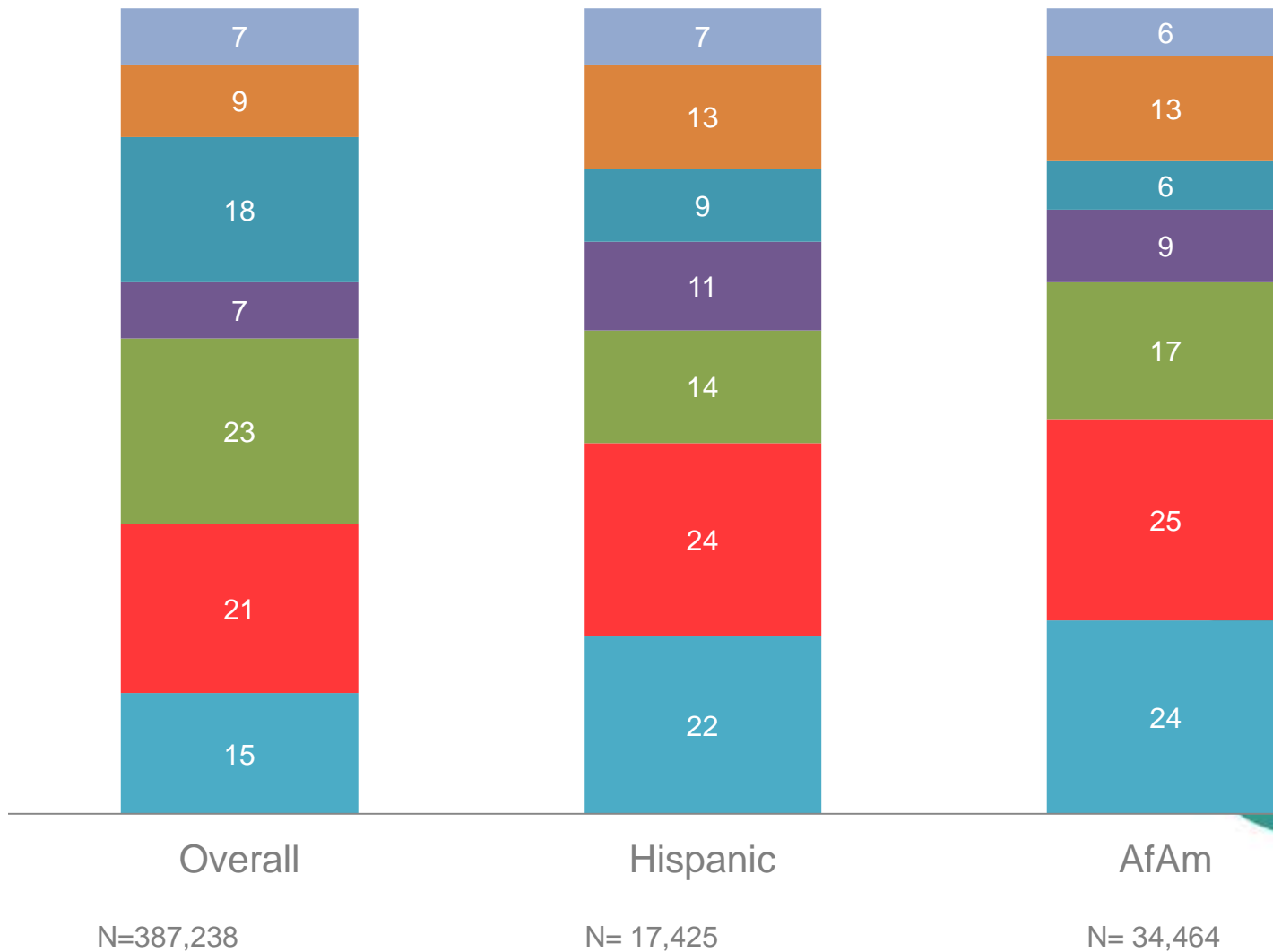
Breast Cancer Treatment Barrier Drivers

HCP perspective

Circumstantial
- insurance
- job
- income
- accessibility
- responsibilities

organizational

situational

socio-cultural

psychological

Belief systems
- gender
- family
- sickness
- cultural
- spiritual

Emotionally driven

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Breast Cancer "Sufferer Journey" Barrier Profile

Legend:
- situational (purple)
- psychological (green)
- socio-cultural (red)
- organizational (blue)

X-axis categories: prediagnosis, diagnosis, assesment, decision to treat, treatment

Y-axis: 0% to 100%

N= 627,381

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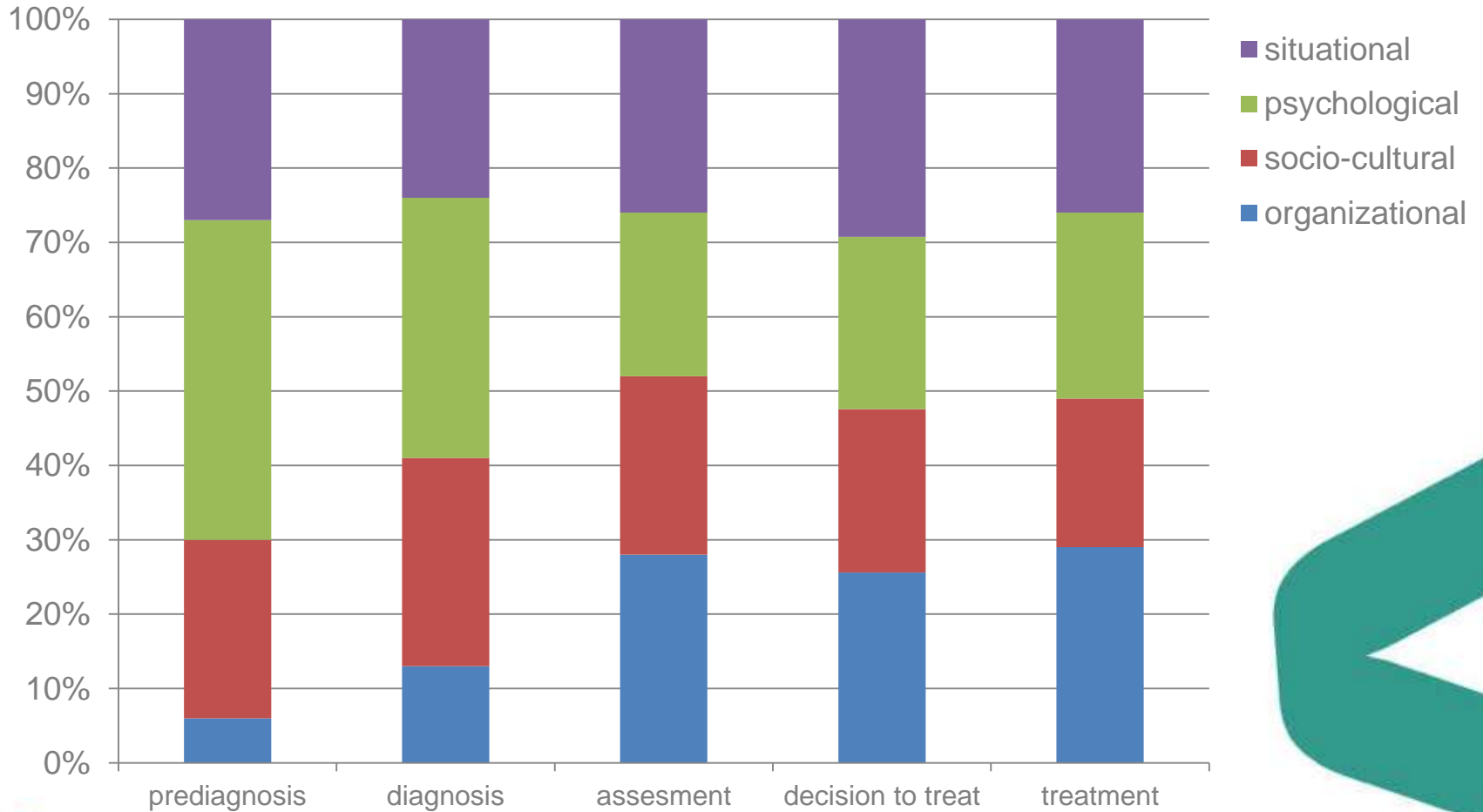
Barrier Profile by Breast Cancer Sufferer Journey Stage

Overall

Stages: prediagnosis, diagnosis, assesment, decision to treat, treatment

Legend: situational, psychological, socio-cultural, organizational

Hispanic

Stages: prediagnosis, diagnosis, assesment, decision to treat, treatment

Legend: situational, psychological, socio-cultural, organizational

African American

Stages: prediagnosis, diagnosis, assesment, decision to treat, treatment

Legend: situational, psychological, socio-cultural, organizational

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Sample emotional drivers by segment

FEAR

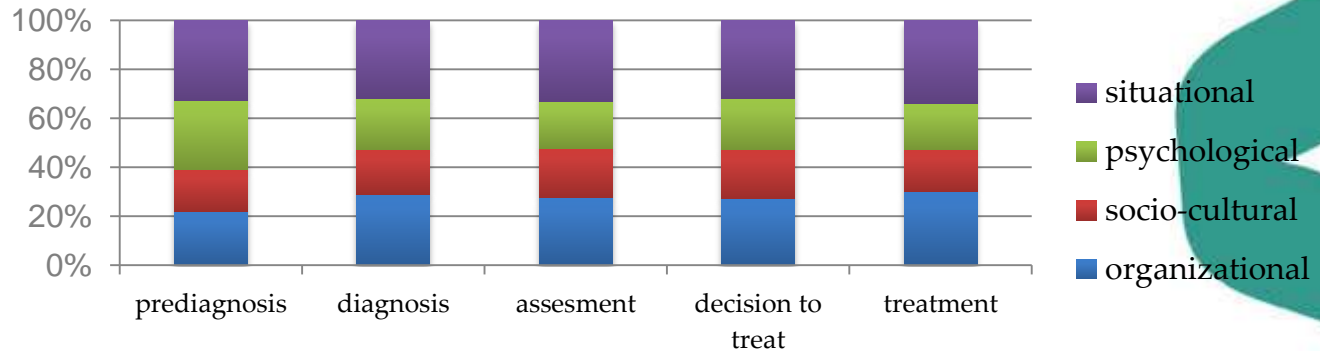35% OVERALL
37% HISPANIC
27% AA

DENIAL

32% BLACK
26% HISPANIC
13% OVERALL

"Breast cancer is a white woman's disease"

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Sample belief systems by segment

SPIRITUAL

Religious sentiments about treatment

41% HISPANICS

31% AA

HEALTH CARE PERCEPTIONS

43% AA
36% HISPANIC
29% OVERALL

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Sample physical concerns by segment

SIDE EFFECTS

Less often among minorities
30% AA
29% HISPANIC
40% OVERALL

BODY IMAGE

Most apparent by Hispanics
36% HISPANIC

"I won't feel like a whole woman anymore"

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Sample health care perception barriers by segment

Communication 38%
Trust 24% and
Accessibility 22%

ACCESIBILITY

Concerns mostly raised by minorities

29% AA + HISPANIC

22% OVERALL

I don't always have someone to watch their kids when they go in for an appointment.

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Now what?

Behavioral Healthcare Marketing

Takes into consideration the effects of psychological, social, cognitive, and emotional factors on the healthcare decisions of individuals and institutions and the consequences for better access and outcomes.

Proprietary XL Alliance

+ access

+ interceptions

+ outcomes

A new behavioral marketing mix through
patient-to-treatment journey™
by segment

	PRE-DIAGNOSIS	DIAGNOSIS	ASSESSMENT	TREATMENT	POST TREATMENT
Situational			✓		✓
Psychological	✓			✓	
Socio-cultural		✓		✓	
Organizational			✓		

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Adding value to all stakeholders

PHARMA	SYSTEMS OF CARE	PAYORS	ASSOCIATIONS

- Identify the right topical discussions across segments to translate into content, tool and marketing strategies
- Development of integrated health programs aligning to related conditions and symptoms
- Identify tonality and language to deliver culturally relevant messaging around topics based on sentiment and cultural nuances
- Identify relevant stages to introduce tools, programs, and channels to intercept and influence patients through the treatment-journey
- Identify the channels and influences that impact each segment
- Opportunity to run pre and post studies to evaluate campaign/ program impact
- Opportunity to dive deeper into geo-targeted and micro targeted topics and communities
- And more…

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Thank You!

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