

Reasonable Suspicion: A Study of Pennsylvania Pediatricians Regarding Child Abuse

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ABSTRACT. *Objective.* It has long been assumed that mandated reporting statutes regarding child abuse are self-explanatory and that broad consensus exists as to the meaning and proper application of reasonable suspicion. However, no systematic investigation has examined how mandated reporters interpret and apply the concept of reasonable suspicion. The purpose of this study was to identify Pennsylvania pediatricians' understanding and interpretation of reasonable suspicion in the context of mandated reporting of suspected child abuse.

Methodology. An anonymous survey was sent (Spring 2004) to all members of the Pennsylvania chapter of the American Academy of Pediatrics ($n = 2051$). Participants were given several operational frameworks to elicit their understanding of the concept of reasonable suspicion, 2 of which are reported here. Respondents were asked to imagine that they had examined a child for an injury that may have been caused by abuse and that they had gathered as much information as they felt was possible. They then were asked to quantify (in 2 different ways) the degree of likelihood needed for suspicion of child abuse to rise to the level of reasonable suspicion.

The physicians were asked to identify (using a differential-diagnosis framework) how high on a rank-order list "abuse" would have to be for it to rise to the level of reasonable suspicion (ie, first on the list, second, third, and so on, down to tenth). The second framework, estimated probability, used a visual analog scale of 0% to 100% to determine how likely suspected abuse would have to be for physicians for them to feel that they had reasonable suspicion. That is, would they need to feel that there was a 99% likelihood that abuse occurred before they felt that they had reasonable suspicion, a 1% likelihood, or something in between?

In addition to standard demographic features, respondents were queried regarding their education on child abuse, education on reasonable suspicion, frequency of reporting child abuse, and (self-reported) expertise regarding child abuse. The main outcome measures were physician responses on the 2 scales for interpreting reasonable suspicion.

Results. Pediatricians ($n = 1249$) completed the survey (61% response rate). Their mean age was 43 years; 55% were female; and 78% were white. Seventy-six percent were board certified, and 65% reported being in primary care. There were no remarkable differences in

responses based on age, gender, expertise with child abuse, frequency of reporting child abuse, or practice type. The responses of pediatric residents were indistinguishable from experienced physicians, and the responses of primary care pediatricians were no different from pediatric subspecialists.

Wide variation was found in the thresholds that pediatricians set for what constituted reasonable suspicion. On the differential-diagnosis scale (DDS), 12% of pediatricians responded that abuse would have to rank first or second on the DDS before the possibility rose to the level of reasonable suspicion, 41% indicated a rank of third or fourth, and 47% reported that a rank anywhere from fifth to as low as tenth still qualified as reasonable suspicion.

On the estimated-probability scale (EPS), 35% of pediatricians responded that for reasonable suspicion to exist, the probability of abuse needed to be 10% to 35%. By contrast, 25% of respondents identified a 40% to 50% probability, 25% stipulated a 60% to 70% probability, and 15% required a probability of $\geq 75\%$.

In comparing individual responses for the 2 scales (ie, paired comparisons between each pediatrician's DDS ranking and the estimated probability he or she identified), 85% were found to be internally inconsistent. To be logically consistent, any score $\geq 50\%$ on the EPS would need to correspond to a DDS ranking of 1; an EPS score of $\geq 34\%$ would need to correspond with a DDS ranking no lower than 2; an EPS score of $\geq 25\%$ no lower than a DDS ranking of 3; and so on. What we found, however, was that pediatricians commonly indicated that reasonable suspicion required a 50% to 60% probability that abuse occurred, but at the same time, they responded that child abuse could rank as low as fourth or fifth on the DDS and still qualify as reasonable suspicion.

Conclusions. The majority of states use the term "suspicion" in their mandated reporting statutes, and according to legal experts, "reasonable suspicion" represents an accurate generalization of most mandated reporting thresholds. Our data show significant variability in how pediatricians interpret reasonable suspicion, with a range of responses so broad as to question the assumption that the threshold for mandated reporting is understood, interpreted, or applied in a coherent and consistent manner. If the variability described here proves generalizable, it will require rethinking what society can expect from mandated reporters and what sort of training will be necessary to warrant those expectations. *Pediatrics* 2005;116:e5–e12. URL: www.pediatrics.org/cgi/doi/10.1542/peds.2004-2649; *child abuse, mandated reporting, pediatricians, suspicion*.

ABBREVIATIONS. DDS, differential-diagnosis scale; EPS, estimated-probability scale.

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At least 1 million cases of child abuse occur each year in the United States,¹ and it is estimated that child abuse is present in >50% of families in which domestic violence occurs.²⁻⁴ Mandated reporting of suspected child abuse has existed now for >30 years, requiring individuals who interact with children in a professional capacity to contact child protection services whenever they have reasonable suspicion that a child has been abused. Despite wide variation in the actual statutory language, the majority of state laws use the term "suspicion,"⁵ and several major textbooks identify "reasonable suspicion" as the general, standard threshold for mandated reporting.^{6,7} An enormous literature exists to help identify conditions, injuries, and even behavior that warrant concern regarding possible child abuse. However, there is no substantive guidance for defining what reasonable suspicion and its related terms actually mean and, as such, little direction for mandated reporters as to what level of concern must be reported.⁸

Both practically and conceptually, significant problems arise from this lack of direction: inconsistent reporting of (possible) abuse, unequal protection of children, inequitable treatment of parents, inefficient use of child protection service resources,⁹⁻¹³ and substantial ambiguity about the nature and meaning of the threshold in judging whether to report.^{14,15} These difficulties, in turn, are compounded by (1) the multitude of individuals who qualify as mandated reporters, (2) lack of education regarding what circumstances warrant reporting,^{11,16,17} (3) absence of meaningful oversight concerning actual reporting practices,¹⁸⁻²⁰ and (4) reporters' immunity from civil or criminal liability.^{8,21-24}

Of course, multiple factors give rise to the variability in how mandated reporters understand, interpret, and apply their responsibility to report suspected child abuse, including the circumstances of individual cases, perceived efficacy of child protection services, perceptions of blame, and personal experience with abuse.^{9,10,17,20,25-28} However, despite considerable investigation examining such causes of inconsistency, little research has examined possible confusion over what "suspicion" and "reasonable suspicion" mean. These concepts are fundamentally important, because they define the threshold for determining whether a report is warranted and hence form the basis for reporting practices. Various state supreme courts have affirmed mandated reporting statutes on the assumption that reasonable suspicion is readily understood and consistently applied by ordinary persons. However, there is reason to doubt this assumption.^{8,15}

If reporting practices are to be consistent, just, and effective in protecting children, a broad consensus must exist regarding the meaning and proper application of reasonable suspicion vis-a-vis child abuse. Moreover, the validity of current thresholds for mandated reporting depends on the existence of such a consensus. The present study investigates the extent to which a standard interpretation exists among Pennsylvania pediatricians for reasonable suspicion.

METHODS

A 28-item survey instrument was developed after extensive review of the medical, legal, social science, and philosophical literature. Content validity was established through expert review, and the instrument was pilot tested with a convenience sample of medical students and then in a formal survey of pediatric residents.²⁹ "Child abuse" was defined as comprising physical abuse, sexual abuse, psychological abuse, and neglect. Respondents were asked to indicate their level of expertise regarding child abuse, frequency of reporting, and prior education on child abuse and reasonable suspicion. Respondents self-identified their ethnicity using a standard list of options provided by the Penn State College of Medicine Institutional Review Board.

The survey instrument included 4 sections, 2 of which are the subject of this report. Using 2 different frameworks, these sections were designed to have pediatricians quantify the degree of likelihood needed for one's suspicion of child abuse to rise to the level of reasonable suspicion.

The first framework involved a visual analog scale in the form of a differential diagnosis, a framework that is familiar to physicians and common in their decision-making (Fig 1). This construct required respondents to identify how likely (suspected) child abuse would have to be (as a potential diagnosis) to qualify as reasonable suspicion. The scale comprised a rank order list from 1 (most likely) to 10 (least likely).

In creating a differential diagnosis, a physician lists what they perceive to be the most common explanations for the clinical situation. Each possible diagnosis has (or can be assigned) a probability of being the correct explanation for the condition at issue. In clinical situations in which there is only 1 correct diagnosis, the collective probability for the entire list of (possible) diagnoses is $\leq 100\%$.^{30,31} Thus, although there is no minimum probability that the most likely diagnosis must possess, for a given diagnosis to rank first on the differential diagnosis its probability must be greater than any other (single) candidate on the list. Correlatively, when the probability of a given diagnosis exceeds 50%, its differential-diagnosis ranking must be 1.

The second framework again used a visual analog scale, this time involving numerical probability (Fig 1). The scale's range was from 0% (no possibility) to 100% (certainty). A hard-copy survey asked respondents to mark an "X" on a 10-cm scale³²⁻³⁴ at the point corresponding to the percent likelihood they felt was necessary to constitute reasonable suspicion. Marks were measured to the nearest 5th percentile. An e-mail version used bubbles that respondents could select in increments of 5%.

Procedures

With the permission of the Pennsylvania chapter of the American Academy of Pediatrics, we distributed our survey to all member pediatricians (active, retired, and in training) in Pennsylvania ($n = 2051$). This database provided for at least 85% penetration of all pediatricians practicing in Pennsylvania. A letter of introduction invited participation, explained the nature and length (5-10 minutes) of the survey, and provided contact information for any questions. A check-box allowed physicians to refuse participation. The first mailing was sent by e-mail to individuals who had an e-mail address ($n = 1273$), and an e-mail reminder was sent 1 week later. Excepting those who responded, a hard copy of the survey was then mailed with a cover letter, reply envelope, and \$5 cash incentive. A postcard reminder was sent to nonrespondents, and after 2 weeks a second copy of the survey was sent by priority mail. All distribution, collection, and tabulation of responses were conducted by the Penn State Survey Research Center. Individual surveys were coded for tracking purposes; once the data were entered, the code key was destroyed, rendering the data anonymous. The study received approval before survey distribution from the Penn State College of Medicine Institutional Review Board. Waiver of informed consent was granted in accord with federal regulation (45 CFR part 46.116[d]). Protected health information was not accessed for this study.

Data Analysis

Descriptive statistics were generated including means, medians, and standard deviations for continuous variables and frequency tables for discrete variables. Associations between demographic factors and reasonable suspicion were characterized by

For questions 7 & 8, imagine that you have examined a child for an injury that might have been caused by abuse AND that you have gathered as much information as you feel possible.

7. How high on your differential diagnosis list would (suspected) child abuse have to rank before you felt there was *reasonable suspicion* of child abuse?

Differential Diagnosis (fill in one circle)

- 1 (Most likely)
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 (Least likely)

8. How great would the likelihood of abuse have to be for you to feel you had *reasonable suspicion* that his/her injury was caused by abuse? (That is, would you need to feel there was a 99% likelihood that abuse occurred before you felt you had *reasonable suspicion*? a 1% likelihood? or something in between?)

Please indicate what level of likelihood constitutes *reasonable suspicion* for you by marking an "X" on the scale below (i.e., at the appropriate spot along the line corresponding to the percent likelihood.)

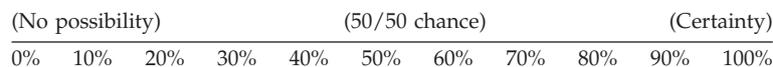


Fig 1. Survey questions for the differential-diagnosis (question 7) and estimated-probability (question 8) frameworks.

using contingency-table analysis; significance levels were determined by Pearson's χ^2 statistic and 2-sample *t* tests. The estimated probability was compared with the differential diagnosis by using linear regression.

RESULTS

Response Rates

The response rate was 61% ($n = 1249$), of which 8.7% ($n = 109$) were completed by e-mail. Forty-eight respondents (2.3%) refused participation, and 8 (0.4%) surveys were returned due to invalid addresses or deceased status.

Pediatrician Demographic Characteristics

As shown in Table 1, respondents comprised a diverse group in terms of age, gender, and practice setting, as well as reported experience and expertise in dealing with child abuse. It is notable that 94% of pediatricians indicated that they had received some kind of education or guidelines regarding what constitutes child abuse, versus 62% who reported receiving education or guidelines (again, unspecified) regarding what constitutes reasonable suspicion of child abuse.

Differential Diagnosis

Wide variation was found in the thresholds that pediatricians set for what constituted reasonable suspicion (Fig 2). For 12% of pediatricians, abuse would have to rank first or second on the differential-diagnosis scale (DDS) before the possibility rose to the level of reasonable suspicion, 41% indicated a rank of third or fourth, and 47% reported that a rank anywhere from fifth to as low as tenth still qualified as reasonable suspicion.

Significant differences were not found for pediatricians' DDS rankings with regard to age, race, board certification, level of expertise, reporting fre-

quency, practice type, or previous education on reasonable suspicion. Females had a lower threshold ($P = .05$) with respect to DDS ranking of reasonable suspicion, as did respondents reporting prior education on child abuse ($P = .02$).

Estimated Probability

Pediatricians were asked to correlate the threshold for reasonable suspicion with the estimated probability that abuse occurred. Thirty-five percent identified the necessary probability as between 10% and 35%, 25% identified 40% to 50% probability, 25% stipulated 60% to 70% probability, and 15% required a probability of $\geq 75\%$ before they felt that reasonable suspicion could be concluded (Fig 3).

For the estimated-probability framework, there were no significant associations for age, race, gender, board certification, reporting frequency, practice type, or previous education on reasonable suspicion. Regarding level of expertise, pediatricians who reported moderate or very expert status had a lower threshold ($P = .004$), as did respondents reporting prior education on child abuse ($P = .03$).

Differential Diagnosis Versus Estimated Probability

To compare individuals' responses for the 2 frameworks, paired comparisons were conducted between pediatricians' DDS ranking and the estimated-probability scale (EPS) score identified by each pediatrician. A strong relationship would have indicated that as the EPS score increased, respondents would designate a higher rank on the visual analog DDS (a rank of 1 being the highest). What was found, using linear regression, was only a very weak relationship (in the expected direction) between these 2 measures of likelihood ($r^2 = 0.359$) (Fig 4).

In quantifying reasonable suspicion, 85% of pedi-

TABLE 1. Participant Demographic Characteristics

Characteristic	% Physicians (<i>n</i> = 1249)
Gender	
Female	55
Male	45
Age, y, mean (range)	43 (23–87)
Board certified	76
Race	
White	78
Asian	12
Black	3
Hispanic	3
Other	4
Reported cases within 24 mo	
0	32
1–5	56
6–10	7
11–15	2
>15	3
Level of expertise	
Not at all expert	30
Some expertise	45
Moderate expertise	22
Very expert	3
Previous education	
Child abuse	94
Reasonable suspicion	62
Practice	
Primary care	65
Subspecialty	35
Current position	
Private practice	40
Academic health center	23
Pediatric resident	21
Clinical, education, and research	14
Nonclinical	2
Practice type	
Group practice (>3 physicians)	49
Salaried, hospital based	36
Solo	8
Partnership	6
Health maintenance organization	1

atricians' response sets were markedly inconsistent. To be logically consistent, any score $\geq 50\%$ on the EPS would need to correspond to a DDS ranking of 1; an EPS score of $\geq 34\%$ would need to correspond with a DDS ranking no lower than 2; an EPS score of $\geq 25\%$ would need to correspond with a DDS ranking of no lower than 3; and so on. However, pediatricians commonly indicated that reasonable suspicion required a 50% to 60% probability that abuse occurred while also responding that child abuse could rank as low as fourth or fifth on the DDS and still qualify as reasonable suspicion.

DISCUSSION

Our data show significant variability in how pediatricians interpret reasonable suspicion, with a range of responses so broad as to question the assumption that any general consensus exists. To our knowledge, this investigation is the first to systematically examine how pediatricians understand and operationalize the concept of reasonable suspicion.

One might expect judgment and experience to figure prominently into determinations of reasonable suspicion, yet our data show no significant associations in terms of age, years in practice, or practice type. The responses of pediatric residents were in-

distinguishable from experienced physicians, and responses of primary care pediatricians were no different from pediatric subspecialists.

Gender did approach statistical significance in association with the differential-diagnosis framework ($P = .0503$), but the difference was insignificant from a clinical perspective, and no similar association emerged with the estimated-probability framework. Although a statistically significant association was found with prior education on child abuse on both frameworks ($P = .02$ and $.03$, respectively), the absolute differences are of doubtful significance for clinical practice (4.7 vs 4.2 for the DDS and 47% vs 53% for the EPS). This is also true for reported expertise and EPS, because despite high statistical significance ($P = .005$), a difference in threshold for reasonable suspicion of 44% vs 49% on the EPS is unlikely to have discernible clinical impact (Table 2).

It is interesting that the majority of pediatricians reported very few cases of child abuse within the past 24 months, because although reporting practices do not go hand in hand with having reasonable suspicion, confusion over the latter likely contributes to the frequency of reporting. More than 60% of pediatricians reported prior education regarding reasonable suspicion, and yet we found no association between responses and such education. At the very least, this suggests that more attention is due the development and implementation of education about reasonable suspicion. In previous work we outlined steps for developing a more systematic approach to this issue.⁸

Particularly striking is that >85% of individuals' paired responses to the 2 frameworks for measuring likelihood were internally inconsistent. For example, if a given individual feels that a 60% probability (that child abuse occurred) is needed for reasonable suspicion to exist, then the logic of rank-order lists tells us that "child abuse" would need to rank first on this individual's DDS to qualify as reasonable suspicion, because no other possible diagnosis can be more likely than a diagnosis with a likelihood that is $\geq 50\%$. However, the vast majority of responses did not conform to this logic (Fig 4). This disconnect (between reasonable suspicion as quantified by the EPS versus DDS) raises troubling questions about how reasonable suspicion functions clinically. The EPS data suggest that pediatricians need to perceive the probability of child abuse as $\geq 50\%$ before being willing to say that reasonable suspicion exists, but the data from the differential-diagnosis framework suppose a much lower threshold (approximately $\geq 25\%$). These conflicting results show serious inconsistencies and worrying variability in terms of how individuals conceive of and operationalize reasonable suspicion.

Teigen^{30,31} has demonstrated that with rank-order lists, people tend to overestimate the probabilities of individual options, resulting in summed probabilities that far exceed the logical cap of 100%. Hence, the inconsistency demonstrated in Fig 3 is not necessarily surprising. There is no reason to expect pediatricians to have given extensive thought to the theoretical constraints of rank-order decision analy-

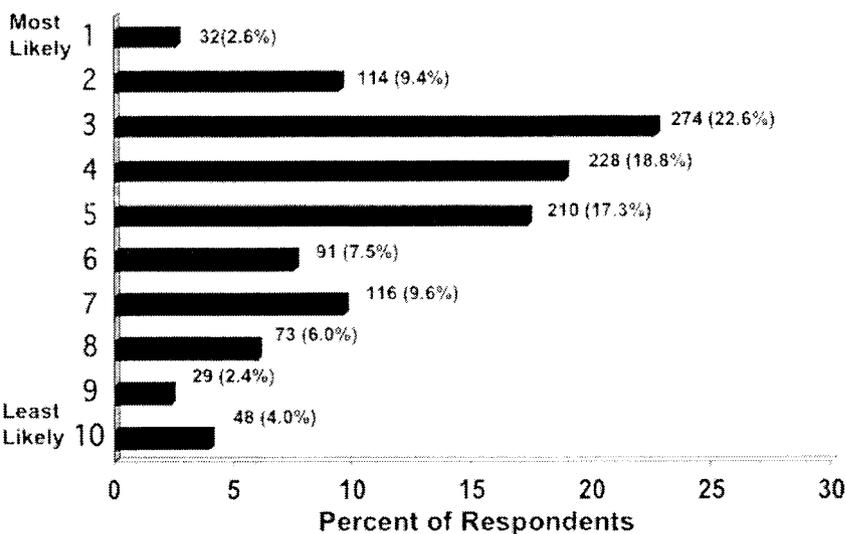


Fig 2. Pediatricians' responses to the question of how high (suspected) child abuse would have to rank before it was felt that there was reasonable suspicion (differential diagnosis).

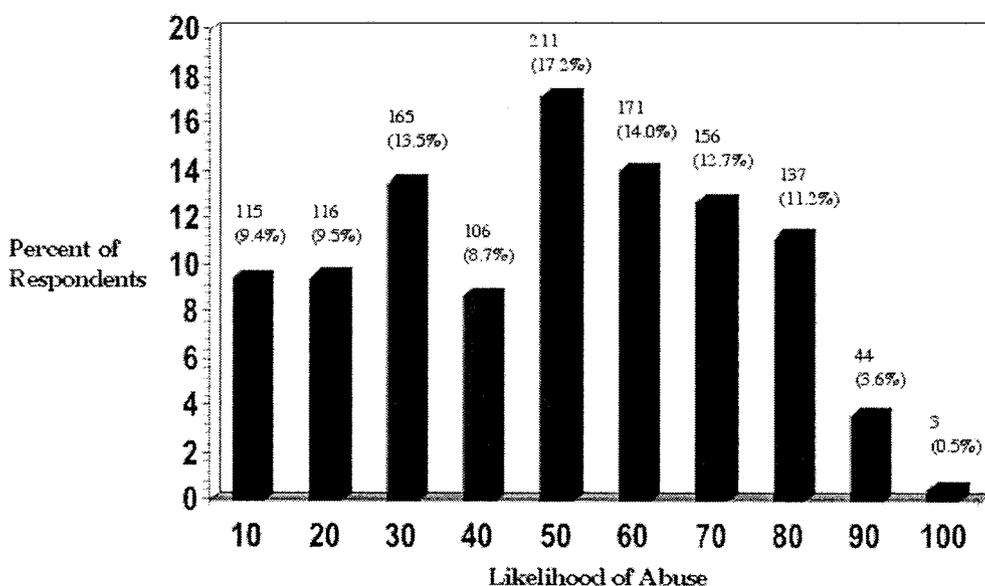


Fig 3. Pediatricians' responses to the question of how likely (suspected) child abuse would have to be before it was felt that there was reasonable suspicion (estimated probability).

sis. That said, there is reason to compare pediatricians' responses on the differential-diagnosis framework versus the estimated-probability framework. Both frameworks are useful heuristics for measuring likelihood, and both are commonly used in medical decision-making. No prior data exist that attempt to quantitate a threshold for reasonable suspicion, and as such, the juxtaposition of these 2 frameworks compares competing models. Moreover, if one begins with the EPS, it clearly is possible to extrapolate a rank on the DDS, although the reverse extrapolation is not feasible.

Hence, although the inconsistency between the 2 frameworks may or may not tell us much about individual consistency in thinking about reasonable suspicion, it does further undermine the validity of current reporting guidelines. In the absence of a well-articulated, commonly understood interpretation of reasonable suspicion, these data highlight the enormous variability and disconnect between differ-

ent frameworks for understanding and applying reasonable suspicion as the threshold for mandated reporting.

The majority of states use the term "suspicion" in their mandated reporting statutes. According to legal experts,^{6,7} "reasonable suspicion" represents an accurate generalization of most mandated reporting thresholds. The rationale for designating suspicion rather than knowledge or justified belief is to set an intentionally low bar to achieve the maximum detection rate and trigger a professional investigation. In fact, courts have expressly prohibited mandated reporters, in determining whether to report, from exercising their own judgment of whether abuse actually occurred.³⁵ The aim is to achieve the maximum detection rate possible (an admirable and desirable goal), and the prevailing ethos is that it is better to cast a broader net than miss catching a child at risk. However, the appropriateness of using suspicion or reasonable suspicion as a threshold turns on the

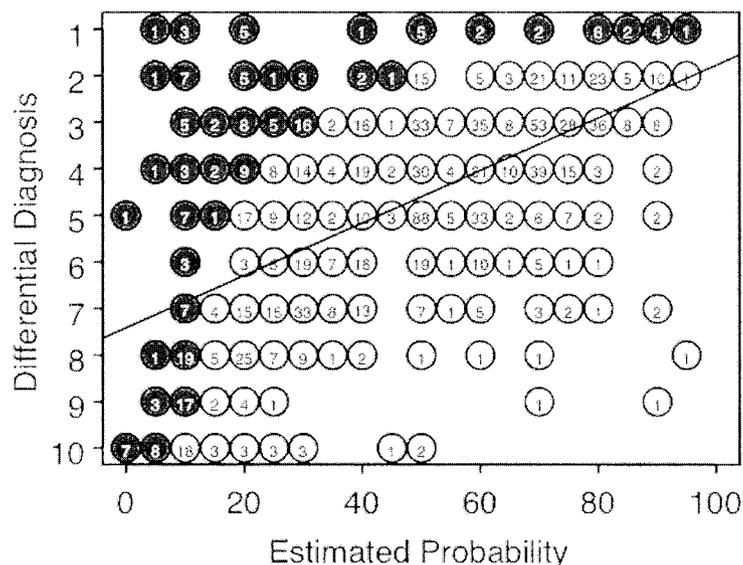


Fig 4. Comparison of pediatricians' paired responses for the differential-diagnosis and estimated-probability questions.

TABLE 2. Association Between Respondent Characteristics and Responses to Differential-Diagnosis and Estimated-Probability Frameworks for Gauging Reasonable Suspicion

Variable	DDS, P (Mean Score)*†		EPS, P (Mean Score)†	
	Significant	Not Significant	Significant	Not Significant
Level of expertise (not at all/some versus moderate/very expert)		.23	.005 (44.3% vs 48.7%)	
Board certified		.83		.09
Frequency of reporting (0-5 vs ≥6 reports over the past 2 y)		.48		.29
Age		.36		.29
Race		.12		.86
Gender	.05 (4.82 vs 4.57)			.68
Practice type (primary care versus subspecialty)		.94		.33
Previous education				
Reasonable suspicion		.13		.13
Child abuse	.02 (4.73 vs 4.24)		.03 (47.3% vs 53.4%)	

* Because these mean DDS scores denote rank, a higher number connotes a lower threshold.

† Mean scores are in terms of rank for the DDS and likelihood for the EPS.

assumption that mandated reporters understand and apply this “standard” in a rational and consistent manner.

Given what is at stake,³⁶⁻⁴⁴ validating this assumption is particularly important for those in health care. Evidence of child abuse may be straightforward (as when a child or parent discloses it outright) or occasionally relatively easy to perceive through heightened awareness and good interviewing skills, but far more frequently one’s findings and their implications are ambiguous.

If significant variability exists in how individuals conceive of reasonable suspicion, some mandated reporters will be casting nets with very fine mesh, whereby the slightest inkling constitutes reasonable suspicion, whereas others’ nets will have huge openings, reserving reasonable suspicion for only the highest levels of confidence. With no standard gauge for the net that mandated reporters are supposed to cast, not only the efficacy of the system but also its equity is undermined. A system based on an ad hoc standard is no system at all.

The implications are compounded by the fact that all US states grant mandated reporters immunity from criminal or civil prosecution (provided that

their report of suspected child abuse is made in good faith).⁴⁵ Although such immunity may have a salutary effect on mandated reporters’ willingness to report, it is problematic in providing no check or balance of power, no recourse for nonmalicious reporting injustices, nor any ready mechanism for constructive feedback to educate mandated reporters about regauging their nets more appropriately.²⁴

Our findings call into question the underlying assumption within statutory law that (in the context of mandated reporting of suspected child abuse) reasonable suspicion is understood, interpreted, and applied in a coherent and consistent manner.

State appeals courts have upheld mandated reporting statutes in part on the presumption that “reasonable suspicion” is readily understood and interpretable by any person of common intelligence.^{35,46-50} Moreover, they have assumed that it is only “on occasion” that mandated reporters will have to wrestle with whether reasonable suspicion exists.⁴⁷ What these courts do not seem to appreciate, however, is that the possibility of child abuse is ever present as an explanation for children’s injuries and conduct. It is common to encounter a toddler with a bruise of unknown origin, an unexplainably angry 7-year-old,

a fifth-grader who "says" that he fell from the monkey bars. As such, it is not on occasion, but instead typically, that genuine uncertainty exists as to the likelihood that abuse has occurred.

The US Supreme Court set the precedent >75 years ago that "[a] statute which either forbids or requires the doing of an act in terms so vague that men of common intelligence must necessarily guess at its meaning and differ as to its application, violates the first essential of due process."⁵¹ The Supreme Court subsequently held that, with regard to law enforcement, what justifies the policy of using reasonable suspicion as a standard is the fact that "those charged with enforcing the laws can be subjected to the more detached, neutral scrutiny of a judge who must evaluate the reasonableness of a particular search or seizure in the light of the particular circumstance."⁵² The reason for this is that reasonable suspicion is a multifaceted, fluid concept that is "not readily, or even usefully, reduced to a neat set of legal rules."⁵³ The present data reinforce this view and further challenge mandated reporting statutes to look on reasonable suspicion as significantly more complex than previously supposed.

We have argued elsewhere⁸ that (in the context of mandated reporting) suspicion is best understood not as a belief but as a feeling that child abuse may have occurred. If this is so, then estimated probability may prove to be a useful framework for creating an effective definition of reasonable suspicion. People are comfortable with the concept of likelihood, from batting averages to weather forecasting.⁵⁴ Expectations and responsibilities could be clarified across the board by states simply stipulating the percent probability that should trigger mandated reporting: 25%, 75%, or something in between.

Of course, such policy decisions involve social and political questions that will require not only public dialogue but also considerable empirical research about the costs and benefits of various cutoff points. Choosing an actual threshold will depend on the value our society attaches to different variables in this social calculus, for instance, how much we are willing to spend/invest to protect children from abuse; what would be the effect on child protective service resources; and so on. It clearly will not do to simply set the reporting threshold at the lowest degree of (estimated) probability, because there are potential costs associated with lowered thresholds and the increased investigation that would accompany them.

Nonetheless, the present data suggest that, at least with regard to pediatricians, the current standard for interpreting reasonable suspicion is essentially ad hoc and, as such, demands rethinking.

LIMITATIONS

Because of time and funding constraints, we did not contact nonrespondents to determine if they differed from responding pediatricians. Also, it may be incorrect to assume that the meaning of a differential diagnosis list is unambiguous and/or that probability estimations and their implications are well understood.^{30,31} Additionally, our methods may not have

accurately assessed how physicians actually interpret and apply the concept of reasonable suspicion.

CONCLUSIONS

The present findings suggest that pediatricians hold disparate views on the meaning and application of reasonable suspicion. Additionally, our data show that some of these views are internally inconsistent. Child abuse is a critical social issue that affects the welfare of millions of children and families throughout the United States. Because health care providers form part of the bulwark for suspecting and reporting child abuse, the current findings warrant additional study. If the variability described here does prove generalizable, it will require rethinking what society can expect from mandated reporters and what sort of training will be necessary to warrant those expectations.

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REFERENCES

1. Drake B, Zuravin S. Bias in child maltreatment reporting: revisiting the myth of classlessness. *Am J Orthopsychiatry*. 1998;68:295-304
2. Appel AE, Holden GW. The co-occurrence of spouse and physical child abuse: a review and appraisal. *J Fam Psychol*. 1998;12:578-599
3. Edleson JL. The overlap between child maltreatment and woman battering. *Violence Against Women*. 1999;5:134-154
4. Garbarino J, Kostelny, Dubrow N. What children can tell us about living in danger. *Am Psychol*. 1991;46:376-383
5. National Clearinghouse on Child Abuse and Neglect Information. *Statutes at a Glance: Mandatory Reporters of Child Abuse and Neglect*. Washington, DC: US Department of Health and Human Services; 2003
6. Myers JEB. Medicolegal aspects of child abuse. In: Reece RM, ed. *Treatment of Child Abuse: Common Ground for Mental Health, Medical, and Legal Practitioners*. Baltimore, MD: Johns Hopkins University Press; 2000:319-338
7. Myers JEB. Medicolegal aspects of suspected child abuse. In: Reece RM, Ludwig S, eds. *Child Abuse: Medical Diagnosis and Treatment*. Philadelphia, PA: Lippincott, Williams & Wilkins; 2001:545-563
8. Levi BH, Loeben G. Index of suspicion: feeling not believing. *Theor Med Bioeth*. 2004;25:277-310
9. Flaherty EG, Sege R, Mattson CL, Binns HJ. Assessment of suspicion of abuse in the primary care setting. *Ambul Pediatr*. 2002;2:120-126
10. Flieger CL. *Reporting Child Physical Abuse: The Effects of Varying legal Definitions of Reasonable Suspicion on Psychologists' Child Abuse Reporting* [doctoral thesis]. Alameda, CA: California School of Professional Psychology; 1998
11. Haeringer ARV, Dadds M, Armstrong KL. The child abuse lottery—will the doctor suspect and report? Physician attitudes towards and reporting of suspected child abuse and neglect. *Child Abuse Negl*. 1998;22:159-169
12. Hickson GB, Cooper WO, Campbell PW, Altemeier WA. Effects of pediatrician characteristics on management decisions in simulated cases involving apparent life-threatening events. *Arch Pediatr Adolesc Med*. 1998;152:383-387
13. Zellman GL. Report decision-making patterns among mandated child abuse reporters. *Child Abuse Negl*. 1990;14:325-336
14. Applebaum PS. Law & psychiatry: child abuse reporting laws: time for reform? *Law Psychiatry*. 1999;50:27-29
15. Deisz R, Doueck H, George N. Reasonable cause: a qualitative study of mandated reporting. *Child Abuse Negl*. 1996;20:275-287
16. Badger LW. Reporting of child abuse: influence of characteristics of physicians, practice, and community. *South Med J*. 1989;82:281-286
17. Warner JE, Hansen DJ. The identification and reporting of physical abuse by physicians: a review and implications for research. *Child Abuse Negl*. 1994;18:11-25
18. Vulliamy AP, Sullivan R. Reporting child abuse: pediatricians' experiences with the child protection system. *Child Abuse Negl*. 2000;24:1461-1470

19. Berg RN, Doak TL. What happens after a physician reports suspected child abuse? *J Med Assoc Ga.* 1998;87:51–53
20. Delaronde S, King G, Bendel R, Reece R. Opinions among mandated reporters toward child maltreatment reporting policies. *Child Abuse Negl.* 2000;24:901–910
21. Kalichman SC. *Mandated Reporting of Suspected Child Abuse: Ethics, Law, & Policy.* 2nd ed. Washington, DC: American Psychological Association; 1999
22. National Clearinghouse on Child Abuse and Neglect Information. *Current Trends in Child Maltreatment Reporting Laws.* Washington, DC: US Department of Health and Human Services; 1999
23. Singley SJ. Failure to report suspect child abuse: civil liability of mandated reporters. *J Juvenile Law.* 1998;19:236–271
24. Trost C. Chilling child abuse reporting: rethinking the CAPTA amendments. *Vanderbilt Law Rev.* 1998;51:183–215
25. Bonardi DJ. *Teachers' Decisions to Report Child Abuse: The Effects of Ethnicity, Attitudes, and Experiences* [doctoral thesis]: Palo Alto, CA: Pacific Graduate School of Psychology; 2000
26. Blacker DM. *Reporting of Child Sexual Abuse: The Effects of Varying Definitions of Reasonable Suspicion on Psychologists' Reporting Behavior* [doctoral thesis]: Berkeley/Alameda, CA: California School of Professional Psychology; 1998
27. Dukes RL, Kean RB. An experimental study of gender and situation in the perception and reporting of child abuse. *Child Abuse Negl.* 1989;13:351–360
28. Hampton RL, Newberger E. Child abuse incidence and reporting by hospitals: significance of severity, class, and race. *Am J Public Health.* 1985;75:56–68
29. Levi BH, Brown G, Erb C. Reasonable suspicion: a pilot study of pediatric residents. *Child Abuse Negl.* 2005; In press
30. Teigen KH. Studies in subjective probability III: the unimportance of alternatives. *Scand J Psychol.* 1983;24:97–105
31. Teigen KH. When are low-probability events judged to be “probable?” Effects of outcome-set characteristics on verbal probability estimates. *Acta Psychol (Amst).* 1988;68:157–174
32. Sriwatanakul K, Kelvie W, Lasagna L. The quantification of pain: an analysis of words used to describe pain and analgesia in clinical trials. *Clin Pharmacol Ther.* 1982;32:143–148
33. Houde RW. Methods for measuring clinical pain in humans. *Acta Anaesthesiol Scand Suppl.* 1982;74:25–29
34. Gracely RH, Wolskee PJ. Semantic functional measurement of pain: integrating perception and language. *Pain.* 1983;15:389–398
35. *People of the State of Michigan v Cavaiani*, 172 NW2d 706 (Mich Appeals Ct 1988)
36. Scheid JM. Recognizing and managing long-term sequelae of childhood maltreatment. *Pediatr Ann.* 2003;32:391–401
37. Saluja G, Kotch J, Lee LC. Effects of child abuse and neglect: does social capital really matter? *Arch Pediatr Adolesc Med.* 2003;157:681–686
38. Diaz A, Simantov E, Rickert VI. Effect of abuse on health. *Arch Pediatr Adolesc Med.* 2002;156:811–817
39. Fein JA, Kassam-Adams N, Gavin M, Huang R, Blanchard D, Datner EM. Persistence of posttraumatic stress in violently injured youth seen in the emergency department. *Arch Pediatr Adolesc Med.* 2002;156:836–840
40. Hillis SD, Anda RF, Dube SR, Felitti VJ, Marchbanks PA, Marks JS. The association between adverse childhood experiences and adolescent pregnancy, long-term psychosocial consequences, and fetal death. *Pediatrics.* 2004;113:320–327
41. Lansford JE, Dodge KA, Pettit GS, Bates JE, Crozier J, Kaplow J. A 12-year prospective study of the long-term effects of early child physical maltreatment on psychological, behavioral, and academic problems in adolescence. *Arch Pediatr Adolesc Med.* 2002;156:824–830
42. Walker EA, Unutzer J, Rutter C, et al. Costs of health care use by women HMO members with a history of childhood abuse and neglect. *Arch Gen Psychiatry.* 1999;56:609–613
43. Widom CS. Posttraumatic stress disorder in abused and neglected children grown up. *Am J Psychiatry.* 1999;156:1223–1229
44. Wyatt GE, Loeb TB, Solis B, Carmona JV. The prevalence and circumstances of child sexual abuse: changes across a decade. *Child Abuse Negl.* 1999;23:45–60
45. National Clearinghouse on Child Abuse and Neglect Information. *Child Abuse and Neglect State Statute Elements: Number 2, Mandatory Reporters of Child Abuse and Neglect.* Washington, DC: US Department of Health and Human Resources; 2001
46. *Gray v State of Florida*, 520 So2d 584 (Fla SCt 1988)
47. *State of Minnesota v Grover*, 437 NW2d 60 (Minn SCt 1989)
48. *State of Wisconsin v Hurd*, 400 NW2d 42 (Wis Appeals Ct 1986)
49. *Kimberly SM v Bradford Central School*, 649 NYS2d 588 (NY SCt, Appellate Division 1996)
50. *State of Missouri v Brown*, 140 SW3d 51 (Mo SCt 2004)
51. *Connally v General Construction Company*, 269 US 385 (US SCt 1926)
52. *Terry v Ohio*, 88 US 1868 (US SCt 1968)
53. *Ornelas and Ornelas-Ledesma v United States*, 517 US 690 (US SCt 1996)
54. Plous S. *The Psychology of Judgment and Decision Making.* New York, NY: McGraw Hill; 1993

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