ASSESSMENT ON HEALTH CONDITION OF AGENT ORANGE/DIOXIN EXPOSED POPULATION IN NINH BINH PROVINCE

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Introduction

The long-term consequences caused by agent orange/dioxin, which was used by American army on the environment and human health was confirmed by many domestic and foreign studies. There was a lot of people affected by dioxin not only people living in sprayed areas and hotspots in Vietnam, but also billions of North Vietnameses, who were exposed to dioxin during the time of the Vietnam war. After the war, they came back to the North locality to live. They and their descendants still suffer diseases and difficulties due to the effects of dioxin**,** So they really need help and care.

The studies, investigation and serveys of health situation and the component structure of above people living in North provinces are very important, appropriate and actual. The results of the studies are basis for health security, health protection and function recovery plan in order to help the people overcome difficulties in their life, rising to integrate with the community. Besides, They also make many important contributions to exprienced lessions on content servey implementation, comprehensive investigation on people, who suffer consequences caused by agent orange/dioxin, which was sprayed by American army during the war in Vietnam.

Materials and methods

The determination of the size, surveys and investigation areas were selected by the provincial administrative boundaries. In which, when designing the questionnaire and establishing local investigation team, the level of cultural characteristics, social awareness, natural conditions and environment...etc were noted. Besides, it is very essential to identify a big enough number of people, who were exposed to agent orange/ dioxin (directly exposed or indirectly exposed to orange/dioxin) in sprayed areas in war time (1961 – 1975). From actual studies, the study content was selected to implement in Ninh Binh province.

The main methods were used in study include: Corss sectional survey method; Statistics method; Personal interviews (direct interview or third - person interview) and answering designed QUESTIONNAIRE; Retrospective method (based on medical information and data related to studies, specific cases testing)

Results and Discussion

Table 1: The number of people per household exposed to agent agent orange/ dioxin

Time	Total Number Of Household Which has Exposed people	Total Number of exposed People	The number of people per household					% of Number of household which has exposed people	% Of Total Population Were Serveyed
			1 person	2 persons	3 persons	4 persons	More than 4 persons		
1988	2.196	5.018	452	1.029	460	167	61	uncalculate	0,57%
2012	22.647	34.500	14.377	5.746	1.756	477	291	9%	3,83%

The above data shows that: Total number of exposed people (2012) rapidly increased, it is almost 8 times higher than the 1998 data. The main reasons are as following:

✓ Perception is incomplete, doubt psychological victims, stigma, difficulties in social integration, affects family building for descendants.
✓ Dioxin-related diseases increase with time, the results of research (by the Institute of Medicine (IOM) of the Academy of the United States National Science (NAS), 4 patients in 1996, 17 diseases related to dioxin in 2007).
✓ Health care facilities are limited and regular health examination is not performed
✓ The statistics are incomplete due to financial and capacity limitation to investigate.
✓ Time and space investigation in 2012 are more clearly extended than in 1998.

Table 2: Number of people exposed to agent agent orange/ dioxin and died in Ninh Binh Province.

Quantity / Status	Number of people exposed to agent orange/ dioxin in war	Nunber of people directly sprayed in war	Number of people living in sprayed areas (indirectly) and diseased, deformed descendants of exposed people
Live in Ninh Binh	19.940	6.465	13.475
Died	2.166	824	1.342
Total	22.106	7.289	14.817

The above data shows that: Death rate for people directly exposed in the sprayed area during the war (about 11.3%), not bigger than the rate for people indirectly exposed in the sprayed area and diseased and deformed descendants of people exposed (about 9,1%). These results allow to conclude that effects of exposure to Agent Orange / dioxin slow down and still continue to influence the next generations.

In some surveys, the number of veterans participating in the war accounted for about 94% of the total exposed people. After returning to locality to live, some veterans who directly sprayed died about 13.7%, the number of people who live in sprayed areas and the descendants of exposed people (disease, deformity) accounted for about 10,3%. The rate is higher than the one for people, who is not veteran. Therefore, health care for veterans exposed to Agent Orange / dioxin and their children, their grandchildren need to be more interested in than the other.

Table 3: The results of servey on alive people directly exposed by the spraying of Agent Orange / dioxin during the war

Characteristics / Quantity		Gender		Current age group			
		Male	Female	Less than 55	56 - 65	66 - 75	More than 75
Total number of people directly exposedin the war (alive)	19.940	18.810	1.130	835	11.906	6.255	974
Rate	100%	94,3%	5,7%	4,2%	59,7%	31,2%	4,9%

The above data shows that the people belonging to the 56 – 65 age group accounted for a greater part (59,7%). This figure is entirely reasonable, because if we take the common age of these people participating in the military efforts at 18-20, the exposure living time in directly sprayed areas corresponds to from 1965 to 1976. This time period corresponds to the number of missions, the number of Agent Orange / dioxin used by U.S. military most, as well as delays due to extended time effects, residual strength, spread of Agent Orange / dioxin into the environment over time, level of exposure via food, water in the following years after stopping spraying campaigns (1972).

Table 4: The results of servey on illnessces and deformations among children (F1) and grand children (F2) (alive) of people directly exposed to dioxin during war time.

Generation	Total	Gender		Age Group			
		Male	Female	Less than 6	6 - 15	16 – 18	More than 19
F1 Generation	7.866	4.747	3.119	177	262	1.043	6.384
	100%	60,34	39,66	2,30	3,33	13,25	91,12
F2 (Grandson) Generation	1.946	1.243	703	567	889	335	155
	100%	63,90	36,10	29,10	45,68	17,21	8,01
F2	1.165	647	518	400	595	133	37

(Granddaughter) Generation	100%	55,54	44,46	34,33	51,07	11,41	3,91

The above data shows that the significant increase of the F2 generation victims in recent years and it raises many problems for further investigation, intensive medical and biological survey as well as the need for more related studies of natural sciences, social sciences (genetic problems, loss of balance gender, age of diagnosis, …). The research results and subsequent investigation will be the basis for the intervention of the community more effectively to minimize negative impacts on people exposed to agent orange / dioxin in the Vietnam war.

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