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TITLE PAGE

Title: Clinical characteristics and outcomes of patient presentations to the emergency department via police: A scoping review

Running title: Patient presentations to ED via police

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Title: Clinical characteristics and outcomes of patient presentations to the emergency department via police: A scoping review

ABSTRACT

People brought in by police (BIBP) to the emergency department (ED) are a potentially vulnerable group. This narrative scoping review aimed to identify, evaluate and summarise current literature regarding the frequency of presentation, demographic and clinical profile of patients (including reason for presentation), care delivery, and outcomes for people BIBP to the ED, and identify current gaps in knowledge. The review involved searching EMBASE, CINAHL, and PUBMED using a combination of terms: emergency/emergency department coupled with police custody/watch house or police presentation, for papers published in English language from January 2006 to November 2017. A total of 20 studies met the inclusion criteria. These included 17 observational (non-Randomised Controlled Trials) quantitative studies and 3 descriptive case reports. The proportion of presentations to ED that were BIBP varied depending on the study design and sampling frame. People BIBP often presented with ~~aggressive behaviour,~~ mental health problems, ~~and/or~~ substance use problems, ~~and /or~~ aggressive behaviour and injury caused by self or others. Of studies focused specifically on patients arriving to the ED in mental health crisis (i.e., suicidal ideation or self-harm), ~~approximately 20-30%~~ 18-27% were BIBP. ED presentations BIBP were mostly male and typically younger than people arriving by other means. The nature of care provided in the ED and outcomes of the acute episode of care were typically not well-described. Limited research regarding people BIBP to the ED limits the ability to comprehensively

understand their demographic and clinical profile and outcomes of emergency care. Further research is required to inform if and where in the patient's journey further improvements may be targeted.

Key words: emergency department, police, scoping review

Introduction

Within Australia, the number of patient presentations made to emergency departments (EDs) via police or correctional services increased from 45,452 in 2008-09[1] to 48,307 in 2014-15,[2] despite remaining a relatively consistent proportion (0.79%[1] and 0.75%[2]) of all ED presentations. Although this increase (of 6.3%) is below the rate of increase of the Australian population as a whole (8.7% for the same timeframe)[3,4], people arriving to the ED via police are a vulnerable group of healthcare users who often have healthcare needs reflective of their reason(s) for police contact including substance use and other mental health problems.

The health profile of people in police or correctional custody reflects a high rate of mental illness and substance use disorders[5-7], and it is unclear if this profile is similar for those brought in by police (BIBP) to the ED. In many western jurisdictions the police are becoming the default lead agency in addressing acute social and/or mental health crises, many of which are unlikely to result in criminal prosecution. Reflecting papers included in this review, presentation to ED with police can occur when police suspect someone is in need of mental health assessment and treatment and is at risk of harm to themselves or others or when someone encountered (e.g. family violence victim) or in custody is injured or unwell and requires medical treatment. Police also often transport someone to hospital when the presence of substance intoxication or medical factors such as delirium or disorientation impacts the ability to determine whether acute mental illness is present. ~~is often different to that of their community peers, with high rates of communicable and non-communicable disease, mental health disorders and harmful substance use.[3-5] Other chronic and under-treated physical health conditions such as heart disease and diabetes are also common in this~~

~~population.~~[6] ~~Furthermore,~~ While there is a body of research describing people ~~brought in by police (~~BIBP~~)~~ to EDs, this group is typically subsumed within other ED user groups such as mental health consumers[~~7,8~~8,9] or those with drug [~~9~~ 10] and alcohol-related presentations.[~~8, 10, 11~~ 9,11,12]

Currently, little is known about the characteristics of people BIBP to the ED, restricting development of evidence-informed approaches to quality service delivery. In order to optimise service delivery and inform future research directions for people BIBP, this narrative scoping review aimed to provide a comprehensive understanding of the current literature related to the prevalence, demographic and clinical profile (including reason for presentation), care delivery and outcomes for this group.

Methods

~~This narrative scoping review used an integrative multistage approach. Data synthesis was based on an existing framework[12] which informed the mapping of evidence patterns to understand the scope of available evidence.[13]~~

The review largely followed the Johanna Briggs Institute scoping review process[13] in which data synthesis was based on an existing ~~exisiting~~ framework.[~~12~~ 14]

Search strategy

Our search strategy process followed PRISMA guidelines[15] (see Figure 1). We searched EMBASE, CINAHL and PUBMED for relevant literature. Title/abstract search terms included: ED/EDs, emergency department/s, emergency room/s, accident and emergency,

ER/s OR A&E; AND police, custody, watch house, correctional services OR police presentation. Activation of 'smart text' and automatic word variation options (unlimited truncation operators such as emergenc*) during searches ensured that word combination options including US and UK spelling variations and plural terms were detected. Reference chaining was undertaken to supplement the title search strategy in an effort to optimise the number of relevant records.[~~14~~ 16]

Inclusion criteria applied to the initial literature library were: full-text, peer-reviewed original research articles (inclusive of experimental and non-experimental studies, quantitative and qualitative studies, and systematic reviews) published in English between 1 January 2006 and 3 November 2017 that used two or more of the terms listed above in combination. This time frame was selected based on major changes to mental health acts and mental healthcare (including drugs to control psychosis) in the last decade. Our review included studies that were not exclusively focussed on people BIBP, provided it was possible to extract data that pertained to people BIBP. Exclusion criteria were: editorials, conference abstracts, anonymous articles, articles where authorship was unclear, and publications that focused solely on updated datasets. Studies focussed solely on transfer from prison (i.e. escorted by correctional health staff) were also excluded. Two researchers (VA, AJ) screened titles and abstracts for inclusion based on criteria. A third researcher (JP-B) moderated where agreement was not initially achieved. Full-text articles of studies that appeared to meet inclusion criteria were screened by three researchers (VA, AJ, JP-B). Disagreements on full-text inclusion arising during screening were moderated by two other researchers (JC, MW).[~~15~~]

Data extraction and synthesis

Data extracted from included studies included: study authors, year of publication, country of study, research design, sample, methods of data collection, and main results pertaining to this review (incidence of presentation, demographic profile, reason for presentation, patient and service characteristics, ED care delivery and outcomes pertaining to people BIBP to the ED) (see Table 1 and Supplementary Table 1). Initial extraction was performed by a research assistant (VA) in collaboration with an author (AJ) and checked by a second author (JP-B). The level of evidence for each included study was independently assessed by two authors (AJ, JP-B) using the National Health and Medical Research Council (NHMRC) Level of Evidence Hierarchy body of evidence matrix.~~16~~[17] This matrix allocates scores for levels of quantitative evidence on the basis of study design. Assessment differences were resolved by consensus with additional reviewers (JC, MW).

Results

A total of 1,946 titles and abstracts were screened for inclusion; 20 studies met the inclusion criteria (see Figure 1, Table 1 and Supplementary Table 1). Methodologies of included studies were 17 observational (non-RCT) quantitative studies and 3 descriptive case reports. Most of these studies were undertaken in high income countries; ten reports were from Australia, four from the USA, two from Canada, and one each from UK, Portugal, France, and Hong Kong. The studies varied in evidence level from III-3 to IV on the NHMRC level of evidence continuum.~~16~~[17] Two studies were based on the same dataset but focused on different aspects of the dataset and so are both included in this review.[9,18]

[Insert Figure 1 about here]

[Insert Table 1 about here]

[Insert Supplementary Table 1 about here]

Prevalence of ED presentations BIBP

The proportion of people BIBP to ED varied widely depending on the nature and focus of the study. In the two studies that considered those BIBP as part of a complete ED cohort, the proportion was low (~0.8%[~~17~~18] - 1.3%[~~11~~12]). When specified subgroup populations within the ED were considered, frequent presenters (i.e. >8 presentations/year) were BIBP at three times the rate (1.7%) of infrequent presenters (<5 presentations/year).[~~18~~19] Almost half of the included studies (n=8) reported on people with mental illness. Within these studies, approximately 18-86% were BIBP.[~~8, 17, 19-23~~ 9, 18, 20-24] However, the prevalence range of people BIBP with mental illness, when studies that explicitly examined patients transported under legal orders are excluded, was much lower, between 18-27%. [9,18, 20-22] Other studies explored issues such as people BIBP from alcohol and other drugs and intimate partner violence~~, and excessive use of force in custody~~. In these narrowed samples, the prevalence rates of people BIBP varied (e.g. amphetamine use: 16-24%, other toxicology: 13%, family violence victims: 7%), and are higher than the general ED police presentation rate (0.8-1.3%).[10,12,18,26]

The demographic profile, clinical profile (reasons for presentation, urgency of condition, day and time of presentation to ED), and ED care delivery (i.e. procedure/treatment) of people BIBP varied depending on the study focus. The majority of

people BIBP were male, with a median age in the early 30s.[8, 9, 17, 19, 21, 23 27 9,10,18, 20, 25-29] Where socio-demographic profile was considered, people BIBP had disproportionate representation of people who identified as an ethnic minority, typically described as 'first people' or 'black' people.[20, 23 25 21, 25-27] Studies also reported a higher proportion of people who were unemployed[8, 17, 28 9,18,30] and lived in unstable housing[19, 25 20,27] when compared with those in other patient populations.

Regarding the clinical profile of people BIBP, the two most common presenting problems noted in included studies (most of which had narrowed samples) included were: 1) violent or aggressive behaviour[8,9,17,19,21,29 32 9,10,18,20,22,24,31-33] and 2) mental health problems;[8, 17, 19, 26, 30 9,18,20,24,28] presentation to the ED with both at the same time was not uncommon was reported in several studies.[8, 17, 19, 30 9,18,20,24] Substance use (alcohol and/or other drug) was also a common reason for presentation, associated co-reported in some cases with both aggression and/or mental health crisis.[8, 17, 20, 28 30, 33, 34 9,18,21,24,30,31,34,35] People BIBP with violent or aggressive behaviour were more likely than other patients to have a history of previous police contact, violent ideation and violence towards others.[21, 25, 29, 31, 35 22,27,31,32,36] Patients BIBP who were experiencing a mental health problem were often experiencing a situational crisis (e.g. homelessness or family crisis),[21,25 22,27] with some presenting with suicidal ideation,[7, 30 8,24] self-harm,[21, 26, 30 22,24,28] psychosis,[17, 20, 23 18,21,25] or acute depression and anxiety.[8 9] Other clinical profiles reported included physical trauma from intimate partner violence[24, 35 26,36] or from injuries that occurred in custody.[27, 31, 34, 36 29,32,35,37] and from intimate partner violence[24, 35 26,36] Australasian studies reported on the triage category (i.e. urgency of presentation based on a 1-5 scale where 1 is most urgent and should be seen

immediately, and 5 is less urgent but should be seen within 2 hours).[37] [38] People BIBP were typically allocated a triage category of '3' reflecting the need for assessment and treatment within 30 minutes of arrival.[8, 9, 17, 30] [9,10,18,24] Of the studies that reported time of arrival to the ED, most presentations BIBP occurred outside business hours,[8, 17, 26, 27] [9,18,28,29] the definition of which was not specified or varied from 1700-0830, 1700-0800 and or weekend presentations.

Care delivery for people BIBP to the ED

Emergency care delivered for people BIBP was rarely reported, but where cited, fell into three broad categories: health assessment; investigations; and treatment. Health assessment included initial triage, baseline observations, and medical clearance prior to further specialist assessment (such as mental health assessment).[31][32] Investigations included: pathology; toxicology; and x-ray; whilst treatment included plaster; sutures; wound dressings, and medication (including chemical restraint)[17, 19, 21, 26, 27, 30, 31, 33, 35, 38, 39] [18,22,24,28,29,32,34,36,39,40] although these varied based on the reason for presentation and were often alluded to rather than specifically reported.[19, 20, 29, 36] [20,21,31,37] The use of physical restraint (for patients who were aggressive and posed a risk to others) was also reported in some studies that included patients BIBP.[19, 30] [20,24]

Outcomes of people BIBP to the ED

Outcomes for people BIBP were infrequently reported and often subsumed within other population groups (such as mental health presentations). When outcomes were examined they

included: ED length of stay (LOS); admission requirement; and post ED referral to specialist, community and outpatient services. Studies focussed on mental health-related presentations and people BIBP reported that people BIBP tended to have longer hospital LOS[~~8, 17, 30~~ 9,18,24] compared to those presenting by other means. ED LOS for those BIBP was reportedly longer[~~30~~ 24] or no different to other ED presenters.[~~17~~ 18] Hospital admission rate for those BIBP also varied – lower in some studies[~~8, 30~~ 9,24] but higher in others.[~~17~~ 18] Commonly reported referral services for people BIBP included specialist mental health, social work, and alcohol and other drugs services.[~~7, 19, 21~~ 8,20,22] Actual attendance at these referral appointments and/or outcomes of those appointments was not reported, possibly confounded by patient return to police custody[~~9, 23~~ 10,25] or complications associated with custodial residence,[~~29~~ 31] although this cannot be generalised to the whole group. Other outcomes post-discharge were rarely noted.

~~Thus study recommendations relevant to those BIBP, often included the need for greater engagement between services (such as police and health) during and/or subsequent to health care episodes.[18, 22, 24] Such needs were particularly evident in studies of patients BIBP to ED with a mental health problem or in crisis.[8, 23]~~

Discussion

The prevalence of ED presentations BIBP overall was small. In a number of sub-populations such as mental health, substance affected, family violence victims, prevalence rates were higher. ED presentations BIBP were mostly male and typically younger than people arriving by other means. Mental health, substance intoxication or medical factors were common reasons for transport by police to ED. Care delivery generally consisted of health assessment,

investigations, and treatment. With regards to outcomes, people BIBP have longer ED LOS than people arriving by other means; admission rates varied based on the sample and referral services reflected reason for presentation. These findings should be taken with caution given the paucity of some data and limitations such as study design and narrow focus. This summary of findings in relation to the posed aims does however provide some context for examining the consistency of these findings and their practice implications.

~~Our findings have identified the proportion of people BIBP to the ED is infrequently reported and the profile of people BIBP tends to reflect a group who present with aggressive behaviour, mental health problems and/or substance use problems. The nature of care provided in the ED and outcomes of the acute episode of care were rarely reported. While we have highlighted some key study results and common foci of these studies, most research we examined had a narrow scope of focus, with few studies providing holistic examination across the presentation, care and outcome spectrum, either cross-sectionally or longitudinally.~~

Meaningful data around frequency of presentations for people BIBP was limited and prevalence was difficult to ascertain because for some studies the sampling frame was people transported by police, for some it was specific diagnostic groupings of patients and for others it was all ED presentations. While the rate of presentations BIBP to ED is generally low (under 2%), for mental health presentations it is reported at 18-86%; lower (18-27%) when studies of patients transported under involuntary orders are excluded. This ~~large~~ range possibly reflects: i) different sampling approaches used in different studies; ii) the mental health definition used (mental health problem / mental health illness) or iii) the high proportion of this population with mental health problems and limited access to or utilisation

of community mental health services. ~~and or ii) varied inter agency local arrangements in responding to people in crisis.~~ It is also likely that the frequency is highly contextual and influenced by community and police culture, legislative and reporting requirements and health system design considerations. Given that mode of arrival by police is often a characteristic of frequent presenters (defined as those presenting ≥8 times/year),[~~18~~ 19] and that the costs associated with frequent presentations are high,[~~40~~ 41] there appears to be scope for improvement in the medium to long term management of this vulnerable group. Collaborative care and continuity of care for this group is limited between first responders, hospital-based primary care and social support agencies, possibly increasing the likelihood of negative outcomes.[~~41, 42~~ 42,43]

We identified literature spanning countries that included Australia, the UK, USA, Canada, Europe, and Hong Kong, highlighting the perceived importance of this population internationally. No studies were identified arising from low- and middle-income countries in South America, Africa or Asia, possibly reflecting our search strategy which only included studies published in English. The apparent dearth of evidence from such countries, which account for over two-thirds of the world's incarcerated population,[~~43~~ 44] highlights the need for further research to understand whether reported findings are relevant in other regions (including those that are resource-poor). Study recommendations relevant to those BIBP, often included the need for greater engagement between services (such as police and health) during and/or subsequent to health care episodes.[~~18, 22, 24~~ 19,23,26] Such needs were particularly evident in studies of patients BIBP to ED with a mental health problem or in crisis.[~~8, 23~~ 9,25] Further research is also required to understand if and how changes in police and social and

community healthcare standards have impacted on the incidence of people BIBP to the ED, the nature of care delivery, and outcomes for this vulnerable group.

Our paper focused on people BIBP to ED, a cohort where mental health problems, ~~violent / aggressive behaviour~~ and substance use is often reported. Critically, many aspects of clinical response may be required for patients BIBP, which includes assessment and management of substance misuse, injury, mental health problems and psychosocial stressors in addition to behaviour management. Difficulties for police in managing people with mental health and substance use problems in the community have led some police jurisdictions to adopt a co-response (police and mental health) strategy.[~~44, 45~~ 45-47] Whilst such programs have strong linkages with community services and reduce pressure on the justice system, there is limited evidence on other impacts.[~~45~~ 46] A recent mixed-methods study undertaken in Canada evaluated a police-mental health co-response team.[~~44~~ 45] The co-response team had low rates of injury and arrest and when compared to a police only team response, had higher overall rates of voluntary escorts to hospital and lower rates of involuntary escorts. Police in co-response teams also spent less time on hospital handovers. Interviews with 15 service users indicated an appreciation of specialised mental health response, use of de-escalation skills, compassion, empowerment and non- criminalizing approach.[~~44–~~45] A similar model, termed Police Ambulance Crisis Emergency Response (PACER), exists in Australia.[47] With this model, the provision of mental health evaluations 'in the field' by mental health personnel and police meant that some consumers could be diverted away from the ED. Similar models warrant rigorous evaluation in other jurisdictions. Although the majority of people BIBP to the ED will not be placed in long-term police custody, there is a need for research targeting

the subset of those who are under current custodial orders and/or progress to incarceration. The WHO[~~47, 48~~ 48,49] has argued for the importance of understanding prisoners' health needs to inform delivery of evidence-based health services for this vulnerable population. Similarly, our review highlights that substance misuse and mental illness are key areas for care planning for people who arrive to the ED by police.

Supporting guidelines, clinical frameworks, policy and legislative requirements cited in the reviewed studies did not always appear to meet the needs of police and/or consumers[~~49~~ 50] or assist in the provision of quality care in the ED.[~~30, 39~~ 24,40] Legislatively required documentation associated with presentations to ED that were BIBP[~~50~~ 51] was rarely mentioned or reported in studies. Actual or potential medico-legal consequences/outcomes were sometimes, but not always referred to in the reviewed studies even though medico-legal considerations were important factors that guided processes such as detention and restraint applied by police and clinical staff. While a minority of studies cited injury that ~~apparently~~ allegedly occurred during police pursuit, arrest or whilst in police/correctional officer custody,[~~27, 31~~ 29,32] the mechanism of injury was mostly not explicitly reported. Although these studies highlighted the need for effective reporting processes, there was limited discussion of the outcomes from the injury.[~~27, 31, 36~~ 29,32,37] This lack of reporting, guidelines and frameworks restricts the ability to empirically evaluate the impact of these processes and related outcomes.

The relative dearth of studies exploring the specific needs of patients arriving to the ED by police limits the capacity to recommend evidence-based interventions to improve their management and care in the ED and beyond. In studies where the patient profile and the

nature of presentations were considered, presentation for mental illness, complicated by intoxication with alcohol or other drugs, was typical. Further research, including longitudinal studies, using multi-sectoral data linkage to articulate care trajectories and identify when and where to intervene to improve outcomes and reduce harm for this vulnerable group of people is warranted. Additionally, increased effort to improve consistency in data collection and reporting by clinicians and health (including ED) services and researchers, is recommended. The impact of this patient group on clinical staff and other patients also warrants further research. Despite the minimal evidence available, there was strong consensus in the literature that further improvement in healthcare delivery for people BIBP to the ED is required. Although people BIBP were more likely to be referred to a mental health service, and other community services or resources, there was a noted lack of literature examining the uptake and outcomes of these referrals. This presents a critical opportunity for further research, especially in the context of national mental health and suicide prevention priority areas that include: coordinated treatment and support for people with severe and complex mental illness; improving physical health and reducing early mortality; and enabling effective system performance and system improvement strategies.[50–51] By virtue of their presentation, people presenting to the ED by police are a vulnerable population who require co-ordinated multi-agency, multi-sectoral responses. These responses would include, but are not limited to, emergency care, primary care, justice stakeholders, mental health services, and alcohol and other drug services, to ensure continuity of care between services and over time.

Based on this review, key areas for future research include: i) using multi-sectoral data linkage to articulate care trajectories and identify when and where to intervene to

improve outcomes and reduce harm for people BIBP (e.g., frequent attenders or people recently released from prison who may benefit from specific care plans, examining the uptake and outcomes of referrals); ii) providing a consensus on structure, process and outcome indicators for people BIBP to the ED that include post discharge services; iii) describing the impact of people BIBP to ED on clinical staff and other patients; iv) trialling evidenced-based models of care that aim to provide the most appropriate care in the most appropriate place for people in police custody or in a situational crisis in the community; v) evaluating the impacts on the ED of broader changes in police and social and community healthcare standards, practices or policies; and vi) describing if and how ED care delivery may need to vary based on geographical location (remote, regional, metropolitan areas) or low- and middle-income countries.

Limitations

The limitations of this review reflect the paucity of literature about people BIBP to ED. Many of the included studies were limited by sample size, which impacted on their utility to inform clinical practice. Furthermore, ~~with~~ limited information was presented regarding patients BIBP, including their prevalence within the entire ED population. Methodological limitations in the available data preclude robust ascertainment of the actual prevalence such as violent and aggressive behaviour as a cause for police escort to the ED. ~~This restricted~~ ~~for each of the samples presented, there are associated restrictions on~~ Limited information also restricted our ability to discuss important aspects of services provision for this group including: i) safety aspects around people BIBP in the ED (i.e. security of person in custody and safety of others

in the ED), ii) proportion of those BIBP with intellectual disability; iii) acute health and legal implications of those BIBP following suspected body packing; and iv) involuntary detention orders (e.g. for treatment of severe alcohol and other drug dependence) and other similar statutes in other ~~across a number~~ jurisdictions. ~~that impact on the numbers and management of people BIBP.~~ This study was also limited to literature published in English, potentially limiting ascertainment of studies in low-to-middle-income countries and non-English speaking high-income countries. The review was also limited to peer-reviewed publications from the last decade and did not explore grey literature such as governmental reports.

Conclusion

Most people BIBP to the ED were young males. Reasons for presentation included ~~pertained to violent/aggressive behaviour and~~ mental health problems, injury, and violent/aggressive behaviour and these were often underpinned by substance misuse. The specific care delivery provided in the ED was inconsistently reported, and outcomes for this patient group are not well described. A lack of continuity of care from hospitals into the community services or correctional facilities was often noted although few studies examined this empirically. Further research is required to improve our understanding of trajectories for this patient group beyond the ED, and the inter-agency nature of care delivery that they require.

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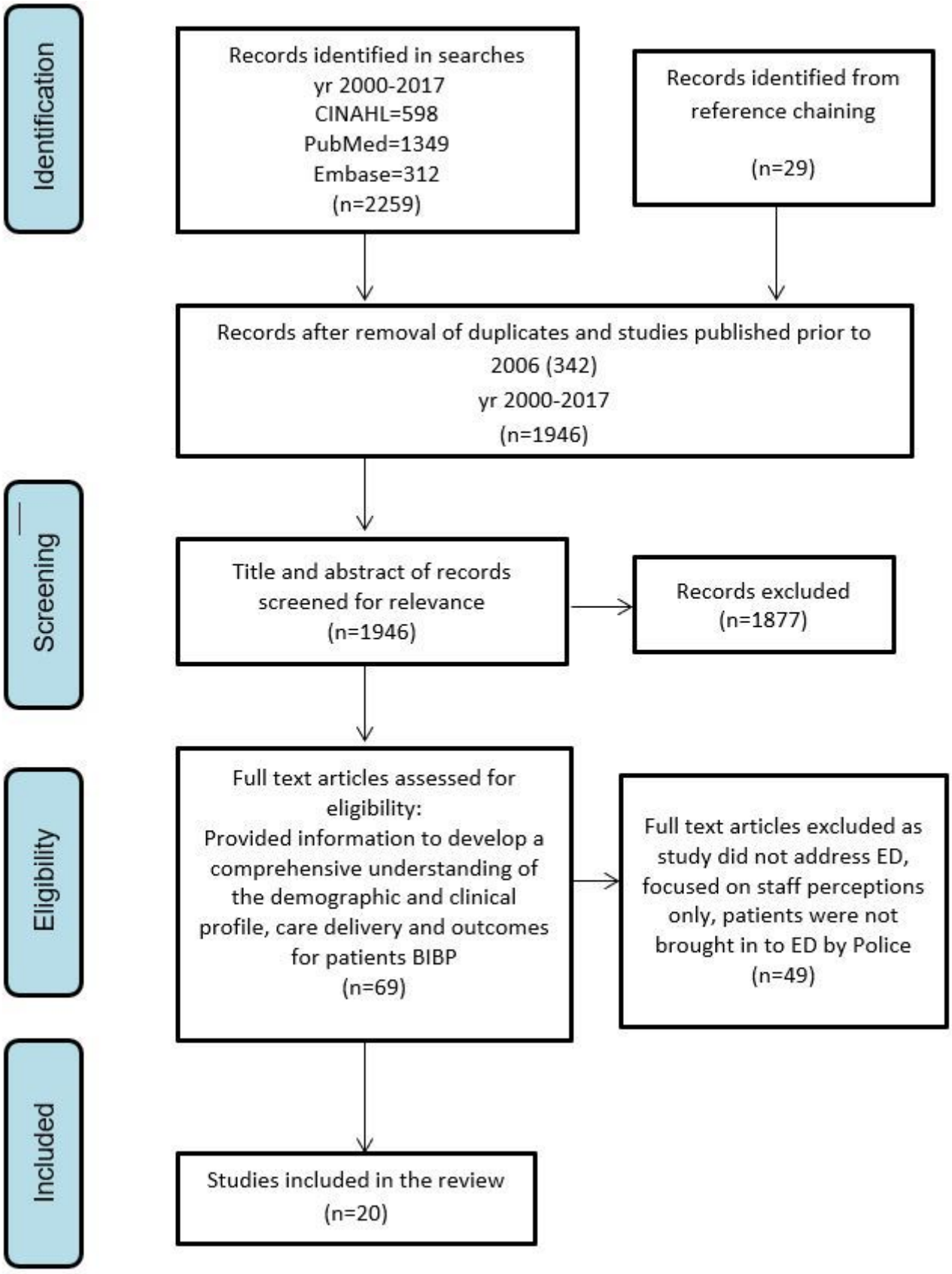

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Table 1. Summary of included studies regarding presentation, demographic and clinical profile, care delivery and outcomes for people brought into EDs by police (BIBP)

Author (Year)	Design	Number BIBP	Demographics of those BIBP Sex, age (median/ mean)	Reason(s) for ED presentation	Clinical characteristics reported for those BIBP	ED characteristics reported for those BIBP	ED care delivery described for those BIBP	Outcomes reported for those BIBP
Al-Khafaji et al., 2014 [26-28]	Observational study	164 people BIBP	58% Male, 35yrs	Mental health problem	Yes	Yes	Yes	Admitted/ discharged ED LOS
Bunting et al., 2007 [29-31]	Observational study	57 people BIBP	NS	Toxicology problem	NS	NS	NS	NS
Charette et al., 2011 [19-20]	Observational study	98 people BIBP	NS	Mental health problem	NS	NS	NS	NS
Chung & Fung, 2006 [38-39]	Case report	1 person BIBP	Male, 53yo	Drug related	Yes	NS	Yes	Admitted Procedure
Downey et al., 2010 [20-21]	Observational study	82 BIBP	61%Male, 27% aged 40-49yrs	Mental health problem	NS	NS	Yes	NS
Gray et al., 2007 [9-10]	Observational study	25 people BIBP	NS	Drug (amphetamine) related	NS	NS	NS	NS

Knott et al., 2007 [21] [22]	Observational study	651 people BIBP	NS	Mental health problem	NS	NS	NS	NS
Kothari & Rhodes, 2006 [24] [26]	Observational study	53 women BIBP	100%Female, Age NS	Victims of intimate partner violence	NS	NS	NS	NS
Lee et al., 2008 [8] [9]	Observational study	460 people BIBP	66%Male, mean age: 33yrs	Mental health problem	Yes	Yes	Yes	Admitted
Lee, 2006 [17] [18]	Observational study	452 patient presentations BIBP	67%Male, mean age: 33yrs	Mental health problem	Yes	Yes	Yes	ED LOS Hospital LOS Admitted/ discharged Follow up by community mental health
Llewellin et al., 2011 [30] [24]	Observational study	205 people BIBP	47%Male, mean age: 35yrs	Mental health problem	Yes	No	Yes	Admitted
Markham & Graudins 2011 [18] [19]	Case-control study	447 people BIBP	NS	Frequent ED presenters	NS	NS	NS	NS
McLay et al.,	Observational	18 people	NS	Alcohol related	NS	NS	NS	NS

2017-[11 12]	study	BIBP		presentation				
Meehan & Stedman 2012 [22 23]	Observational study	Approx: 21,097 people BIBP	NS	Mental health problem	NS	NS	NS	NS
Puentes et al., 2011-[35 36]	Case report	1 person BIBP	Female, 37yo	Intimate partner violence	Yes	NS	Yes	Admitted Follow-up
Raina, et al., 2013 [25 27]	Observational study	76 people BIBP	58%Male, Mean age: 32yrs	Intellectual disability	Yes	NS	NS	NS
Richoux et al., 2011-[28 30]	Cross-sectional study	NS	NS	Alcohol related presentation	NS	NS	NS	NS
Stevenson et al., 2014 [31 32]	Case report	1 person BIBP	Male, 24yo	Injury	NS	NS	Yes	Admitted
Strote et al., 2014 [23 25]	Observational study	43 people BIBP	95%Male, 30yrs	Excited delirium	Yes	No	Yes	Admitted / discharged
Strote et al., 2010 [27 29]	Observational study	187 people BIBP	NS	Required police use of force	Yes	No	Yes	Admitted / discharged

NS: not specified; LOS: length of stay; ED: emergency department; yo: years old; yrs: years; BIBP: brought in by police