

Antecedents, psychiatric characteristics and follow-up of adolescents hospitalized for suicide attempt or overwhelming suicidal ideation

Nadia Campanini Rigbini^a, Françoise Narring^b, Carol Navarro^c, Maja Perret-Catipovic^c, François Ladame^c, André Jeannin^a, André Berchtold^a, Pierre-André Michaud^a

^a Institut Universitaire de médecine sociale et préventive, groupe de recherche sur la santé des adolescents (IUMSP/GRSA), Lausanne University Hospital, Switzerland

^b Consultation Santé Jeunes, Geneva University Hospital, Switzerland

^c Centre d'Etude et de Prévention du Suicide, Unité Adolescents, Département de psychiatrie, Geneva University Hospital, Switzerland

Summary

Objectives: To evaluate the socio-demographic as well as the health and psychiatric profiles of adolescents hospitalised for suicide attempt or overwhelming suicide ideation and to assess repetition of suicide attempt over a period of 18 months.

Patients and methods: Between April 2000 and September 2001, all patients aged 16 to 21 years admitted to the University Hospitals of Geneva and Lausanne for suicide attempt or ideation were included in the study. At this time (T0) semi-structured face to face interviews were conducted to identify socio-demographic data, mental health and antecedents regarding suicidal conducts. Current psychiatric status was assessed with the MINI (Mini International Neuropsychiatric Instrument). At T1 and T2, reassessments included psychiatric status (MINI) as well as lifestyles, socio-professional situation and suicidal behaviours.

Results: At T0, 269 subjects met the study criteria, among whom 83 subjects (56 girls and 27 boys) left the hospital too quickly to be involved or refused to participate in the study (final sample at T0: 149 girls; 37 boys). The participation rate

at T1 and T2 was respectively 66% and 62% of the original sample. The percentage of adolescents meeting the criteria for psychiatric diagnoses (91%) was high: affective disorder (78%); anxiety disorder (64%); substance use disorder (39%); eating disorder (9%); psychotic disorder (11%); anti-social personality (7%) with most subjects (85%) having more than one disorder. Around 90% of the subjects interviewed at T1, and/or T2, had received follow-up care after their hospitalisation, either by a primary care physician or a psychotherapist or both. Two subjects died of violent death and 18% made a further suicide attempt.

Conclusion: Most adolescents hospitalised for suicidal episodes suffer from psychiatric problems which should be addressed by a careful psychiatric assessment, followed up if needed by a structured after care plan.

Key words: suicide; suicide attempt; suicidal ideation; adolescents; young people; follow-up; psychiatric diagnosis; hospital; life events

Introduction

Adolescent suicide and suicide attempts constitute an important public health problem in most European countries as well as in the rest of the world [1, 2]. In Switzerland suicide is the second cause of death among young people 15–19 years old, and the first cause among those 20–24 years old [3]. In a national health and lifestyle survey conducted in 2002 among approximately 8000 teenagers ages 16 to 20 in Switzerland [4] the lifetime prevalence of suicide attempt was 8.2%

among females and 3.2% among males, with 3.4% and 1.6% reporting a suicide attempt over the last twelve months, a rate which corresponds to the one found in a similar survey ten years before [5].

Efforts to identify adolescents at risk for suicide or suicide attempt have led to the identification of several predictive factors, among which two seem important. Firstly, the presence of a psychiatric disorder and secondly, a history of previous suicide attempt(s) or of severe suicidal ideation. In

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adolescence as in other periods of life, psychiatric disorders, particularly depressed mood have been shown to be linked to suicidal behaviours [6, 7], including repetition of suicide attempts [8]. The proportion of adolescents having attempted suicide who suffer from psychiatric disorders, however, varies depending on the country and the population studied [9–12]. With one exception [13], such data are not available in Switzerland.

Several authors currently consider that one of the best ways to prevent suicide among adolescents lies in the field of selective/secondary prevention, that is interventions which focus on the improved recognition, treatment and follow-up of at-risk youth, particularly those with co-morbidity or who have made a suicide attempt [14–16]. Such an approach requires specific skills from the medical and psychiatric teams involved in the reception of suicidal adolescents. Unfortunately, there is a current lack of data regarding the extent to which these procedures are applied in Switzerland and what their impact might be.

A multicenter study involving professionals from two Swiss cantons (Vaud and Geneva) was set up, with the aim of comparing, across different settings, the characteristics, the inpatient care and the after care of adolescents hospitalised for suicide attempt or overwhelming suicidal ideation. Emphasis was placed on the impact of various types of inpatient treatment and after care on subsequent suicidal behaviour, psychiatric disorder and psychosocial integration over a follow-up period of 18 months. The aim of this paper is to present the socio-demographic characteristics as well as the health and psychiatric profiles of these adolescents at inclusion time as well as some data pertaining to their follow-up at 6 and 18 months after hospitalisation. Several questions will be addressed: firstly, upon admission to the hospital, what proportion of these adolescents suffer from affective/psychiatric disorders and what type; secondly, how many receive medical and or psychiatric care after their hospitalisation; thirdly, what is the rate of further suicide attempt.

Methods

Context

There are currently no universally recognised standards for the inpatient care of suicidal adolescent patients, nor is there a uniform set of recommendations that provide an optimum procedure for the follow-up of such patients [17]. Each country or region therefore defines its own guidelines. In France, a recent document of the ANAES [18] recommends a hospitalisation of at least 3 days with somatic and psychiatric care for all young people 15 to 24 years old who have attempted suicide. Norway, Sweden and Finland have set up large suicide prevention programs including easy accessibility to psychological or psychiatric evaluation and family consultation [19]. In Switzerland, there are large differences from one hospital to another regarding the way such situations are handled. For instance, the University Hospital of Geneva established some eight years ago a special unit for the inpatient care of young people 16 to 21 years old having attempted suicide [20], while these patients in the canton of Vaud are handled either in the emergency wards of the hospitals, in psychiatric hospitals or in a unit hosting young people with various types of psychiatric diagnoses.

Sampling procedure

Between April 2000 and September 2001 young people aged 16 to 21 years and hospitalised for suicide attempt or overwhelming suicidal ideation were asked to enter the study. Inclusion criteria were: speaking French fluently, living in the area of Geneva or in the canton of Vaud and not suffering from severe mental retardation. Recruitment institutions included the emergency departments of the University Hospitals of Geneva and Lausanne, the adult psychiatric departments of Geneva and Lausanne, and two adolescent Units, one in Lausanne, addressing non-specific psychiatric disorders, the other in Geneva, admitting only suicidal adolescents, usually after a first assessment within the emergency ward. As will be further discussed, we have decided to include in this study both adolescents who had attempted suicide and those admitted for overwhelming suicidal ideation (impending suicide gesture). The literature indeed suggests that there are no real basic

differences between these two groups, in terms of psychopathology and outcome [21, 22].

Patients meeting inclusion criteria were invited to take part in the study by a member of the psychiatric staff. Those who agreed were interviewed by two trained research psychologists who were not involved in the treatment and only responsible for data gathering at each phase of the study. The first face to face interview (T0) took place within one week of admission, most often within 48 hours, during the time frame of April 2000 to September 2001. Oral and written informed consents were obtained before the interview. Confidentiality and anonymity of the collected data was guaranteed, as well as the option to withdraw participation at any time. The research protocol was approved by the Ethical Commissions of the Medical Faculties of Geneva and Lausanne.

The follow-up procedure included two face to face interviews at six (T1: October 2000 to April 2002) and eighteen (T2: September 2001 to April 2003) months respectively. At each step, the adolescents received a letter announcing a phone call by the psychologist who would then schedule a meeting in an ambulatory setting, at home or in a public place.

Instruments

At inclusion time (T0) the assessment included a descriptive psychosocial and health questionnaire, derived from a previous research instrument [13] and including: demographic, social and familial data; leisure activities and substance use; stressful life events (last two years); perceptions about body image, plans for professional and personal future; problematic behaviour and family/social difficulties (theft, impulse control, violence and aggression, running away, conflicts); somatic health, recent and previous attempted suicide, recent suicidal ideation and previous hospitalisation for suicidal conducts or other causes.

Psychopathological assessment was based on the French version of the Mini International Neuropsychiatric Instrument, which was developed jointly by psychiatrists and clinicians in the United States and France to cover the DSM-IV Axis I disorders [23, 24]. The MINI is

used in face to face interviews and supports the assessment of diagnoses such as affective disorders, anxiety disorders, eating disorders, psychoactive substance use disorders, psychotic disorders and antisocial disorders. The psychologists were trained to use this instrument by a French member of the original team which developed it.

At six months (T1) the adolescents were again interviewed and asked about their perceptions of the hospitalisation, the nature and frequency of medical and/or psychiatric after care, lifestyle, and personal, family, social and

professional situations. The MINI assessment was performed as well. At eighteen months (T2) the same procedure was employed, including the use of the MINI. The second data collection (T1) ended in April 2002 and the third (T2) in May 2003.

We report in the next sections results of bivariate statistical analyses. Due to the descriptive nature of the paper we did not perform multivariate analyses. For the same reason we do not report here statistical tests.

Results

Sample characteristics, inclusion and attrition rate

During the inclusion period, two hundred and sixty-nine subjects met the study criteria, among whom 83 subjects (31%: 56 girls and 27 boys) either refused to participate in the study or left the hospital too quickly to be involved. Most of the non-included patients had been admitted after

a suicide attempt (rather than suicidal ideation). Around 60% of them had not been informed of the study before leaving the hospital, especially when hospitalisation had occurred during the weekend. The reasons for non-inclusion are presented in table 1. Among the 186 adolescents included at T0, 63% were hospitalised after a suicide attempt and 37% for overwhelming suicidal ideations.

Table 1
Eligible patients not included in the study.

	total		female		male	
	N	%	N	%	N	%
Refusals	24	29	16	19	8	10
No contact after agreement (did not attend the appointment)	10	12	6	7	4	5
Study not proposed	49	59	34	41	15	18
Total	83	100	56	67	27	33

Table 2
Socio-demographic characteristics of the adolescents admitted to hospital for attempted suicide or overwhelming suicidal ideations at T0 (N = 186).

	total N	total % ¹	adolescents admitted for attempted suicide	adolescents admitted for overwhelming suicidal ideations
Age (years)				
16–17	82	44	52	30
18–21	104	56	66	38
Gender				
Female	149	80	93	56
Male	37	20	25	12
Nationality				
Swiss	112	60	68	44
Other	74	40	50	24
Current living arrangement				
With family members	126	68	81	45
Without family members	59	32	36	23
Missing	1	1	1	0
Parental status				
Living together	100	54	67	33
Divorced or separated	72	39	39	33
Widowed	13	7	11	2
Missing	1	1	1	0
Current activity				
School or work	123	66	78	45
None	63	34	40	23

¹ For "Current living arrangement" and "Parental status", the percentages sum up to 101 due to rounding.

Table 3

Participation rates at T0, T1 and T2 among adolescents having attempted suicide or with overwhelming suicidal ideations.

	T0		T1		T2	
	N	%	N	%	N	%
Female	149	80	99	53	90	48
Male	37	20	23	1	26	14
Total	186	100	122	66*	116	62

* The column percentages sum up to 65 instead of 66 due to rounding.

Table 4

Percents of adolescents meeting the criteria for one or several DSM-IV axis I diagnoses at T0 (N = 186).

Current diagnoses	N	%
Affective disorder	143	78
Anxiety disorder	119	64
Substance use disorder	73	39
Eating disorder	16	9
Psychotic disorder	21	11
Antisocial personality	13	7

Girls (n = 149) were far more numerous than boys (n = 37). One hundred subjects were included in Geneva and 86 in Lausanne. The main baseline characteristics of the 186 participants are presented in table 2. There were no apparent socio-demographic differences between adolescents hospitalised for a suicide attempt or for overwhelming suicidal ideations.

Table 3 displays the participation rate at T0, T1 and T2: 66% and 62% of the initial sample were interviewed respectively at T1 and T2, while some adolescents who had not been reached at T1 could be interviewed at T2. At T1, among those not included, 15 subjects refused to be interviewed, 12 only accepted to answer a few questions by phone, 10 initially agreed but did not attend the appointment and 26 could not be reached. Similar percentages were found at T2. Two adolescents died from violent death over the 18 month follow-up period, one between T0 and T1, and the other between T1 and T2. The major loss of participants occurred during the first six months: the attrition rate was 34% between T0 and T1, 38% between T0 and T2, and 5% between T1 and T2 (retention rate T0-T2: 62%). Patients who dropped out differed slightly from those who did not: they were older, tended to be non-Swiss citizens and living on their own instead of with their family. There was no difference between subjects included at T1 and/or T2 and drop-outs regarding psychiatric disorders at baseline.

Participants' previous life events, health and lifestyles

During the previous two years, many participants had experienced stressful life events. Those events most reported were school or professional failure (37%), romantic break-up (36%), family conflicts (34%), changes in life circumstances (26%) and moving house (24%). School or professional failures were more present among boys, while girls had experienced more romantic break-ups, changes in life circumstances, and aggression.

There was no apparent difference between participants admitted to hospital for a suicide attempt and those admitted for overwhelming suicidal ideations except that in the former group, the percentage of those already enrolled in psychiatric care was lower (27% versus 41%).

Use of psychoactive substances was fairly high. Of the 186 participants, 73% reported that they smoked cigarettes regularly, 65% of whom smoked 20 or more cigarettes per day. Among the 75% of those reporting alcohol use, 24% said that they drank at least once a week or every day. Almost half of the adolescents (48%) had used illegal drugs during the last month, the most frequently cited substance being cannabis. Among cannabis consumers, 12% had consumed cannabis once or twice within the last month and 33% reported a more frequent use. Almost one fifth of the participants (N = 35) had had legal problems and 12% had been previously sentenced (boys: 27%; girls 8%). Eighty-one participants had run away at some time over the previous years (boys: 27%; girls: 48%).

Among the 149 girls of the cohort, 23 had experienced pregnancy (15%): 14 had had an abortion, 5 had suffered from a miscarriage, 3 were mothers and one was pregnant at the moment of the interview. Thirty-six percent (girls: 44%; boys: 3%) of the participants reported that they had been victimised (molesting/sexual abuse/rape). Almost two thirds of the participants reported functional symptoms (girls: 68%; boys: 49%). During the preceding year, 90% of the subjects (164/182) had visited a physician at least once, 43% of them on more than five occasions. Around thirty-two percents of participants were undergoing psychological treatment, the difference between those admitted following a suicide attempt and those admitted for overwhelming suicidal ideations being apparently important (27% versus 41%).

Psychiatric disorders

At inclusion time, 91% of patients were diagnosed with at least one DSM IV Axis I psychiatric disorder using the Mini International Neuropsychiatric Interview (table 4). Depression was by far the most frequent psychiatric condition experienced. About two thirds suffered from an anxiety disorder (at least one diagnosis: social phobia, agoraphobia, panic trouble with/without agoraphobia, obsessive-compulsive disorder, post-traumatic stress disorder, generalised anxiety disorder) and more than one third had a substance use disorder (at least one diagnosis: substance dependence, substance abuse, alcohol dependence, alcohol abuse). Among the 169 patients who were given a psychiatric diagnosis, only 26 subjects met the criteria for one disorder, while the majority (85%) suffered from more than one disorder: 38 from two disorders, 31 from three disorders and 74 from four or more disorders. Table 5 outlines the types of associations between these various DSM IV Axis I disorders. There were no apparent differences between female and male subjects nor between those

hospitalised for suicide attempt or overwhelming suicidal ideation regarding the amount and type of psychiatric disorders.

Antecedents of suicidal conduct

Fifty-three percent of the subjects had previously attempted suicide: 48% of those admitted for attempted suicide and 61% of those admitted for overwhelming suicidal ideation. The percentage of subjects with previous suicide attempt was higher among girls than among boys (57% versus 35%). Among the 118 participants having attempted suicide, ninety (74 girls, 16 boys) had taken medicine, 55% of which had been taken from the medicine chest at home and 32% had been prescribed by a physician. One third of the participants reported previous self-mutilation(s), occurring several hours, days or months before hospitalisation.

Follow-up care and recurrence of suicide attempt

Among the 134 subjects traced at T1, only 10% (14/134) were receiving no follow-up care at all, while 23% (31/134) had been seen by a primary care physician, a psychiatrist or a psychologist on one or several occasions, and 66% (89/134) had been seen regularly. At T2, 23% (29/127) had had no follow-up care between T1 and T2, 21% (26/127) had been seen by a primary care physician, a psychiatrist or a psychologist one or several times and 57% (72/127) had been seen regularly. There was no apparent difference in the rate of subjects receiving follow-up care between male and female participants at T1 or T2.

Over the 18 months of follow-up interviews, 18% of the subjects contacted at T1 or T2 had made a suicide attempt since T0: 21 at T1; 16 at T2; seven of them both between T0 and T1 and between T1 and T2. Moreover, two subjects died of violent death, one between T0 and T1 and the other between T1 and T2.

Table 5

Percents of subjects meeting the DSM IV criteria for several psychiatric disorders (co-morbidity) at T0 (N = 186).

	affective disorder	anxiety disorder	substance use disorder	psychotic disorder	eating disorder	antisocial personality
Affective disorder		N = 105 56%	N = 53 28%	N = 10 5%	N = 14 8%	N = 13 7%
Anxiety disorder			N = 54 29%	N = 16 9%	N = 11 6%	N = 9 5%
Substance use disorder				N = 11 6%	N = 7 4%	N = 12 6%
Psychotic disorder					N = 1 1%	N = 4 2%
Eating disorder						N = 2 1%
Antisocial personality						

Discussion

This paper presents the main results of a multicenter prospective study of adolescents hospitalised for a suicide attempt or overwhelming suicidal ideations. The health profiles of these subjects as well as the occurrence of certain previous life events confirm the importance of factors often associated with suicidal ideations and conducts, such as violence perpetration [25], running away [5], school problems [26], stressful life events [27–29], a history of parental separation or divorce [6, 27, 28] and a previous suicide attempt [16, 29–33]. A particularly remarkable factor was the high percentage of females who reported having experienced pregnancy (15%), a percentage much higher than the 4% which is found in the general population of the same age range [34]. This association is seldom discussed in the existing literature [35].

As in the findings described by other authors [11, 27, 28, 36], the vast majority of our participants had evidence of serious psychopathology, the most common conditions being mood disorders

and substance abuse. Wunderlich [10] and Haw [36] found respectively that there was at least one psychiatric disorder present in 91% and 92% of all suicide attempts, a percentage very similar to what we have found (91%). These disorders are often seen in combination [11, 16, 27, 28, 33, 36]. In our study we found that most participants met the DSM IV criteria for more than one mental disorder (85%), confirming the importance of co-morbidity among adolescents hospitalised for a suicidal crisis. The high rate of multiple diagnoses which we found may be related to the comprehensive evaluation which we systematically used in this study, an evaluation which is not often performed in such a methodical way in the everyday routine of busy hospitals, as attested by Suominen et al. [37].

Approximately 90% of our subjects received at least some kind of follow-up health care [regular or irregular), a higher percentage than the one found in a French study conducted among adoles-

cents aged 13 to 18 and hospitalised for a suicide attempt [31]. The higher percentage which we found may be linked with a retention rate at 6 months which was lower in our study than in the French one (66% versus 90%). In other words, the figure of 90% of our participants involved in some follow-up care may overestimate the reality of all adolescents hospitalised for suicidal crises: on one hand, rates of follow-up care was higher among adolescents hospitalised for severe suicidal ideation, whose majority were already known to psychotherapists; on the other hand this high rate may be explained by the fact that adolescents getting no follow-up care may be more numerous among the youngsters who were not involved in the study or those who could not be contacted at T1 or T2.

What about further suicidal gestures [38]? Over the 18 months of follow-up, 18% of the subjects traced at T1 and/or T2 had made a suicide attempt since T0 and two female subjects died by abusing – intentionally or not – psychoactive substances. Both had previously attempted suicide on several occasions. A review by Brent [39] points to the fact that attempters have an increased risk of completing suicide of the magnitude of 0.5–1.0% per year. In a study of mortality rates among 485 children and adolescents hospitalised following a suicide attempt and who could be followed up over a 5-year period, 10 subjects died from any cause, a percentage which is four times higher than that found in the general population of similar age [40]. A French study targeting adolescents hospitalised for suicide attempt over an eleven year follow-up reports a percentage of 10% who died, most of them (14/15) from violent death [41]. Several authors report figures concerning further suicide attempts, with rates ranging from 3 to 13 [7, 8, 38, 40–42]. We did not find any study including a sample corresponding exactly to ours (age, duration of follow-up period). However, the figure of 18% of repeated suicidal gesture which we found is fairly similar to the findings of other surveys, such as a Canadian follow-up study of 548 five to nineteen year olds, which reports a 24% rate of further suicide attempts over a six-month period [42]. In addition, a sample of 53 American female adolescents who had made a suicide attempt was followed up at three months, and 12% reported a repeat attempt [8]. Overall, the percentage of suicide attempt recurrence among adolescents after one or two years varies between 14% and 42% [7], probably due to different psychiatric and socio-demographic characteristics of included subjects.

Limitations

During the 18 months of the first phase of the study, 269 patients were admitted into hospital, of whom 186 (69%) were included in the study. We did not have any access to the files of those who could not be included in the sample and thus do not know whether they differ from the subjects included in the research. The proportion of 31% of

patients who refused to participate or who left the hospital before they could be asked to take part is similar to that which was recently reported by Haw et al. [36] in a study involving suicidal patients aged 15 years and over (67% of 217 potential subjects). Forty-nine eligible patients were lost because of an admission occurring during the weekend, and there may have been various reasons for this. The weekend emergency ward staff may be different from the weekday staff and could be less aware of the specific requirements of suicidal adolescents; moreover, they were probably less aware of the importance of including the patients in the study. Finally, one can imagine that the medical and psychiatric staff receiving such patients over the weekend is often overburdened and has no time to devote to extra tasks besides the first line of care.

As far as the attrition rate is concerned, the 36% of participants who dropped out is higher than in other studies [31, 43–45], which, however, did not include such a detailed follow-up assessment and/or did not last as long as eighteen months. The two deaths, announced by the subjects' families, were included in the analyses and information from the Office of Population did not reveal any other death among the subjects who could not be re-contacted. While 41% of all drop-outs could not be traced, 57% refused to be re-interviewed, some of them expressing a fear of discussing painful issues. The difference in the socio-demographic characteristics of subjects interviewed and not interviewed in the follow-up is not surprising: one would indeed expect the latter to be older, not living with family and using psychoactive substances in a higher proportion. These discrepancies will have to be taken into account in future analyses focusing on T1 and T2 outcomes.

As outlined in the method section, we decided to include in this study both adolescents who were hospitalised for an attempted suicide as well as those who were admitted for overwhelming suicidal ideation (impending suicide gesture). We found no apparent difference between these two groups in terms of potentially traumatic circumstances and antecedents, nor in terms of health problems. The psychiatric profiles of both groups were similar. These results confirm the observations made by other authors who state that both groups should be considered together as a homogeneous sample [21, 22].

Implications

While the universal prevention of suicide among adolescents has failed to achieve effectiveness, selective prevention targeting high risk youth may prove more efficient [14, 15, 46–51]. The high percentage of Axis I mental disorders, particularly of depressive disorders, which we found suggests that adolescents who present to the hospital for a suicide attempt or overwhelming suicidal ideation should undergo a careful psychiatric assessment and, if needed, psychotherapeutic after care. The evaluation and follow-up care of these adolescents

should not exclusively target the prevention of suicidal gesture but also focus on the resolution of underlying psychiatric problems and social difficulties which many of these youngsters face, often with severe personal suffering. Indeed, while many adolescents hospitalised for suicidal conduct do not repeat their gesture, this event signals a personal vulnerability which requires prompt and effective support and assistance. In other words, a suicide attempt or a hospitalisation for overwhelming suicidal ideation should be considered as a symptom of underlying trouble which necessitates an intervention.

Such an evaluation and the organisation of follow-up care require time. Currently, many French hospitals keep suicidal adolescents at least three days to allow for such an assessment. Similarly, the HUG in Geneva has set-up a special unit caring for these young people, though admission to the unit is optional. Our study revealed that many suicidal adolescents do not receive such optimal care and follow-up. The number of patients ($N = 59$) who left the hospital before they could be offered the chance to participate in this study, highlights the necessity for more stringent procedures regarding the care of these high risk patients, especially during the weekend. One option would be to keep those adolescents who need closer evaluation, but not necessarily psychiatric care, in hospital at least three to four days in somatic wards, a policy which has been recently introduced in French hospitals [18]. By moderately increasing the duration of the stay, one allows for the development of a stronger relationship with the psychiatric team, which helps to overcome the usual phase of denial which both the patients and their relatives quite often express. Furthermore, the staff working in emergency units and in general wards should be trained to better address the special needs of suicidal adolescents. Such training should focus explicitly on the evaluation of the risk of suicide, on the assessment of underlying psychiatric disorders and on the identification of resource professionals working outside the hospital and who can provide medical, psychiatric and/or social after care. The results of this study have already motivated the Lausanne University hospital to develop such stan-

darised evaluation and treatment procedures for these high risk youth, with the idea of progressively promoting this approach in other hospitals, both at the local and regional levels.

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Correspondence:

Professor P.-A. Michaud

GRSA

Institut universitaire de médecine sociale
et préventive

Bugnon 17

CH-1005 Lausanne

E-Mail: Pierre-Andre.Michaud@hospyvd.ch

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