

# Developing an Adult Criminal Justice Population Projection Model For the State of Connecticut

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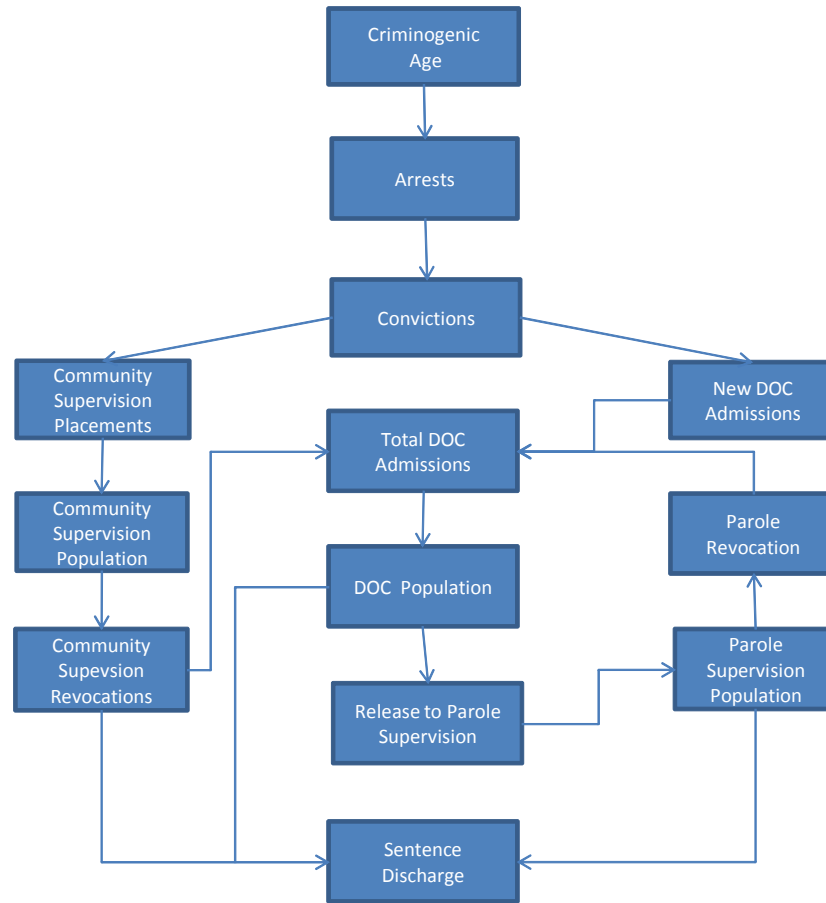
# Objective

- Provide an overview of an adult criminal justice population forecasting model that is policy sensitive

# Policy Sensitive

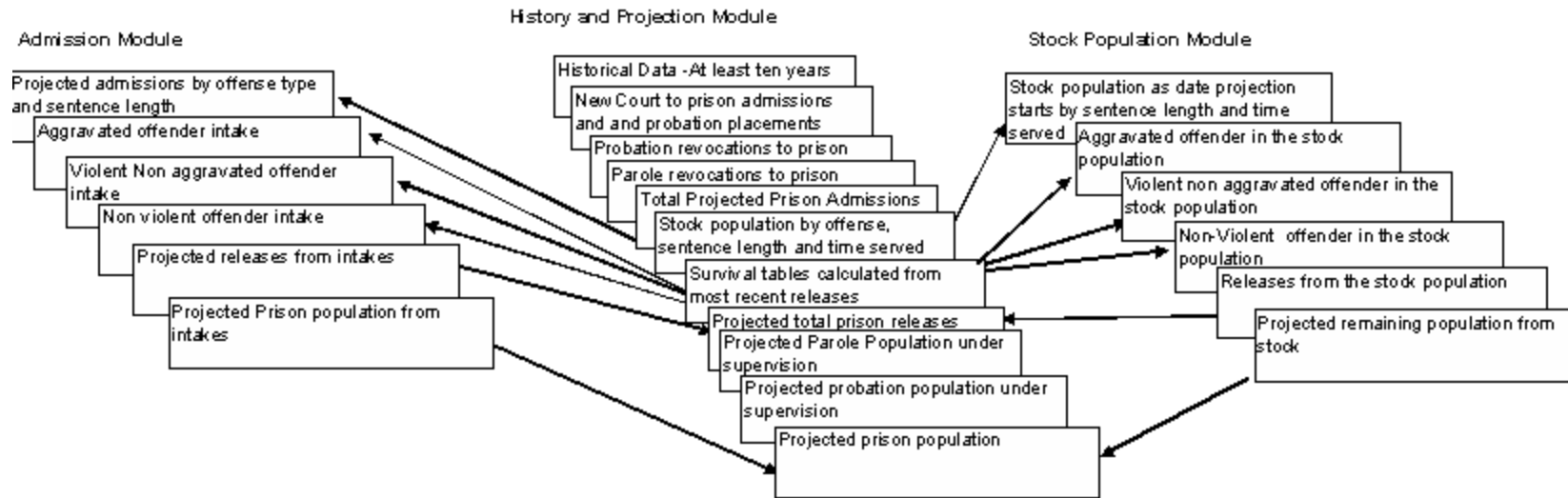
- Ability to answer “what if” type of questions
  - Some examples: What is the impact on the prison, probation and parole populations if:
    - the parole approval rate declines by 20%
    - parole is abolished?
    - eligibility for parole changes from the 50% percent of time served to 25%?
    - parole or probation technical violator decrease by 20%?
    - certain offenses are excluded from parole release and a mandatory minimum of ten years is required?

# General Overview: The Flow of the System



# The Components of the Model

**Figure 1**  
**Conceptualization of the Prison, Probation and Parole Populations projection model**



# Module I: The Intake Module

- It includes:
  - A. Developing the equations and processes to arrive at a prison admission number as well as felony probation intakes
  - B. Producing the flow model that provides:
    - the population from intake and
    - releases from intake

# Module I

## A- Producing the Prison Admission Formula

- Admissions to prison are comprised of at least three major components:
  - New admissions to prison
    - Offenders who have not been under the CJ system prior to committing the offense for which they were sentenced to prison
  - Probation revocations
    - Failures of community supervision
  - Parole revocations
    - Failures of parole/mandatory release supervision

# Module I: New Prison Admissions

- Examine relationships between population age cohorts, arrests and convictions
- Other variables may be included in the equation, such as :
  - Unemployment rate
  - Inflation rate



# Module I:

## Separating Confinement from Community Supervision

- Calculate prison and community supervision probability
  - Analyze historical relationship between confinement and supervision probabilities
  - Determine if the most recent year is the best fit
  - Use the proportion for each to calculate community supervision placements and confinement admissions

# Module I: Probation Revocations

- Use five year cohorts:
  - One year (for offenders placed on probation 12 to 23 months ago)
  - Two year (for offenders placed on probation 24 to 35 months ago)
  - Three year cohort (for offenders placed on probation 36 to 47 months ago)
  - Four year cohort ( for offenders placed on probation 48 to 59 months ago)
  - Five year cohort (for offenders placed on probation 60 to 72 months ago)

# Module I: Parole Revocations

- Same methodology as for probation revocation, use five year cohorts:
  - One year (for offenders released 12 to 23 months ago)
  - Two year (for offenders released 24 to 35 months ago)
  - Three year cohort (for offenders released 36 to 47 months ago)
  - Four year cohort ( for offenders released 48 to 59 months ago)
  - Five year cohort (for offenders released 60 to 72 months ago)

# Module I: Projections of Parole and Probation Revocations

- Use the five year survival rate for each month and multiply that by the cohort of offenders placed on supervision or released on parole

# Module I: Total Admissions

- Total admissions are calculated by:
  - adding the new intakes to confinement
  - PLUS
  - Probation revocations
  - Plus
  - Parole revocations

# Module I: Determining the Composition of DOC Confinements

- Use most recent year DOC admissions
  - Identify offender groups
  - For each offender group produce the sentence length distribution

# Module I

## Determining Offense and Sentence Length of the DOC Confinements

- Using the offender group and sentence length distribution from admissions and the projected admissions, calculate projected intake by offender group and sentence length

# Module II

## Preparing for Release

- Identify laws and policies that govern release from prison and probation discharge
  - What are the laws and or policies that govern how long offenders remain in custody



# Module II

## Preparing for Release

- Identify group of offenders who shared same release laws and/or policies
  - Apply the laws/policies to the appropriate group

# Module I

## Determining How Long Offenders Stay Confined

- Calculate survival rates (probability density functions) to determine time to be served for each offender group
  - Survival rates are derived by analyzing most recent year's releases and determining the length of time from release to return to custody
    - This model does not use averages

# Module I: Calculation of Projected Releases and Population from the Projected Admissions

- Use survival rates to calculate the remaining population each month
- Compare the population for the previous month of same admission cohort and take out this month's population to produce number of releases
- Add remaining population for each of the admissions monthly cohorts that still remain in prison

# Module I: Calculation of Projected Releases and Population from the Projected Admissions

- Take the previous step for each offender group and sentence length
- Add the remaining population for each group and sentence length to calculate the total projected population from admissions
- Add the releases for each offender group and sentence length to calculate projected releases from intake

# Module III

## DOC Facility Population

- To flow to release of the facility population is somewhat more complex than the intake population
  - The population of the prison is comprised of individuals convicted for:
    - Multiple offenses
    - Several consecutive sentences

# Module III

## DOC Facility Population

- There are also other issues to consider:
  - Offenders with same offense may have different governing laws of release depending on the date of offense
  - Parole eligibility may change as a result of date of offense
  - Time served for a particular offense and sentence length ranges from 1 day ( those who arrived yesterday) to the maximum time served (who will be released the next day)

# Module III:

## Preparing to Release the Facility Population

- Download most recent DOC population from DOC computers
  - Clean data to assure that all cases have:
    - Sentence length
    - Offense type
    - Time served information
    - Sentence date
    - Offense date

# Module III

## Facility DOC Population

- Analyze data to identify
  - offender groups and legislative type
  - time served by sentence length
- Calculate original cohorts
- Apply survival rates to offender groups
- Release them accordingly
- Calculate remaining population



# Projected DOC Population

- The total DOC projected population is the result of adding:
    - the projected population from intake for each month
- PLUS
- the population that remains each month, after releasing some of the offenders who were in custody on the date the projection began

# Module III:

## Projected Parole Population

- Analyze 10 years of parole release cohorts by month
- Calculate average length of stay (ALS)
- Project population using projected releases and ALS

# Module III

## Projected Probation Population

- Analyze 10 years of probation placements
- Calculate average length of stay (ALS)
- Project population using projected probation placement and ALS

# The Model Should Resemble the Actual System

- This type of model is known as a disaggregated simulation flow model
  - Disaggregated because it separates offender by offender groups and sentence lengths
  - Simulation, because it answers “what if” questions
  - Flow, because it resembles the actual flow of offenders through the justice system

# DATA NEEDED

- Historical population of the state by age (ten years)
- Projected population of the state by age for the next ten years
- Historical arrests for the state by offense – (ten years) –by year
- Historical convictions for the state by offense type –(ten years) – by year
- Historical new prison intakes –(ten years) –by year

# DATA NEEDED

- Historical probation placements – (ten years)  
– by year
- Historical probation revocations –(ten years)  
– By month, if possible, for the most recent 60 months
- Number of probation revocations for technical reasons – (ten year)- by year
- Number of prison releases by release type – (ten years)- by year

# Data Needed

- Number of release revocation – (ten years)
  - By month, if possible, for the most recent 60 months
- Number of release revocations for technical reasons –(ten years)
  - By month, if possible, for the most recent 60 months
- Most recent year data file for admissions by
  - Admission type
  - Offense type
  - Sentence length
  - Date of admission

# Data Needed

- Most recent year data file of releases by
  - Release type
  - Offense type
  - Sentence length
  - Time served
  - Date of release
- Most recent end of year data file of prison population by
  - Release type
  - Offense type
  - Sentence length
  - Time served
  - Date of admission



# Organizing the Information

- **NOTE: ALL YEARLY HISTORICAL INFORMATION NEEDS TO BE PLACED IN ONE SHEET OF THE WORKBOOK !!!**
  - You will have a centralized place where historical data of the entire CJ system is stored

# Time for Me to Know More About your System

- Arrest: How accurate is the arrest information?
- Convictions: how is the information gathered?
- Who collects the data, and how accurate?
- What are some data problems?
- Probation placements?
- Is there a document that calculates the relationship between cases and people?

# Getting to Know the System

- Differences in the supervision of felonies vs. misdemeanors?
- What is the range of sentences for felony probationers?
- For Misdemeanors?
- Do you have early probation discharge?
  - If yes, at what point?

# Getting to Know the System

- Do you have Intermediate Sanction Facilities (ISF) for probationers?
  - If yes, what is the ALS?
- Do you have a “good time” law/policy for confined offenders?
  - If yes, how is the offender classified when he is admitted to prison?
  - How does disciplinary infractions impact good time earned?

# Getting to Know the System

- How does good time impact parole eligibility?
- Are there parole policies that exclude offenders in disciplinary status from parole consideration?
- How many parole board members vote on a case and what does it take to get approved?
- Does the Parole Board use a recidivism risk instrument?

# Getting to Know the System

- Does the Parole Board use parole guidelines?
  - If yes, do we have information on adherence to the guidelines and overrides?
- How far in advance from parole eligibility, parole review takes place?
- If an offender is denied parole, when will he be reconsidered for parole again?
- Do you have mandatory release?

# Getting to Know the System

- Are all parole approvals release immediately?
- Are there approvals that are conditional on program completion?
- Are approvals withdrawn for any particular reason (e.g. disciplinary infractions, detainers, additional cases)?
  - If yes do we have a yearly estimate of what percentage of all approvals are withdrawn?

# Getting to Know the System

- What process is followed for parole revocations?
- Are offenders arrested and taken into custody by the DOC?
- If yes, do we have information regarding percentage of arrest that result in re-release?
- For those whose parole is not revoked, how long do they stay in the DOC before release?



# Getting to Know the System

- How long after an offender does not report is he considered an absconder?
- What happens to the length of time offender is on supervision when he is revoked parole for technical violations?
- Are absconders treated differently than technical violators for time calculation purposes?
- Do you have ISFs for parolees?

# Tomorrow (Friday)

- We can start building a model using the data you have
- You have good data?
- How good it is? Cannot be determined until used
- When the model is completed, you will become more informed of the CJ system in Connecticut

# The End Product

- The model needs to be continuously monitored
- It needs to be updated every year as the legislative changes occur
- More than one person should know the model well
  - If only one person knows how the model works, when he/she is promoted, retired or leaves the agency, the model stops functioning

# On Friday

- I want to work with you on:
  - Setting the core of the model (historical data)
  - Developing the admission equation
  - Forecasting the probation and parole populations