**Patriot Pay Estimation Strategy Walkthrough**

1. **Designation of "Essential Workers"**
    a. Used DHS's critical infrastructure and essential workers guidance, which contains describes in broad terms the sorts of industries that are likely to be designated as "essential".
    b. Matched these to the IPUMS-CPS Industry codes.
        i. Hewed closely to Brookings' interpretation, following their reasoning that industries better characterized "essential workers" than specific occupations. This is because many undoubtedly essential occupations rely upon positions that may not be essential in other contexts. You can find the full list of industries designated below.
            1. Link: Essential industry designations list

2. **Benefit Eligibility**
    a. Class of workers
        i. The benefit was restricted to salaried employees in the private non-profit and private for-profit sectors of the economy. This method intentionally omits government employees as well as self-employed professions, such as contractors.
    b. Annualized wages
        i. For workers paid hourly, multiply that by usual weekly hours worked. For salaried workers, use weekly wages. This results in an estimate of weekly wages for all workers in the economy. Multiply this value by 52 to obtain annualized wages.
            1. **Note:** Identifying who exactly increased their wages in response to COVID-19 was complicated by the lack of available post-crisis data. Ideally, the April 2020 CPS would be out and I'd be able to create an hours adjustment with that. I assumed that hours were generally above typical levels for essential works, opting to take the greater of the following in the annualized wage calculations:
                a. 1) usual hours worked
                b. 2) hours worked in the last week.
    c. Inclusive Hours Worked Threshold
        i. Again, with the assumption that worker hours are generally above their typical level. I took the greater of:
            1. 1) hours worked last week;
            2. 2) usual hours worked.
        ii. If either of these were above 25hrs weekly, the worker was deemed eligible.

3. **Benefit Size Function**
    a. For workers with annualized wages up to $50,000 that work more than the hours threshold
        i. Multiply employees' weekly hours (again, using the inclusive definition of hours) by 4 to get the monthly hours, then multiply this by 9 to get the monthly refundable benefit, capped to a maximum of $1440.
    b. For workers with annualized wages between $50,000 and $90,000 that work more than the hours threshold.
        i. Within this annualized income range. Take the benefit function above, incorporate the following phase-out function
            1. Phase-out function.
                a. Take the annualized wages, subtract 50,000 from it to obtain income above the beginning of the phase-out range. Multiply this area above the threshold by 4.8% ($24 of phased out benefit for every $500 of income). Subtract this function from the basic benefit function.
                b. Placed a bottom-threshold of $0 on benefits and a top-threshold of $1440.

        i. At certain hours/incomes ratios, the benefit can phaseout well before the $90,000 upper threshold.
    c. Above $90,000 in annualized wages, workers received a benefit of $0.

4. **Applying essential care adjustment to benefit function**
    a. Multiply each worker's benefit by the "Share of Essential Workers Adjustment" to obtain the final estimate of the essential-worker-probability-adjusted benefit.

5. **Estimate the total refundable benefit cost.**
    a. Sum the adjusted benefit across the CPS universe, resulting in a total benefit calculation for the whole economy.
    b. Deflate total cost by ~5% to account for employment contraction in essential sectors, based on a rough estimate using initial jobless claims matched to NAICS.