

SKILLED TECHNICAL WORKFORCE: DEMAND, SUPPLY, & PATHWAYS A CASE STUDY

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What skills are needed to enter in-demand jobs in the Skilled Technical Workforce? How does skill supply match with demand?

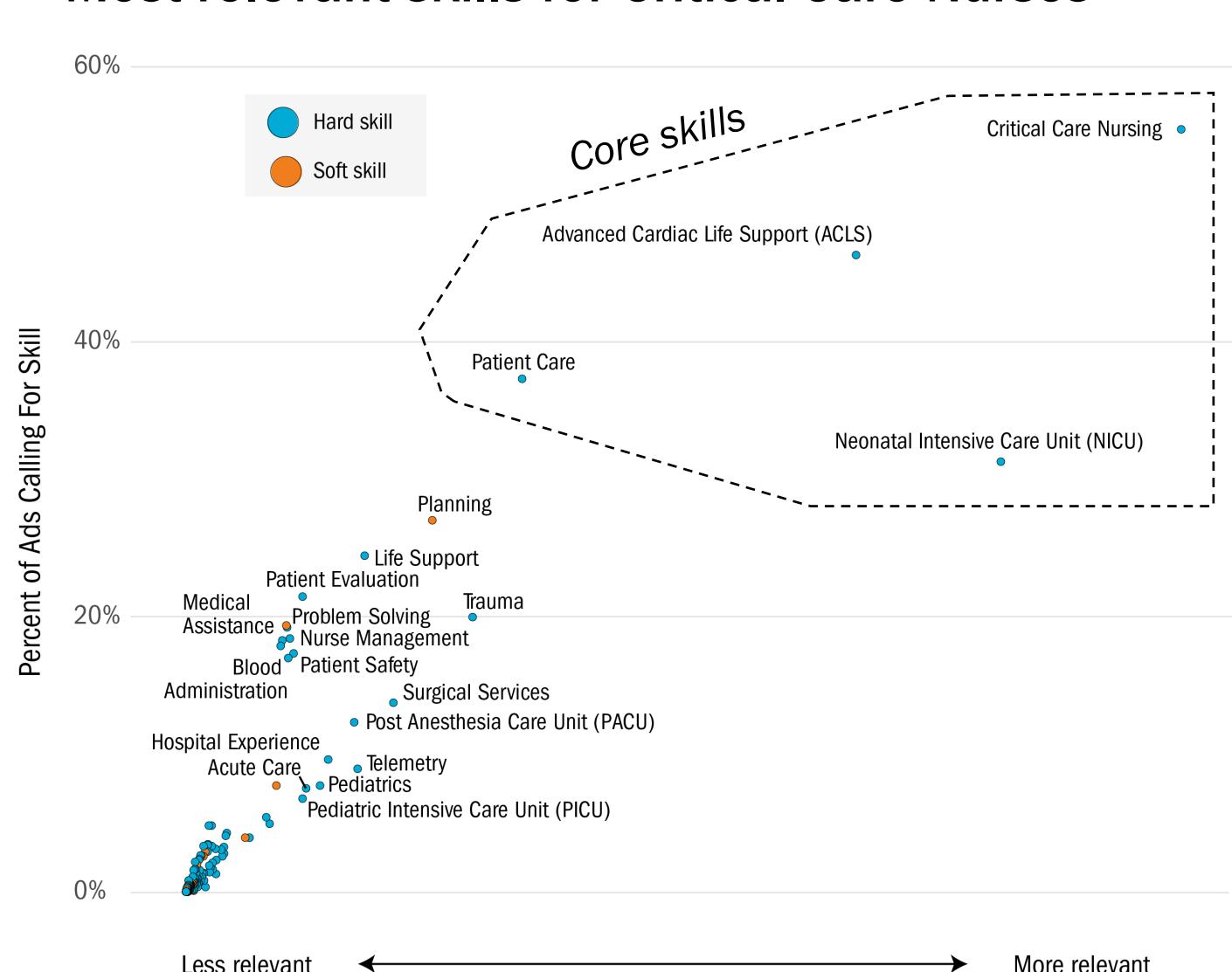
Skilled Technical Work (STW) requires a high degree of technical knowledge, but does not necessarily require a bachelor's degree. Skilled technical occupations offer a path to the middle class for workers without four-year degrees.

Our Research

- Worked with data from **Burning Glass Technologies (BGT)**, which scrapes online job advertisements and resumes from over 50,000 sites.
- Our research focused on two metropolitan areas in Virginia: Richmond and Blacksburg-Christiansburg-Radford.
- Identified online job ads for STW occupations that did not require a bachelor's degree
- Critical Care Nurses were the most commonly advertised STW occupation
- Identified resumes of plausible critical care nursing candidates, which listed at least one core skill for the occupation
- Richmond Population: 1,292, 911; CCN Resumes 3,150; CCN Ads: 1,609
- Blacksburg Population: 182,692; CCN Resumes: 266; CCN Ads: 245

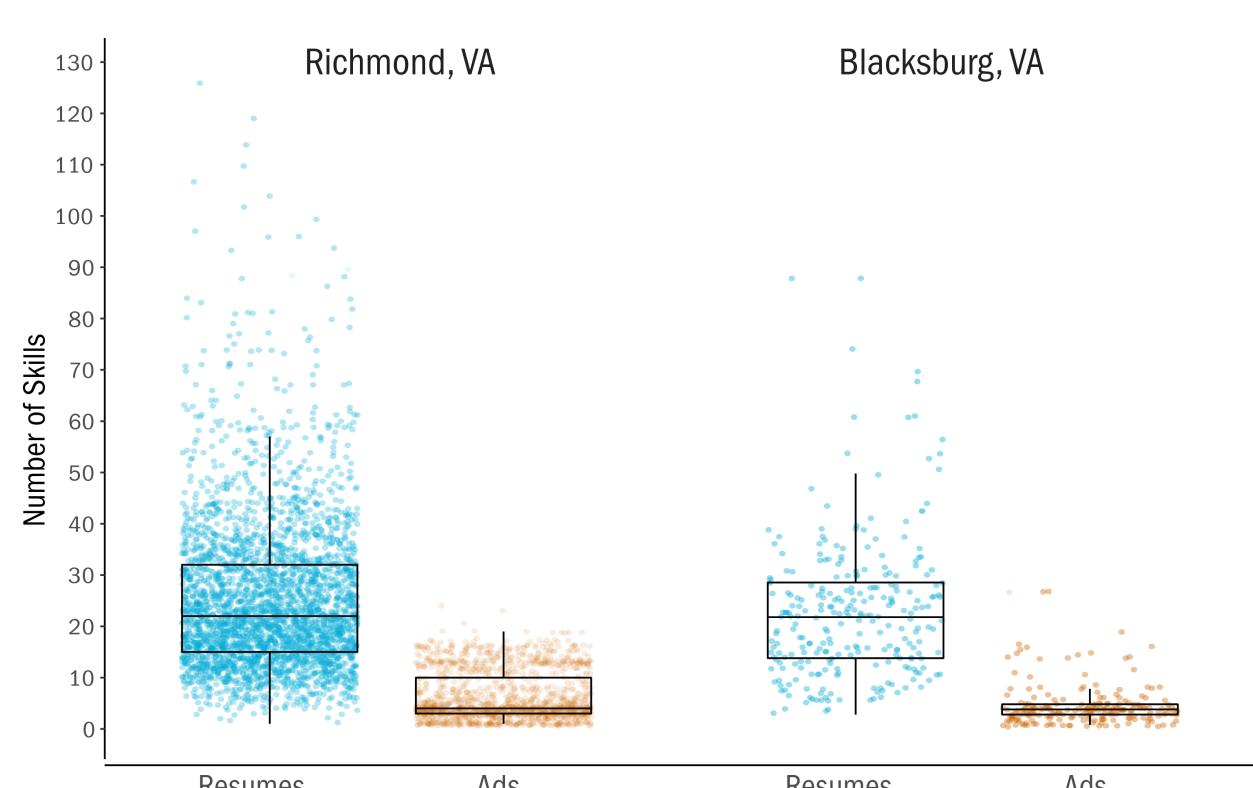
Neonatal Intensive Care Needed: Critical Care Nurses in Richmond, 2016-2017

Most relevant skills for Critical Care Nurses

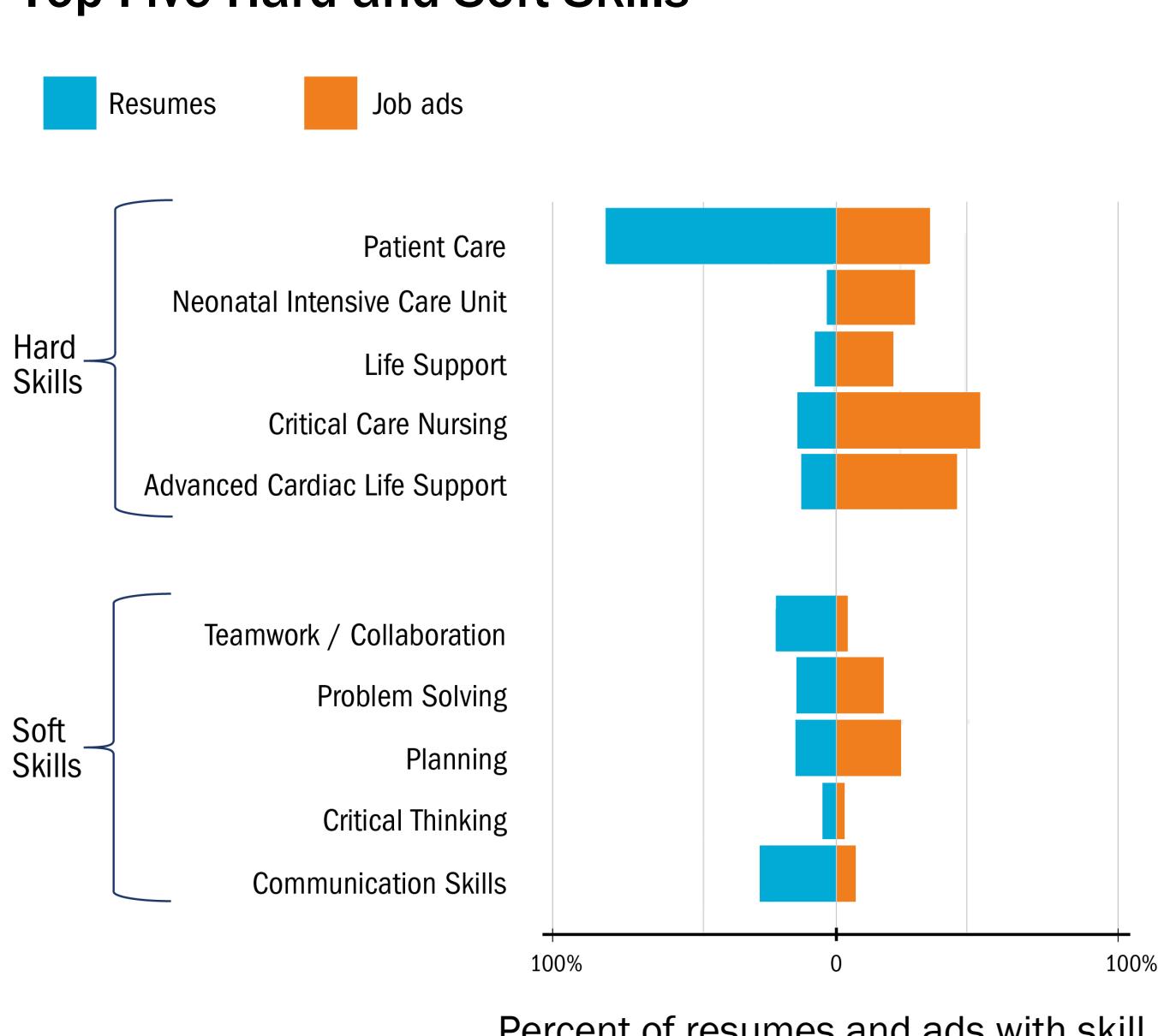


Count of Skills on Job Ads and Resumes

Resumes listed many more skills than job ads in both MSAs



Top Five Hard and Soft Skills



Matching Job Ads and Resumes

- Calculated the proportion of desired skills in each job that each candidate fulfilled (*match score*) and plotted the matches of all plausible candidates to Critical Care Nursing positions in Richmond (right).
- Training in the Neonatal Intensive Care Unit (NICU) skill would have the largest impact on improving match scores (below).

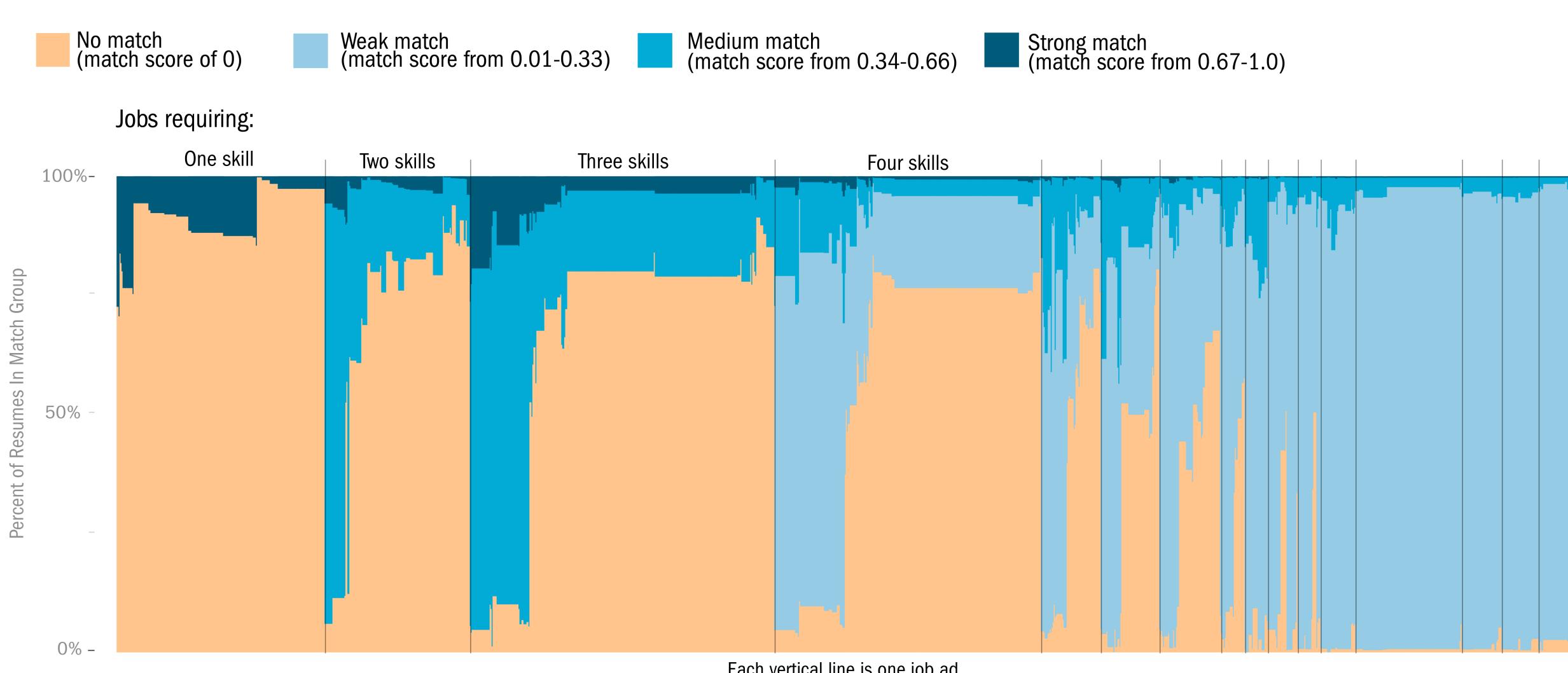
How to Read

Each vertical line is one job. The colored segments within each line show how many candidates matched to that job at a certain level.

- 10% of candidates had a strong match to this job (67-100% of requested skills)
- 20% of candidates had a medium match to this job (34-66% of requested skills)
- 45% of candidates had a weak match to this job (1-33% of requested skills)
- 25% of candidates no match to this job (none of the requested skills)

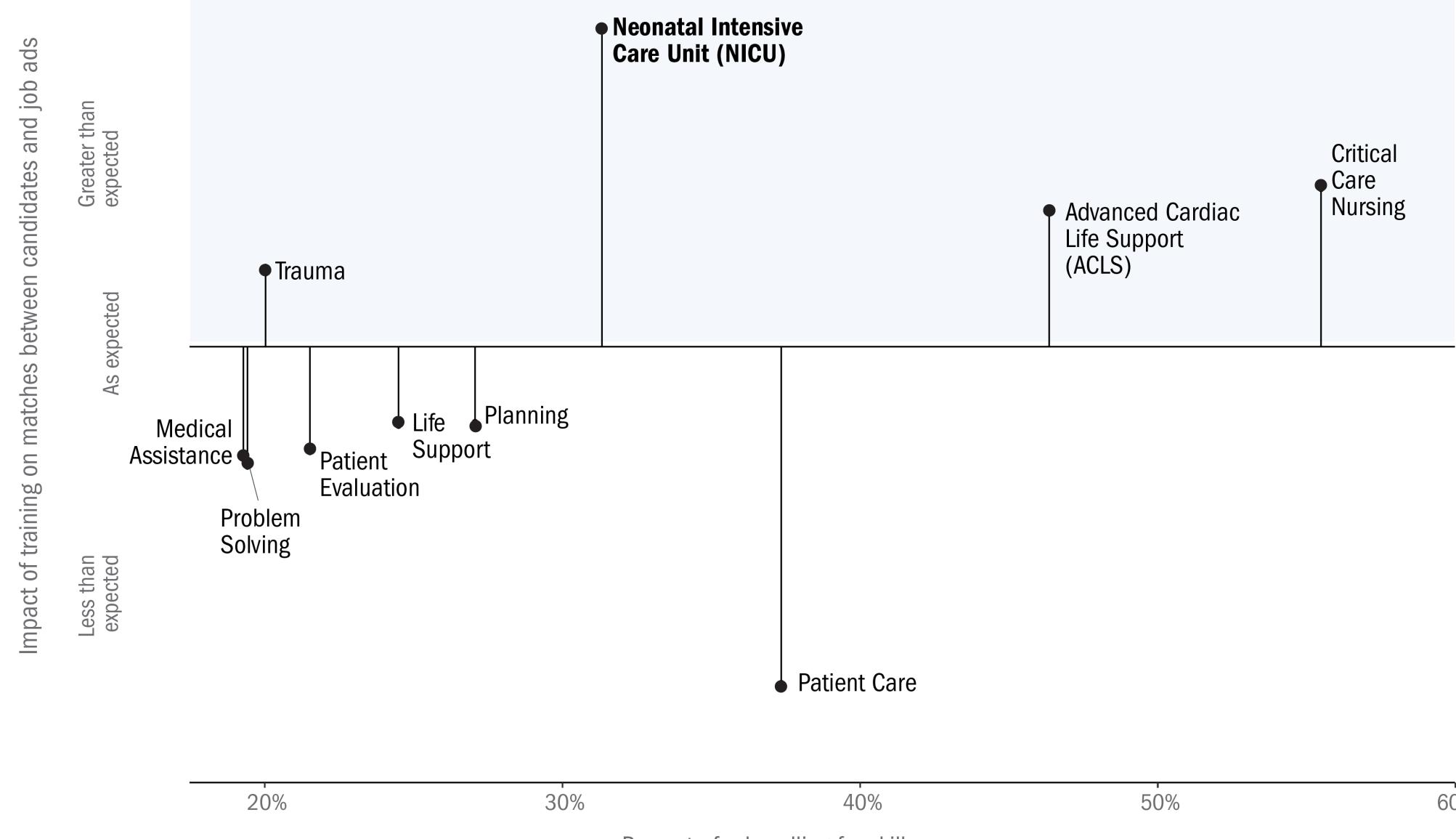
Matches between job ads and candidates: Critical Care Nurses

1,609 job ads matched to 3,150 candidates in Richmond, VA



Impact of skill training on matches to Critical Care Nursing jobs

Richmond, VA, 2016-2017



Pathways to Critical Care Nursing

- Candidates must have first be registered nurses (RN). Six institutions in Richmond and one in Blacksburg offer associate's degrees in nursing.
- An RN can complete a Critical Care Nurse Certification (CCRN) or a Neonatal Intensive Care Nursing certification (RNC-NIC) by working with their target patient population and passing an exam.

