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Publication Abstracts

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Diamond, G., Herres, J., Krauthamer Ewing, E.S., Atte, T., Scott, S., Wintersteen, M., Gallop, R. (2017). Comprehensive Screening for Suicide Risk in Primary Care. *American Journal of Preventative Medicine.*

INTRODUCTION:
Suicide is a major public health problem and a complex clinical challenge. Assessment and early identification could be enhanced with screening tools that look beyond depression. The purpose of this study was to identify profiles of risk behaviors and social stress associated with suicidal ideation and behavior using the Behavioral Health Screen.

METHODS:
The study used screening data from 2,513 primary care patients (aged 14-24 years). Data were collected between 2008 and 2012, and were analyzed in 2016.

RESULTS:
Latent class analysis identified a high and low risk profile. Domains of primary influence included substance use, sexual assault, same-sex behavior, and unsafe sex. The high-risk group was 11 times more likely to have made a suicide attempt, five times more likely to report a history of suicidal ideation and behavior, and three times more likely to report recent suicidal ideation and behavior.

CONCLUSIONS:
Risk behaviors and social stress contribute to the risk for suicide above and beyond depression and should be assessed during routine primary care visits with adolescents. The Behavioral Health Screen can screen all these domains and thus assist primary care providers in assessing for both psychiatric and social stress factors associated with youth suicide.

Shearer, A., Herres, J., Kodish, T., Squitieri, H., James, K., Russon, J., Atte, T., & Diamond, G. (2016). Differences in mental health symptoms across lesbian, gay, bisexual, and questioning (LGBQ) youth in primary care settings. *Journal of Adolescent Health.* doi: 10.1016/j.jadohealth.2016.02.005.

Purpose
Lesbian, gay, bisexual, and questioning (LGBQ) youth exhibit significantly higher rates of mental health problems, including anxiety, depression, suicidal ideation, and nonsuicidal self-injury than their heterosexual peers. Past studies tend to group LGBQ youth together; however, more recent studies suggest subtle differences in risk between sexual minority groups. This study examined differences in mental health symptoms across male and female youth who are attracted to the same sex (gay and lesbian), opposite sex (heterosexual), both sexes (bisexual), or are unsure of whom they were attracted to (questioning) in a sample of 2,513 youth (ages 14–24 years).

Methods
Data were collected using the Behavioral Health Screen—a Web-based screening tool that assesses psychiatric symptoms and risk behaviors—during routine well visits.

Results
Bisexual and questioning females endorsed significantly higher scores on the depression, anxiety, and traumatic distress subscales than did heterosexual females. Lesbians, bisexual females, and questioning females all exhibited significantly higher lifetime suicide scores than heterosexual females. Interestingly, bisexual females exhibited the highest current suicide scores. Gay and bisexual males endorsed significantly higher scores on the depression and traumatic distress subscales than did heterosexual males. Gay males also exhibited higher scores on the anxiety subscale than heterosexual males, with bisexual males exhibiting a nonsignificant trend toward higher scores as well.

Conclusions
Findings highlight varying level of risk across subgroups of LGBQ youth and suggest the importance of considering LGBQ groups separately in the context of a behavioral health assessment, especially for females.

Kodish, T., Herres, J., Shearer, A., Atte, T., Fein, J., & Diamond, G. (2016). Bullying, depression, and suicide risk in a pediatric primary care sample. *Crisis*, 4-6.

BACKGROUND:
Suicide is a serious public health concern for US youth. Research has established an association between bullying and suicide risk. However, several questions remain regarding this relationship.

AIMS:
The present study examined (a) whether experiences of verbal, physical, and cyber bullying were uniquely associated with general suicide risk; (b) whether each specific form of bullying was related to suicide attempt; and (c) whether depression moderated the relationship between each type of bullying and suicide risk.

METHOD:
The sample included medical records of 5,429 youth screened in primary care when providers had mental health concerns. Patients were screened using the Behavioral Health Screen (BHS), which assessed a range of mental health problems and behaviors, including bullying, depression, and suicide.

RESULTS:
All types of bullying were associated with suicide risk, but verbal bullying was uniquely associated with suicide attempt. Depression significantly moderated the relationship between each type of bullying and suicide risk.

CONCLUSION:
The study's limitations include the use of cross-sectional and self-data reports. When medical providers evaluate suicide risk, bullying should be considered as a possible precipitant, especially if the patient is depressed. Verbal bullying may be particularly important in understanding severity of suicide risk.

KEYWORDS:
adolescents; bullying; depression; primary care; suicide risk

Shearer, A., Russon, J., Herres, J., Atte, T., Kodish, T., & Diamond, G. (2015). The relationship between disordered eating and sexuality amongst adolescents and young adults. *Eating Behaviors*,19, 115-119. doi:0.1016/j.eatbeh.2015.08.001

Research shows that gay and bisexual males are at increased risk for disordered eating symptoms (DES); however, studies examining DES amongst lesbians and bisexual women have produced mixed findings. Furthermore, few studies have included questioning or "unsure" individuals. This study examined DES symptoms in adolescents and young adults across self-reported sexual attraction and behavior. Participants were recruited from ten primary care sites in Pennsylvania and administered the Behavioral Health Screen (BHS) – a web-based screening tool that assesses psychiatric symptoms and risk behaviors – during a routine visit. As expected, males who were attracted to other males exhibited significantly higher disordered eating scores than those only attracted to members of the opposite sex. Males who engaged in sexual activities with other males also exhibited significantly higher scores than those who only engaged in sexual activities with females. Amongst females, there were no significant differences in DES scores between females who were only attracted to females and those only attracted to males. Those who reported being attracted to both sexes, however, had significantly higher scores, on average, than those only attracted to one sex. More surprisingly, females who were unsure of who they were attracted to reported the highest DES scores of all. These findings are contrary to previous assumptions that same-sex attraction plays a protective role against eating pathology in females. Females who are unsure or attracted to both sexes may actually be at increased risk for developing DES.

Davey MP, Bilkins B, Diamond G, Willis AI, Mitchell EP, Davey A, Young FM. (2015). African American Patients' Psychosocial Support Needs and Barriers to Treatment: Patient Needs Assessment. *J Cancer Educ.* 2015 Jun 7.

This study assessed adult patient's psychosocial support needs and treatment barriers in an urban diverse cancer center. A needs assessment was conducted with a convenience sample of adult oncology patients (n = 113; 71.7 % African Amer-

ican). Most patients were parenting school-age children and worried about them (96 %); 86.7 % would attend a family support program. Among patients who were married or partnered (68 %), 63.7 % were concerned about communication, coping, and emotional support; 53.9 % would attend a couple support program. Patients identified similar treatment barriers: transportation, babysitting for younger children, convenience of time/place, and refreshments. Findings suggest that behavioral health care providers should be available to screen cancer patients and improve access to appropriate psychosocial oncology support programs.

Jenkins, A. L., Singer, J., Conner, B. T., Calhoun, S., & Diamond, G.S. (2014). Risk for suicidal ideation and attempt among a primary care sample of adolescents engaging in nonsuicidal self injury. *Suicide and Life-Threatening Behavior*, 44(6), 616-628.

One in five adolescents in the United States has engaged in nonsuicidal self injury (NSSI), one in eight have had serious thoughts of suicide, and one in 25 have attempted suicide. Research suggests that NSSI may increase risk for suicide attempt, yet little is known about the relationship between NSSI and suicidal ideation or attempts. In a primary care setting, 1,561 youth aged 14–24 years completed a brief, comprehensive, mental health screen as part of a routine well visit to determine which factors were most likely to predict suicidal ideation and attempt among youth engaging in NSSI. Results of recursive partitioning revealed that current depression and history of alcohol use best differentiated youth engaging in NSSI with low versus high risk for suicidal ideation and attempts. This simple algorithm is presented as a clinical screening tool that might aid medical providers in determining which youth would benefit from more intensive assessment and intervention.

Wintersteen, M.B. & Diamond, G.S. (2013). Youth Suicide Prevention in Primary Care: A Model Program and Its Impact on Psychiatric Emergency Referrals. *Clinical Practice in Pediatric Psychology*, 1(3), 295-305.

Primary care is an emerging setting for suicide prevention efforts. Psychologists can play a valuable role in not only consulting to primary care but also assisting with the management of suicidal youth. This article describes the Pennsylvania Youth Suicide Prevention in Primary Care model. After detailing the model, a brief study is reported whereby the intervention of primary care staff training, screening, and available services on referrals to the emergency department (ED) for evaluation and the rate of psychiatric hospitalization following psychiatric evaluation in the ED for these youth are examined. Results demonstrated a reduction in referrals to the ED in the year after the intervention compared to 3 years preintervention. Implications for mental health professionals working in primary care are discussed.

Diamond, G.S, O'Malley, A., Wintersteen, M.B., Peters, S., Yunghans, S., Biddle, V., O'Brien, C. & Schrand, S. (2012). Attitudes, Practices, and Barriers to Adolescent Suicide and Mental Health Screening: A Survey of Pennsylvania Primary Care Providers. *Journal of Primary Care & Community Health*, 3(1), 29-35.

OBJECTIVE:
To determine primary care providers' rates of screening for suicide and mental health problems in adolescents and the factors that promote or discourage this practice.

PATIENTS AND METHODS:
Overall, 671 medical professionals (ie, pediatricians, family physicians, nurse practitioners, physician assistants) completed an electronic survey. The 53 items focused on (1) attitudes, knowledge, and comfort with general psychosocial and suicide screening and (2) current practices and barriers regarding screening and referrals to behavioral health services.

RESULTS:
Forty percent had a patient attempt suicide in the past year, and 7.7% had 6 or more patients attempt suicide. At a well visit, 67% screened for mental health, and 35.2% screened for suicide risk. Most (61.1%) primary care providers rarely screened for suicide or only when it was indicated. Only 14.2% of primary care providers often used a standardized suicide screening tool. Factors associated with screening were being knowledgeable about suicide risk, being female,

working in an urban setting, and having had a suicidal patient. Only 3.0% reported adequate compensation for these practices, and 44% agreed that primary care providers frequently use physical health billing codes for behavioral health services. Nearly 90% said parent involvement was needed if adolescents were to follow through with referrals to mental health services. Only 21% frequently heard back from the behavioral health providers after a referral was made.

CONCLUSION:
Policy that promotes mental health education for primary care providers, provides reimbursement for mental health screening, and encourages better service integration could increase suicide screening and save healthcare costs and patients' lives.

Bevans, K.B., Diamond, G., Levy, S. (2012). Screening for Adolescents' Internalizing Symptoms in Primary Care: Item Response Theory Analysis of the Behavior Health Screen Depression, Anxiety, and Suicidal Risk Scales. *Journal of Developmental and Behavioral Pediatrics*, 33, 283-290.

OBJECTIVE:
To apply a modern psychometric approach to validate the Behavioral Health Screen (BHS) Depression, Anxiety, and Suicidal Risk Scales among adolescents in primary care.

METHODS:
Psychometric analyses were conducted using data collected from 426 adolescents aged 12 to 21 years (mean = 15.8, SD = 2.2). Rasch-Masters partial credit models were fit to the data to determine whether items supported the comprehensive measurement of internalizing symptoms with minimal gaps and redundancies.

RESULTS:
Scales were reduced to ensure that they measured singular dimensions of generalized anxiety, depressed affect, and suicidal risk both comprehensively and efficiently. Although gender bias was observed for some depression and anxiety items, differential item functioning did not impact overall subscale scores. Future revisions to the BHS should include additional items that assess low-level internalizing symptoms.

CONCLUSIONS:
The BHS is an accurate and efficient tool for identifying adolescents with internalizing symptoms in primary care settings. Access to psychometrically sound and cost-effective behavioral health screening tools is essential for meeting the increasing demands for adolescent behavioral health screening in primary/ambulatory care.

Cronholm, P.F., Barg, F.K., Pailler, M.E., Wintersteen,M.B., Diamond, G., & Fein, J.A. (2010). Adolescent depression: Views of health care providers in a pediatric emergency setting. *Pediatric Emergency Care*, 26, 111-117.

OBJECTIVE:
Pediatric emergency department (PED) providers are strategically positioned to identify adolescents with depression. Our objectives were to describe health care providers' perspectives on adolescent depression and the role of depression screening in the PED.

METHODS:
We conducted semistructured interviews with 41 health care providers from an urban, academic PED (including PED attending physicians and trainees, social workers, and psychiatrists). Interviews were audiotaped, transcribed, and entered into the N6 qualitative data analysis software version 6 (QSR International Pty Ltd, Cambridge, Mass) for coding and analysis. A multidisciplinary team used content analysis to identify 2 primary domains: (1) provider attitudes about adolescent depression and (2) factors associated with adolescent depression screening processes in a PED setting.

RESULTS:
The PED-based providers demonstrated a clear understanding of the clinical burden of adolescent depression but described complex individual and system-level barriers to addressing the issue. All providers recognized the high prevalence of adolescent depression and its impact on health and described adolescent depression as a moderate-to-large problem that was greatly underrecognized but applied primarily a biomedical model for treatment options. The respondents en-

dorsed computerized screening as a useful approach. Concerns were raised universally regarding the ability of the health care system to respond to screened adolescents found to be depressed.

CONCLUSIONS:
The study describes the perspectives of multiple, key stakeholders necessary for a system response to the identification, assessment, and management of adolescent depression in the PED. The PED providers were generally supportive of computerized depression screening in the PED setting but also voiced the need for system-level responses that facilitate access to quality mental health care services for adolescents.

Diamond, G.S., Levy, S.A., Bevans, K.B., Fein, J.A., Wintersteen, M.B., Tien, A., &Creed, T.A. (2010). Development, validation and utility of the web-based Behavioral Health Screen for adolescents in ambulatory care. *Pediatrics*, 26(e163-e170).

OBJECTIVES:
The goals were to develop and to validate the Internet-based, Behavioral Health Screen (BHS) for adolescents and young adults in primary care.

METHODS:
Items assessing risk behaviors and psychiatric symptoms were built into a Internet-based platform with broad functionality. Practicality and acceptability were examined with 24 patients. For psychometric validation, 415 adolescents completed the BHS and well-established rating scales. Participants recruited from primary care waiting rooms were 12 to 21 years of age (mean: 15.8 years); 66.5% were female and 77.5% black.

RESULTS:
The BHS screens in 13 domains by using 54 required items and 39 follow-up items. The administration time was 8 to 15 minutes (mean: 12.4 minutes). The scales are unidimensional, are internally consistent (Cronbach's alpha = 0.75-0.87), and discriminate among adolescents with a range of diagnostic syndromes. Sensitivity and specificity were high, with overall accuracy ranging from 78% to 85%. Patients with scores above scale cutoff values for depression, suicide risk, anxiety, and posttraumatic stress disorder symptoms were > or =4 times more likely to endorse other risk behaviors or stressors.

CONCLUSIONS:
The BHS addresses practical and clinical barriers to behavioral health screening in primary care. It is a brief but comprehensive, self-report, biopsychosocial assessment. The psychiatric scales are valid and predictive of risk behaviors, which facilitates exclusion of false-positive results, as well as assessment and triage.

Fein, J.A., Pailler, M.E., Frances, K., Barg,F.K., Wintersteen, M.B., Katie Hayes, K., & Diamond, G.S. (2010). Feasibility and impact of a web-based adolescent psychiatric assessment administered by clinical staff in the pediatric emergency department. *Archives of Pediatric and Adolescent Medicine*.164(12), 1112-1117.

OBJECTIVES:
To determine the adoption rate of the Web-based Behavioral Health Screening-Emergency Department (BHS-ED) system during routine clinical practice in a pediatric ED, and to assess this system's effect on identification and assessment of psychiatric problems.

DESIGN:
Descriptive design to evaluate the feasibility of a clinical innovation.

SETTING:
The ED of an urban tertiary care children's hospital.

PARTICIPANTS:
Adolescents from 14 to 18 years of age, without acute or critical injuries or illness, presenting with nonpsychiatric symptoms.

INTERVENTION:
The ED clinical staff initiated the use of the BHS-ED system, which identifies and assesses adolescents for depression, suicidal ideation, posttraumatic stress, substance use, and exposure to violence. Treating clinicians reviewed results and followed routine care practices thereafter.

MAIN OUTCOME MEASURES:
Adoption rate of the BHS-ED system by nursing staff, identification rates of occult psychiatric problems, and social worker or psychiatrist assessment. Data were collected for 19 months before implementation of the BHS-ED system and for 9 months during implementation.

RESULTS:
Of 3979 eligible patients, 1327 (33.4%) were asked by clinical staff to get screened using the BHS-ED; of these 1327 patients, 857 (64.6%) completed the screening and 470 (35.4%) refused. During implementation, identification of adolescents with psychiatric problems increased significantly (4.2% vs 2.5%; odds ratio [OR], 1.70; 95% confidence interval [CI], 1.38-2.10), as did ED assessments by a social worker or psychiatrist (2.5% vs 1.7%; OR, 1.47; 95% CI, 1.13-1.90). Of the 857 patients who were screened with the BHS-ED, 90 (10.5%) were identified as having psychiatric problems (OR, 4.58; 95% CI, 3.53-5.94), and 71 (8.3%) were assessed (OR, 5.12; 95% CI, 3.80-6.88).

CONCLUSIONS:
In a busy pediatric ED, computerized, self-administered adolescent behavioral health screening can be incorporated into routine clinical practice. This can lead to small but significant increases in the identification of unrecognized psychiatric problems.

Wintersteen, M.B. (2010). Standardized Screening for Suicidal Adolescents in Primary Care. *Pediatrics*, 125, 938-944.

OBJECTIVE: To determine if brief standardized screening for suicide risk in pediatric primary care practices will increase detection rates of suicidal youth, maintain increased detection and referral rates, and be replicated in other practices.

PATIENTS AND METHODS: Physicians in 3 primary care practices received brief training in suicide risk, and 2 standardized questions were inserted into their existing electronic medical chart psychosocial interview. The questions automatically populated for all adolescents aged 12.0 to 17.9 years. Deidentified data were extracted during both intervention trials and for the same dates of the previous year. Referral rates were extracted from social work records.

RESULTS: The rates of inquiry about suicide risk increased 219% (clinic A odds ratio [OR]: 2.04 [95% confidence interval (CI): 1.56–2.51]; clinic B OR: 3.20 [95% CI: 2.69–3.71]; clinic C OR: 1.85 [95% CI: 1.38–2.31]). The rate of case detection increased in clinic A (OR: 4.99 [95% CI: 4.20–5.79]), was maintained over 6 months after the intervention began (OR: 4.38 [95% CI: 3.74–5.02]), and was replicated in both clinic B (OR: 5.46 [95% [CI: 3.36–7.56]) and clinic C (OR: 3.42 [95% CI: 2.33–4.52]). The increase in case detection was 392% across all 3 clinics. Referral rates of suicidal youth to outpatient behavioral health care centers increased at a rate equal to that of the detection rates.

CONCLUSIONS: Standardized screening for suicide risk in primary care can detect youth with suicidal ideation and prompt a referral to a behavioral health care center before a fatal or serious suicide attempt is made.

Pailler, M. E., Cronholm, P. F., Barg, F. K., Wintersteen, M. B., Diamond, G.S., & Fein, J. A. (2009). Patients' and caregivers beliefs about depression screening and referral in the emergency department. *Pediatric Emergency Care*, 25(11), 721-727.

OBJECTIVES:
To explore patients' and parents'/caregivers' beliefs about the acceptability of universal depression screening in the emergency department (ED) and their perceptions of the barriers and facilitators to a mental health referral following a positive screen.

METHODS:
We conducted semistructured interviews with 60 patients seeking care and 59 caregivers in the ED of an urban children's hospital. Interviews were audiotaped, transcribed, coded, and entered into N6 (version 6.0; QSR, Thousand Oaks, Calif) for coding and content analysis.

RESULTS:
Patients and caregivers supported the idea of depression screening in the ED, generally viewing screening as a reflection of care and concern. Respondents reported apprehension about stigma, privacy, and provider sensitivity. Introducing the screening concept early in the visit and as part of routine care was believed to reduce stigma. Respondents generally indicated that although they would likely follow through with a referral if given, stigma and denial were viewed as significant barriers. Caregivers also reported that logistical problems such as transportation, insurance, and agency hours created barriers to help seeking, but this could be offset by social supports and information about the agency and the provider.

CONCLUSIONS:
Patients and caregivers generally support depression screening in the pediatric ED but identified several barriers to screening and referral for treatment. Recommendations include introduction of universal screening early in the ED visit, provision of specific information about the meaning of screening results, and support from family and health care providers to help reduce stigma and increase referral acceptability.

Pailler, M.E. & Fein, J.A. (2009). Computerized behavioral health screening in the emergency department. *Pediatric Annals*, 38(3), 156-160.

The rate of untreated mental health problems among children and adolescents has increased over the past decade, and it is estimated that 70% of children in need do not receive mental health services. Untreated, mental health problems place children at risk for poor school performance and social isolation, and in some cases can lead to adult psychopathology and suicide. Routine screening in medical settings has been recommended as a mechanism for identifying adolescents with unmet mental health needs. The American Academy of Pediatrics (AAP) has acknowledged the role of the emergency department (ED) as a safety net for children and adolescents with unmet mental health needs and recommended the development of accurate mental health screening tools and best practices for follow-up programs for pediatric patients.

Wintersteen, M.B., Diamond, G.S., & Fein, J.A. (2007). Screening for suicide risk in the pediatric emergency and acute care setting. *Current Opinion in Pediatrics*, 19(4),398-404.

PURPOSE OF REVIEW:
This paper reviews epidemiology, psychiatric comorbidities, risk factors, warning signs, screening measures, and issues related to screening for suicide risk in the pediatric emergency department and acute care settings.

RECENT FINDINGS:
For the first time in over a decade, rates of adolescent suicide are increasing. A recent review found physician gatekeeper training to be one of only two effective prevention strategies. Limited methods exist to assess for suicide risk in pediatric acute care settings that are able to meet the demands and challenges presented in time-limited medical settings.

SUMMARY:
Suicide is the third leading cause of death in adolescents. Although a prior suicide attempt is the single most important risk factor, affective, cognitive, family and peer factors also affect risk of completed suicide. Practitioners in the acute care and emergency department setting are well positioned to identify, assess, and appropriately refer these adolescents and their families. Screening instruments in this setting need to be accurate, brief, and relevant to patients, families, and providers. We propose a two-question algorithm that targets imminent risk for a suicide attempt. This type of screening also needs to be accompanied by hospital or community-based support systems for further assessment, intervention and follow-up.