

A Population-Based, Risk-Adjusted Model for Forecasting Psychological Health Provider Workforce Needs

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Outline

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 - ❖ Psychological Health Risk Adjusted Model for Staffing
- Approach to developing PHRAMS
- PHRAMS overview and flow diagram
- User application
 - ❖ Selecting reports
 - ❖ Modifying soft-wired parameters
- Principal findings
- Conclusions and implications

Introduction

- Psychological stresses of current operations in Iraq and Afghanistan
- Need to assure adequate workforce to meet psychological healthcare requirements of service members, their families, and other beneficiaries eligible to receive care through Defense Health Plan (DHP)
 - ❖ Under new vision of providing this care
- Congress and Department of Defense (DoD) interested in knowing adequacy of current workforce resources
- DoD and Service medical departments need tool to assist workforce planning
- Resulted in creation of PHRAMS

What is PHRAMS?

- The **P**sychological **H**ealth **R**isk-**A**adjusted **M**odel for **S**taffing
- Major attributes:
 - ❖ Population-based
 - ❖ Risk-adjusted
 - ❖ Scalable/modifiable
- Produces projections of:
 - ❖ Required number and mix of providers (staffing requirements)
 - ❖ To meet annual needs for psychological health services
 - ❖ Of all 9.3M Defense Health Plan (DHP) beneficiaries
- Planning and modeling tool
 - ❖ User application with modifiable “soft-wired” parameters
 - ❖ Can be annually updated
 - Refresh data and update trends

What does PHRAMS produce?

- Annual projected staffing requirements
 - ❖ Projects over a six-year planning horizon
 - ❖ Projects staffing requirement by provider type
 - Mental health specialties, primary care, others
 - Projections take into account expected productivity
- Standard reports
 - ❖ Longitudinal and Year 1
 - Year 1 reports include a “gap analysis”
 - ❖ Can use default values for parameters or modify them for modeling purposes
 - ❖ Can select level of aggregation
 - Primary planning units or aggregations of units up to system-wide
 - ❖ One branch of Service or all branches

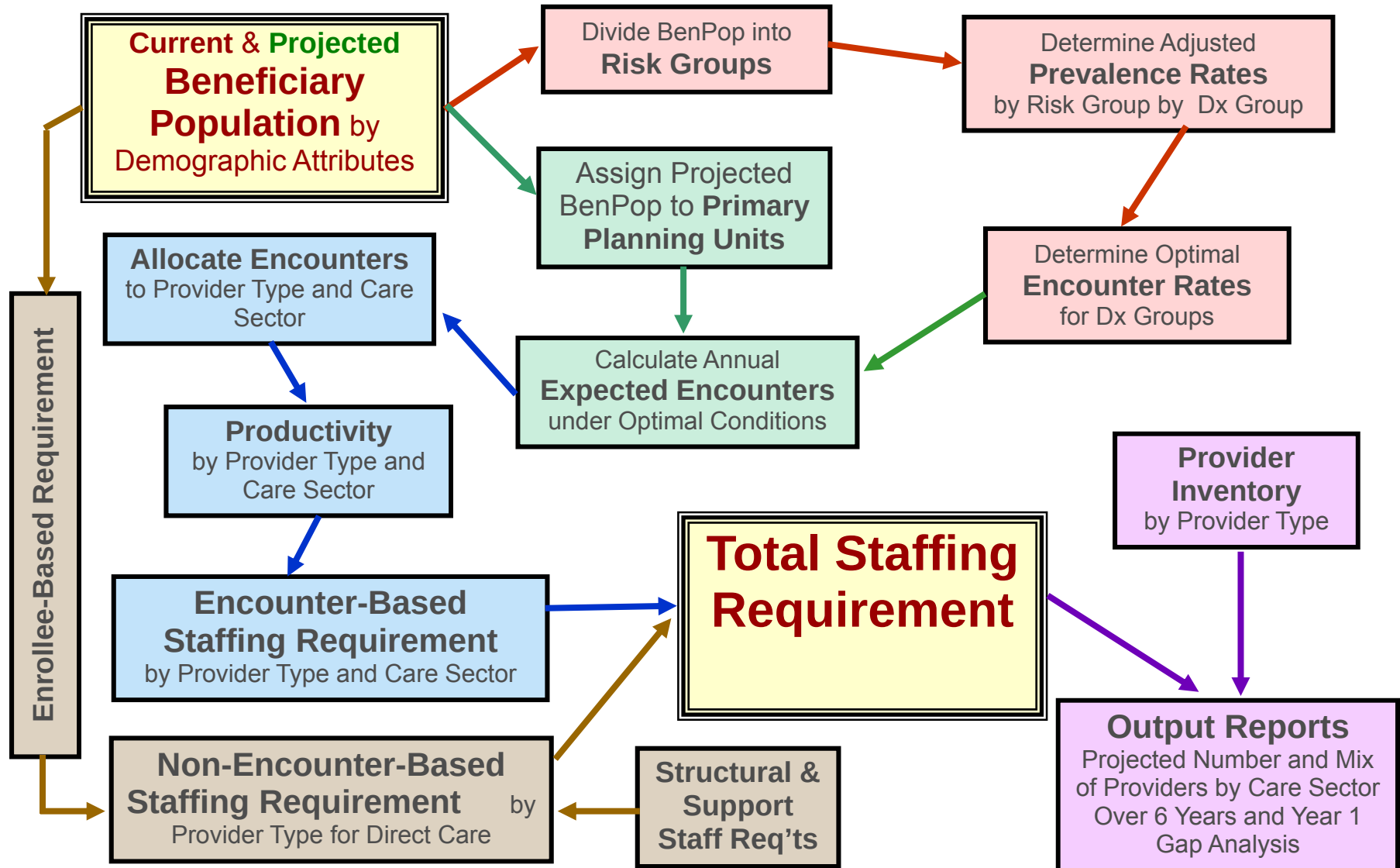
Approach to developing PHRAMS

- Reviewed literature and existing staffing models
 - ❖ Both military and civilian models
- Conducted key informant interviews
 - ❖ Clinical, workforce, and management staff
- Analysis of prevalence and utilization by risk-adjusted populations of DHP beneficiaries
 - ❖ Grouped by demographic and military-related attributes
 - Age, gender, residence, type of plan enrolled in, beneficiary category, rank group (SES), Branch of Service,
 - Deployment history/exposure to deployment stress (and trends)
 - ❖ Prevalence and utilization trend lines and projections
- Extensive input from working group of end users

PHRAMS overview

- Total staffing requirement =
 - ❖ Encounter based + non-encounter based requirements
- Encounter based requirement =
 - ❖ Expected encounters / productivity
- Expected encounters =
 - ❖ $\sum_{i,j} (\text{population}_i * \text{prevalence}_{i,j} * \text{encounter rate}_j)$
 - Where i = risk group and j = psychological health diagnosis group
 - ❖ Encounters allocated to provider type
 - ❖ Encounters can be directly provided or purchased
- Non-encounter based requirement =
 - ❖ Enrollee-based + structural unit + support staff requirements
 - ❖ Allocated to provider type for “direct care” sector only

PHRAMS Flow diagram



PHRAMS user application

- CD-based MS Access application with users guide
 - ❖ Select the required “report parameters”
 - Service
 - Planning unit level
 - Type of report
 - ❖ Accept or edit (modify) soft parameter default values
 - Prevalence rate adjustment for untreated prevalence
 - Percentage distribution in deployment history groups
 - Provider productivity metrics
 - Annual hours available for providing care
 - Encounters per hour
 - Percentage of encounters apportioned to direct and purchased care
 - Percentage of direct care providers who are civilians

Principal findings

- PHRAMS performed as expected and produced usable and realistic results
- End users were able to use the application for planning
- Sensitivity analysis revealed key drivers of staffing needs
 - ❖ Analysis focused on direct care requirements (not purchased care)
 - ❖ PHRAMS projected requirements most sensitive to:
 - Population growth projections
 - Treated prevalence projections
 - Provider productivity
 - “Make-or-buy” decisions or policies
 - Provide care directly or purchase it

Conclusions and implications

- Possible to create a usable model to project psychological health workforce requirements using administrative & medical records and input from end users
- Such models can be used to respond to planning and policy analysis needs
 - ❖ Can be used by such entities as integrated delivery systems, accountable care organizations, managed care organizations, government healthcare workforce policy agencies, and provider specialty societies
 - ❖ Can be used for workforce planning, provider recruitment, identification of gaps in current workforce and workforce shortage areas, workforce policy analysis, make-or-buy (provide-or-purchase) decisions

Questions

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