Minutes of the 4th Scientific Advisory Committee of NIREH, Bhopal
held on 27/12/2014

The fourth meeting of the Scientific Advisory Committee of the National Institute for Research in Environmental Health (NIREH) met on 27/12/2014 at 10.00 AM in the conference room of NIREH, Bhopal. The meeting was attended by the following members:

1. Dr. V. M. Katoch
   Secretary DHR & DG, ICMR
   ……Chairperson

2. Lt. Gen (Dr.) D. Raghunath
   Jayanagar, Bangalore
   ……Co-Chair

3. Prof. N. K. Mehra
   AIIMS, New Delhi
   ……Core Member

4. Dr. V. K. Vijayan
   Advisor to DG, ICMR, Kozhikode
   ……Core Member

5. Dr. S. K. Dave
   Ahmedabad
   ……Core Member

6. Dr. Sunita Saxena
   Director, NIOP, New Delhi
   ……Expert Member

7. Dr. Raj Lakshmi Gope
   NIMHANS, Bangalore
   ……Expert Member

8. Dr. D. K. Shukla
   Head, NCD, ICMR Hqts, New Delhi
   ……Member

(Approved by DG on 10/1/2015)
gas exposed survivors in Bhopal (likely to be about 3,00,000 individuals) and their clinical examination with a focus on disease identification was proposed.

The committee opined that though the study is important yet it will not give any additional information over and above what is already known about the health problems being faced by the survivors and the benefit expected from the study may not be commensurate to the investment in this venture. Therefore, Dr. Anil Prakash was advised to restrict the study to the Phase I at the moment, do the triangulation of different existing data bases to understand the morbidity pattern and compare the morbidity pattern with the results of the ongoing Long Term Population Based follow up study of NIREH.

The project was therefore approved for 1 year to take up only Phase I. Dr. Anil Prakash was advised to reframe the budget needed for Phase I and submit to the Chairperson for approval.

2. Cytogenetic profiling of patients with chronic kidney disease: Evaluation of genomic instability

This study entitled "Cytogenetic profiling of patients with chronic kidney disease: Evaluation of genomic instability" was reviewed in the meeting of the Genetics Research Expert Group of NIREH held on 8/9/2014 which approved the project in principle with suggested modifications. The modified project in the light of comments of the Genetics Research Expert Group was presented before the SAC by Dr. Gopesh Modi in his capacity of Co-investigator in the absence of the PI Dr. R. M. Samarth, Asstt. Prof., BMHRC attached with NIREH. This 3-years study with a budget of Rs. 34,28,000/- proposes to prepare cytogenetic profile of gas exposed and unexposed individuals with chronic kidney disease through conventional cytogenetic techniques (karyotype analysis and other cytogenetic endpoints) and molecular cytogenetic techniques (FISH). A total of 700 patients of both the sexes (Male-Female ratio 70:30) belonging to 8 different categories will be studied for cytogenetic profiling.

The committee approved the study.

3. A hospital based study of congenital malformation in the neonates of gas
exposed and non-exposed mothers and their first generation progenies in Bhopal

Dr. Ruma Galgalekar, Scientist B and the PI informed that it is a revised proposal incorporating changes suggested by the Epidemiological Expert Committee of NIREH in its meeting on 19/1/2013. In the revised proposal of 6 months duration with a budget of Rs. 4,10,000/- she proposes to examine 1,250 neonates delivered to mothers from the toxic gas exposed population (in Indira Gandhi Hospital catering exclusively to gas exposed population) and 1,250 neonates born to mothers from the non-exposed population (in Sultania Zanana Hospital catering to general population) to explore the difference, if any, in the prevalence of congenital malformation in children born to gas exposed and un-exposed mothers and their first generation progeny. The project has been cleared by IEC of NIREH and IEC approval from GMCH is awaited.

The committee approved the project.

4. Impact assessment of implementing standard respiratory rehabilitation module to toxic gas exposed victims of COPD in Bhopal at community level

Dr. Ruma Galgalekar, Scientist B presented a new project entitled “Impact assessment of implementing standard respiratory rehabilitation module to toxic gas exposed victims of COPD in Bhopal at community level” which envisages to assess the role of pulmonary rehabilitation in the comprehensive management of COPD cases and identify barriers preventing them from participating and realizing the clinical benefits of pulmonary rehabilitation. This project was proposed for 2½ years with a budget of Rs. 49,17,080. Dr. Ruma Galgalekar proposed to enroll 180 gas exposed COPD subjects belonging to 40-75 years age of both the sexes. The subjects will be randomly assigned to pulmonary rehabilitation group (Gp I; n=90) and a control group (Gp II; n=90). Subjects in Gp I will be treated with the standard COPD medications as per GOLD criteria and will also receive pulmonary rehabilitation under the supervision of qualified Physiotherapist daily for one hour for one month at a community rehabilitation centre. The subjects in Gp II will receive only standard COPD medications as per GOLD criteria as out
Minutes of the 6th Scientific Advisory Committee Meeting of NIREH, Bhopal held on 12/1/2017

The sixth Scientific Advisory Committee of National Institute for Research in Environmental Health (NIREH) met on 12/1/2017 at 10.00 AM in the conference room of Bhopal Memorial Hospital and Research Centre (BMHRC), Bhopal. The meeting was attended by the following members:

1. Dr. V. K. Vijayan, Kozhikode
2. Dr. Padam Singh, New Delhi
3. Dr. H. N. Saiyed, Ahmedabad
4. Prof. N. K. Mehra, New Delhi
5. Prof. J. S. Thakur, School of Public Health PGIMER, Chandigarh
6. Prof. Y. K. Gupta, Head, Pharmacology AIIMS, New Delhi
7. Dr. I. S. Thakur, School of Environmental Science JNU, New Delhi
8. Dr. K. Krishnamurthy, (Nominee of Director, NEERI, Nagpur)
9. Dr. Prabha Desikan, Director I/C, BMHRC, Bhopal
10. Mr. K. K. Dubey, Director, KNH & Dy Secretary, Govt of MP
11. Dr. R. S. Dhaliwal, Sc G & Head, Div of NCD, ICMR, New Delhi
12. Dr. Tanvir Kaur, Sc F & Programme Officer for NIREH ICMR, New Delhi
13. Dr. R. R. Tiwari, Director, NIREH

Following Members - Dr. Kalpana Balakrishnan, SRU, Chennai, Dr. Raj Lakshmi Gope, NIMHANS, Bengaluru, Director/Nominee, CSIR-IITR, Lucknow, Director, NIE, Chennai, Director, NIOH, Ahmedabad; Special invitees - Dean, Gandhi Medical College, Bhopal, Director/Nominee, AIIMS, Bhopal and representatives from ICMR Headquarters – Director General, ICMR and Sr. DDG (Admn.)/Sr. FA could not attend the meeting.

Welcome and Introductory remarks

Dr. R. R. Tiwari, Director, NIREH welcomed all the members. He thanked them for sparing their valuable time for the meeting and expressed hope that their valuable advice and guidance will help scientists of NIREH to improve quality of their projects and research output. He urged the scientists of NIREH to take full advantage of the expertise of SAC members in taking forward the institute towards the path of excellence. After his introductory remarks, Dr. Tiwari requested Dr. Vijayan to take the chair and steer the meeting.

Remarks by Chairperson

Dr. V. K. Vijayan welcomed the members and gave a brief history of the establishment of NIREH in October, 2010 in the backdrop of 1984 Bhopal gas disaster. Initially the Institute started with the limited man-power by taking over the available staff of Centre for Rehabilitation Studies, Govt. of M.P. in project mode. At that time due to the paucity of
1.5% minutes, 4.5 and 1.5% deletions, 36.6 and 20% chromosomal associations were observed in males and females respectively. Members expressed displeasure with the presentation and draft report that lacked scientific contents and merely gave numbers without any analysis or conclusions. Members also pointed out some errors and inconsistencies in the draft report. The Committee advised the PI to rewrite the report in a scientific manner and submit the revised, consolidated Final Report in ICMR format within four weeks.

3. Long term genetic effect(s) of MIC gas, if any, on the Bhopal Population Exposed in December, 1984

This 1-year pilot study, initiated in 2014, could not proceed satisfactorily since beginning due to various unresolved administrative issues and was extended till 31 December, 2016. This study envisaged examination and comparison of current cytogenetic status of 100 gas exposed and 100 unexposed individuals, screened earlier under multi-centric genetic screening study of ICMR in Bhopal during 1986-1990. Giving current status of the project, PI of the project, Dr. Bani Ganguly informed that among the 800 retrieved pre-screened cases in Bhopal (543 exposed, 257 unexposed) only 174 (129 exposed and 45 unexposed) could be traced and biological samples could be collected from 155 consenting subjects. Cytogenetic analysis of 108 subjects has so far been completed. Dr. Bani presented the results of genomic karyotyping, chromosome aberrations, acrocentric association, micronuclei formation, mitotic index etc. of the samples processed so far. Members put up several queries and expressed unhappiness on the slow progress of the project. In view of the left over analysis of remaining samples and task of comparative analysis Dr. Bani requested 6 months no-cost extension of the project. Members after discussion and assessing the status recommended (i) 6-months no cost extension to the project i.e. till 30 June, 2017 including Final Report submission (ii) By 31/3/2017 an interim report should be submitted by Dr. Bani (iii) Final Report should be circulated to Prof. N. K. Mehra. SAC further decided that no further extension will be given to this project.

4. A hospital based study of congenital malformation in the neonates of gas exposed and non-exposed mothers and their progenies in Bhopal

Dr. R. Galgalekar, Scientist B informed that this study, initiated in January, 2016, was originally approved for 6 months but later extended till 31 December, 2016. In this prospective study a total of 1,250 neonates born to directly gas exposed mothers/first generation progeny of exposed mothers and 1,250 neonates born to unexposed mothers were envisaged to be followed up for congenital malformations. She followed the deliveries in 4 gas rohat hospitals. Dr. Ruma informed that so far 1,250 deliveries have been covered in unexposed mothers group whereas in exposed mothers/first generation progeny of exposed mothers group only 920 deliveries have been followed. Members critically reviewed the preliminary data presented by Dr. Ruma, sought clarifications on some issues such as blindling of the pediatrician to the delivering mother’s exposure status while identifying the congenital malformation, authenticity of the gas exposure status of the delivering mothers etc. and the very low congenital abnormality observed in children born to unexposed mothers. They suggested to analyze the data after proper verification of residential status of mothers/fathers, and to consider variables
like parity, consanguinity etc. for analysis. The findings from this study should be critically reviewed by a Committee consisting of Paediatrician, Epidemiologist, Statistician and Geneticist, to be constituted by the DG, ICMR. To complete the sample size in the exposed mothers group, re-analysis of data and final report submission, 6-months extension with budget was sought by Dr. Ruma which was approved by the Committee.

REVIEW OF RECENTLY INITIATED PROJECTS

Funding to the following 3 intramural projects were received recently (September 2016) from the Council –

(i) A cross sectional study on current health status of gas affected individuals of Bhopal: Phase I– Data triangulation to understand health status of gas exposed survivors of Bhopal (PI- Dr. Anil Prakash)

(ii) Effectiveness of institutional versus domiciliary implementation of standard pulmonary rehabilitation module in Bhopal gas exposed survivors having COPD (PI-Dr. R. Galgalekar)

(iii) Cytogenetic profiling of patients with chronic kidney disease: Evaluation of genomic instability (PI-Dr. R. Samarth)

PIs of these projects presented the current status of these recently initiated projects. In all the 3 project preliminary works such as staff recruitment, procurement of supplies etc. have been initiated. Members sought some clarifications regarding the protocols etc., gave useful suggestions for execution of these studies and asked to continue the studies as per protocol and schedule.

REVIEW OF NEW / REVISED PROJECTS

1. Linking and analyses of existing ICMR databases (1985-2015) of epidemiological, clinical, toxicological and genetics studies on Bhopal gas victims

This project (PI-Dr. Sushil Singh, Sc C) was first reviewed in the 5th SAC meeting held on 15/2/2016. SAC had recommended to revise the project in the light of their comments and submit to the Epidemiological Research Expert Group of NIREH. The revised project was discussed and presented during the Epidemiological Research Expert Group meeting held on 27/9/2016. The Group approved the project in principle with some more suggestions and advised to carry out some preliminary work and present in the next SAC. Accordingly, Dr. Sushil Singh presented the revised project and results of the preliminary work of linking of past respiratory study (duration 1985-1988) titled "Respiratory epidemiology of MIC/Toxic gas affected population" with the ongoing long term population based epidemiological study. He linked old data of 6,197 respiratory cases (severe 1,897, moderate 2,130, mild 473 and control 1,697). Members although not fully satisfied with the results presented yet appreciated the efforts of Dr. Sushil Singh and advised him to determine the correlation between the long term epidemiological study and various studies proposed to be linked. He was also advised to seek guidance of Epidemiological Research
Minutes of the 7th Scientific Advisory Committee Meeting of ICMR-NIREH, Bhopal
held on 21/12/2017

The seventh Scientific Advisory Committee (SAC) of ICMR-National Institute for Research in Environmental Health (NIREH) met on 21/12/2017 at 10.00 AM in the guest house of the under-construction NIREH campus at Bhauri, Bhopal. The meeting was attended by the following members:

1. Dr. V. K. Vijayan, Kozhikode  
   Chairperson
2. Prof. N. K. Mehra, New Delhi  
   Member
3. Prof. J. S. Thakur, School of Public Health, PGIMER, Chandigarh
4. Prof. I. S. Thakur, School of Environment Sciences, JNU, New Delhi
5. Dr. K. Krishnamurthy (Nominee of Director, CSIR-NEERI, Nagpur)
6. Dr. Manoj Murhekar, Director, ICMR-NIE, Chennai
7. Dr. Prabha Desikan, Director, BMHRC, Bhopal
8. Dr. Rajesh Malik (Nominee of Director, AIIMS, Bhopal)
9. Dr. R. S. Dhaliwal, Sc G & Head, Div of NCTD, ICMR, New Delhi
10. Dr. Tanvir Kaur, Sc F & Programme Officer for NIREH, ICMR, New Delhi
11. Dr. R. R. Tiwari, Director, ICMR-NIREH, Bhopal
    Member Secretary

Following Members- Dr. Padam Singh, New Delhi, Dr. Kalpana Balakrishanan, SRU, Chennai, Dr. H. N. Satyed, Ahmedabad, Prof. Y. K. Gupta, AIIMS, New Delhi, Dr. Raj Lakshmi Gope, Bengaluru, Director/Nominee, CSIR-IITR, Lucknow, Director, ICMR-NIOH, Ahmedabad; and Special invitees (Dean, Gandhi Medical College, Bhopal, Director, Kamla Nehru Hospital, Bhopal) and representatives from ICMR Headquarters (Director General, ICMR and Sr. DDG (Admn.)/Sr. FA) could not attend the meeting.

Welcome and Introductory remarks

Dr. R. R. Tiwari, Director, NIREH extended a warm welcome to the members and thanked them for sparing their valuable time for the meeting. He expressed hope that their guidance will help the scientists of NIREH in improving the quality of their research studies. He mentioned that the meeting has been arranged in the under-construction NIREH campus so that SAC members can see the progress of the upcoming construction work and offer their advice, if any. He expressed gratitude towards Prof. N.K. Mehra, SAC member and Chairperson of the Building Advisory Committee, NIREH for his guidance in building a green campus of NIREH at Bhauri, Bhopal. After his introductory remarks, Dr. Tiwari requested Dr. Vijayan to take the chair and steer the meeting.

Remarks by Chairperson

Dr. V. K. Vijayan welcomed the members and appreciated the progress made by the institute since its establishment. He recorded his gratitude to Dr. S. Swaminathan, Ex Secretary, DHR and DG, ICMR for her visionary leadership and congratulated her for new assignment as DDG, WHO Geneva. He also complimented Dr. N.K. Mehra, for his active role as the chairperson of the Building Advisory Committee of NIREH and hoped that the construction of NIREH campus will be completed on time. Expressing satisfaction on the
1. A hospital based study of congenital malformation in the neonates of gas exposed and non-exposed mothers and their first generation progenies in Bhopal

This study, initiated in January 2016, was completed in June 2017. Dr. R. Galgalekar, Scientist B presented the delivery outcome results of 1,048 toxic gas-exposed mothers/first generation progeny of exposed mothers and 1,247 unexposed mothers covering 4 hospitals in Bhopal. The incidence of congenitally malformed children borne to exposed/first generation progeny of exposed mothers was 9.0% and borne to unexposed mothers was 1.3%. Incidence of musculo-skeletal system related congenital anomalies was relatively higher in both the Groups (2.8% and 0.5%) compared to other systems. In bivariate analysis factors such as gas exposure to mothers (p<0.001), consanguinity (p= 0.024), folic acid deficiency in mothers (p<0.001), Iron deficiency in mothers (p<0.001), use of tobacco use by mothers (p=0.019) and virus infection during pregnancy period (p=0.013) were found significantly associated with malformation status of neonates. In univariate logistic regression variables such as gas exposure to mothers, consanguinity, folic acid deficiency, iron deficiency, virus infection during pregnancy were found to be significant risk factors for delivering malformed babies. However, in multivariate logistic regression analysis gas exposure status (adjusted odd ratio 9.9, 95% CI 5.6-17.3, p <0.001) followed by tobacco use by mothers (adjusted OR 4.1, 95% CI 1.1-14.8, p=0.033) were found to be the significant risk factors for delivering malformed babies. Members expressed concern on the high incidence of malformed children recorded in the present study and raised several queries related to quality control of data. After lot of
discussion among themselves it was recommended that a committee comprising of a Statistician, Epidemiologist, Paediatrician, Gynaecologist and Geneticist, under the Chairmanship of Dr. S. K. Sharma, Former Professor of Medicine, AIIMS, New Delhi should be constituted to review the data and look into various factors related to exposure. This exercise has to be completed within three months so that decision regarding publication of the findings from this study can be taken without delay.
Minutes of the Meeting of the Expert Group on project “Hospital based study of congenital malformation in neonates of gas exposed and non-exposed mothers and their first generation progenies in Bhopal” under Dr R Galgalekar, NIREH, Bhopal, 4th April 2018, ICMR Headquarters, New Delhi

Members Present:

1. Prof. S. K. Sharma, Retd. Prof. of Medicine, AIIMS, New Delhi ............Chairperson
2. Prof. N. K. Mehra, Former Dean (Research), AIIMS, New Delhi ............Member
3. Prof. Madhulika Kabra, Deptt of Pediatrics, AIIMS, New Delhi ............Member
4. Prof. R. M. Pandey, Deptt of Biostatistics, AIIMS, New Delhi ............Member
5. Dr. R. S. Dhaliwal, Head, Div of NCD, ICMR, New Delhi ............Member
6. Dr. Tanvir Kaur, Programme Officer, NIREH, Div of NCD, ICMR, New Delhi ............Member
7. Dr. Anil Prakash, Sc G, NIREH, Bhopal ..................................Special Invitee
8. Dr. R. Galgalekar, Sc B, NIREH, Bhopal ..................................Special Invitee
7. Dr. R. R. Tiwari, Director, NIREH, Bhopal ............Member Secretary

Dr. S. R. Mundle, Prof (OBGY), Govt. Medical College, Nagpur could not attend the meeting.

Dr RR Tiwari, Director, NIREH, Bhopal welcomed the members on behalf of Director General, Indian Council of Medical Research. Dr Tiwari briefed the members about the background of the study. The Group was informed that the study was initially approved for 6 months duration (DOS 01/01/2016) and was extended two times and was terminated on 30th June 2017. The project was reviewed in the meeting of 7th Scientific Advisory Committee (SAC) of ICMR-NIREH held on 21/12/2017. The SAC expressed concerns on the results of the study and suggested to constitute a separate committee to review the findings including raw data and also look into various factors related to exposure. Accordingly this Group was constituted. Dr Tiwari then requested Dr SK Sharma to Chair the meeting.

Dr Sharma, in his preliminary remarks, stated that there seems to be a lot of methodological issues in this study. A major consideration was how the exposure status of recruited subjects was ascertained. Dr Sharma then requested Dr R Galgalekar, PI to present the findings of the study.

Dr R Galgalekar stated that the project was aimed to estimate and compare the prevalence of congenital malformations in neonates born to gas exposed mothers and non-exposed mothers and their first generation progenies in Bhopal. Dr Galgalekar stated that immediately after the Bhopal Gas Disaster, there was a considerable apprehension about the fate of children borne to mothers who were exposed to MIC gas. The study of pregnancy outcome in women exposed to toxic gas was done during 1985-1986. The incidence of congenital malformations was found to

Dr. SK Sharma
Chairman

Dr. RR Tiwari
Director
be 14.2 per 1000 birth among the gas exposed mothers and 12.6 per 1000 births among the unexposed mothers and the difference was not statistically significant. After a lapse of 32 years; the apprehension has again been raised about the status of congenital malformations in children born to exposed mothers and their progeny. A hospital based study was initiated to estimate and compare the prevalence of congenital malformations in 1250 deliveries in gas exposed mothers and their first generation progeny and 1250 deliveries in unexposed mothers. Four government hospitals of Bhopal were selected for this study. Total number of deliveries was 2295. Consecutive births including both live born babies and still born babies were examined after taking verbal and written consent of their mothers for any visible structural anomalies to determine prevalence of congenital malformation.

Discussion:

The members appreciated the efforts taken by the Principal Investigator. The members discussed the findings of the project and noted that terms “incidence” and “prevalence” are vaguely used. The study design was faulty and with the design proposed in the study; the outcome could not be achieved. The basis of sample size is not provided. It was not clear how exposure status of recruited subjects (expectant mothers) was ascertained and what safeguards were taken to avoid misclassification of exposure status of the recruited mothers. It was not clear why data on anthropometric parameters of delivered babies was not collected. The parameters of folic acid and iron deficiency were not estimated in the study. Inborn errors of folate and homocysteine metabolism are involved in the aetiology of Neural Tube Defects (NTDs). It is not clear what definition of congenital malformation was used for study purposes. The selection of hospitals was not as per inclusion criteria as subsequently all the four selected hospitals were catering to exposed population. The presentation of tabular data is not as per standard norms; it is difficult to interpret the results. Some of the genetic anomalies listed are as per incidence amongst normal population. The data on smoking, tobacco consumption and viral infection is casually mentioned and interpreted and no conclusion can be drawn since no details on these parameters has been collected. It is not clear how “Blinding” of subjects was done since with the methodology given; no blinding was possible. There seems to be a huge recruitment bias since the spread of subjects (delivering mothers) selection in the two study groups during the study period was not uniform and all controls were recruited in first few months while cases were spread during whole year.

Briefly, the Group expressed serious concern on basic methodological issues such as (i) how robust was the determination of the status of exposed mothers/first progenies of exposed mothers and unexposed mothers in the study? (ii) what was the definition of congenital malformation used in the study? (iii) what was the rationale of selecting sample size of 1,250 pregnancies in each group? (iv) how the blinding was done (v) the spread of subjects (delivering mothers) selection in the two study groups during the study period was not uniform resulting in heavy bias in the subject selection (vi) steps taken to avoid outcome assessment bias (vii) competency/training of the field workers administering the questionnaire to ensure quality of data collected (viii) validity of the folic acid deficiency and iron deficiency status of the delivering mothers (ix) analysis at variance with the objectives of the study etc.

Dr. SK Sharma
Chairman

Dr. RR Tiwari
Director
data collected (viii) validity of the folic acid deficiency and iron deficiency status of the delivering mothers (ix) analysis at variance with the objectives of the study etc.

To sum up, the Group appreciated the efforts of the Principal Investigator in executing the study and concluded that due to various methodological issues, problems of invalidated data and outcome assessment bias no firm conclusion can be drawn from this study. Group strongly recommended that this data, due to its inherent flaws, should not be put in public domain and shared at any platform. However, since the research subject is important, PI, if interested, may formulate another prospective study with robust study design incorporating the lessons learnt from the present study and various suggestions of Experts that emerged during the discussion. Further, if felt necessary, NIREH can be a part of the recently initiated ICMR-MoH&FW-WHO initiative of Congenital Malformation Registry.

Recommendations:

1. Group strongly recommended that this data, due to its inherent flaws, should not be put in public domain and shared at any platform.

2. However, since the research subject is important, PI, if interested, may formulate another prospective study with robust study design incorporating the lessons learnt from the present study and various suggestions of Experts that emerged during the discussion.

3. NIREH may become part of the recently initiated ICMR-MoH&FW-WHO initiative of Congenital Malformation Registry.

Dr. SK Sharma
Chairman

Dr. RR Tiwari
Director
स्वास्थ्य कार्यक्रम के अन्तर्गत चिन्हित जोखिम युक्त बच्चों की विशेष स्वास्थ्य दृष्टि से उपलब्ध कराने का प्रयास किया गया।

लक्ष्य:-
स्वास्थ्य कार्यक्रम के अन्तर्गत लगभग 70,000 बच्चों का स्वास्थ्य परीक्षण पूर्ण किया गया है। इनमें से चिन्हित 2400 जोखिम युक्त बच्चों को विशेष स्वास्थ्य सेवाओं का नाम दिया गया है।
इन जोखिम युक्त बच्चों में ऐसे बच्चे, जिन्हें शल्य विकिल्सा की आवश्यकता है, उन पर अधिक विशेष ध्यान देने के लिए एक टास्क फोर्स शल्य विकिल्सा पर स्थापित किया गया, जिसके द्वारा इन बच्चों का विशेष स्वास्थ्य परीक्षण पूर्ण किया गया।

टास्क फोर्स के द्वारा समाप्त किया गया है कि 29 जोखिम युक्त बच्चों की विशेष परीक्षण - कंलर डायलर, 3 बच्चों की सी.टी. स्केन, एवं 1 बच्चे को एम.आर.आई. की आवश्यकता है। इस सम्बन्धि विवरण निम्नानुसार है:-

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3. एम.आर.आई. 1 8000 400 8400 दिल्ली या बम्बई की संस्था

यह उल्लेखनीय है कि उपरोक्त सूचियां भोपाल के किसी भी शासनीय अस्पताल में उपलब्ध नहीं है। इन 33 बच्चों का विवेचन परीक्षण कराने का आवेदन आयुक्त है। जानकारी के लिये राशि ₹048000/- की आवश्यकता है।

इस के अतिरिक्त टारक फोर्स द्वारा दवाईयाँ, कैमिकल एवं कन्फ्रेमेंट्स, एवं उपकरणों की मस्तिष्क तथा रक्त रखाव के लिये राशि ₹5000/ का प्रस्ताव किया है। प्रस्ताव की पुर्तिलिपि सेवा में सलामत प्रेषित है।

उपरोक्तानुसार जोरकियों के बच्चों के विवेचन परीक्षण देहुदा राशि ₹5000/- तथा दवाईयाँ, कैमिकल एवं कन्फ्रेमेंट्स, एवं उपकरणों के रक्त रखाव देहु राशि ₹50 49000/- कुल राशि ₹50 97000/-

इस की स्थिरोत्त्व पूर्णता का काम कर्ड। यह राशि माग संख्या 72 लेख शीर्ष 3425 अन्य वैज्ञानिक अनुसंधान, 60 अन्य, 200 अन्य वैज्ञानिक निदानों को सहयोग, 6201 पुनर्वसु अध्ययन केंद्र, 23 अन्य प्रमाण आयोजनेतर मद तथा विकल्पन की होगी, तथा शासन की स्वीकृति उपरान्त इस केंद्र द्वारा राशि का साहाय्य कर दीन, गांधी मेडिकल कॉलेज, भोपाल को उपलब्ध हलाई जायेगी।

लॉन्च : प्रस्ताव

संवादी,
सेंटर फॉर रिटेलिजिंग स्टडीज, भोपाल. 
पुनर्जािल्प अध्ययन केन्द्र
मोपाल

विज्ञान- द्वारा जोखिमयुक्त बच्चों के लिए "स्पार्क-92" कार्यक्रम के अन्तर्गत 0-6 वर्ष की आयु के संख्या 70,000 बच्चों लागू हो रहे हैं। इस योजना का निर्माण कार्यक्रम 792 अंग्रेजी और हिंदी पीड़ितों के लिए लागू हुआ। बच्चों के अन्तर्गत दूसरा विकास उपकरण जोखिमयुक्त बच्चों के लिए स्थापित किया गया। जोखिमयुक्त बच्चों के लिए स्थापित विकास उपकरण बच्चों के स्थापित किया गया। जोखिमयुक्त बच्चों के स्थापित विकास उपकरण बच्चों के स्थापित किया गया। जोखिमयुक्त बच्चों के स्थापित विकास उपकरण बच्चों के स्थापित किया गया। जोखिमयुक्त बच्चों के स्थापित विकास उपकरण बच्चों के स्थापित किया गया। जोखिमयुक्त बच्चों के स्थापित विकास उपकरण बच्चों के स्थापित किया गया। जोखिमयुक्त बच्चों के स्थापित विकास उपकरण बच्चों के स्थापित किया गया। जोखिमयुक्त बच्चों के स्थापित विकास उपकरण बच्चों के स्थापित किया गया।
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<th>सं.क्र.</th>
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<th>मद में आर्थिक राशि</th>
<th>त्रिवेणी की गई राशि</th>
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<td>7.</td>
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उपरोक्त तालिका में कई वर्ष आर्थिक वर्ष व्यय तथा तर्कशय दर्शित गया है।
जवाब 1999-2000 के वर्ष को 2000-2001 के आर्थिक वर्ष में कोई आर्थिक वर्ष नहीं दर्शित किया गया है। अतः त्यागी काया के संबंध में केवल यहू निकट वर्ष उत्तम है।
Minutes of the meeting on the issues related with Curative Petition (c) No. 345-347/2010 in CA no. 3187-88/2018, UoF Vs Union Carbide Corporation and others held on 20th March, 2019 at 3 PM in Room No. 501 “A” wing, Shastri Bhavan, New Delhi under the Chairmanship of Secretary, Department of Chemicals and Petrochemicals.

1. The list of participants is annexed.

2. Secretary (C&PC) welcomed the participants. Joint Secretary (Che), D/o C&PC briefed about the Curative Petition filed in the Supreme Court claiming enhanced compensation from UCC and others. He informed that D/o C&PC has filed an application before the Hon’ble Chief Justice of India for early hearing of the Curative Petition and upon hearing, the Court directed to list the Curative Petitions for open court hearing in the month of April, 2019.

3. The enhanced compensation claimed in the Curative petition on account of Claim –1 i.e amount of compensation due to difference between the number of cases assumed by the court and the actual number, was discussed in detail. Shri S.Wasim A. Qadri, Advocate, Supreme Court expressed that the other party may claim that the compensation amount paid to Gas victims appears to be adequate (first original compensation and secondly on pro-rata basis as per the direction of the Supreme Court) and requested to substantiate Claim-1 with some corroborative evidences like data on effect of BGLD on the next generation, money spent on Hospital and R&D, impact of BGLD on offspring of Gas victims etc.

4. The representative of GoMP informed that the BGLD occurred in December, 1984 and the Hon’ble Supreme Court finally settled the litigation on the compensation amount payable to gas victims in Feb. 1989. The actual disbursement of the original compensation started in 1992 and Pro-rata compensation began in 2004, as per the directions of the Hon’ble Supreme Court. Had the compensation amount been settled and disbursed in time, the situation of disbursement of compensation on pro-rata basis would not have occurred. Moreover, keeping the nature of disabilities of victims, the amount of compensation paid is little.

5. Dr. Pallavi Jain Govil, Principal Secretary to the Govt. of M.P (through Video Conferencing) stated that at the point of settlement for compensation for the incident, the calculation of number of victims were made mathematically but the full impact of the event was felt many years subsequent to the event. The disabilities that occurred over the years of BGLD are much more. The focus has to be on the gap between the existing victims at the time of settlement and the number of victims likely to be added or added upon, thereafter.
List of participants

Government of India
4. Shri P. Raghavendra Rao, Secretary, D/o of Chemicals & Petrochemicals - On chair
2. Shri Sanir Kumar Biswas, Jr. Secretary, D/o Chemicals & Petrochemicals
3. Shri Sanjay Krishna Navale, Dy. Secretary, D/o Chemicals & Petrochemicals
4. Dr. R.S. Bhalwal, Scientist "C" and Head (HCT), ICMR, D/o Health Research
5. Shri A.N. Singh, Scientist "E", M/o Environment, Forest and Climate Change
6. Ms. Arpi Chopra, Dy. Legal Adviser, D/o Legal Affairs

Government of Madhya Pradesh
7. Dr. Pallavi Jain Goyal, Principal Secretary to the Govt. of M.P (through Video Conferencing)
8. Shri K.K. Dubey, Dy. Secretary, BCDTR&R Department, Govt. of M.P

Office of the Welfare commissioner, Bhopal Gas Victims, Bhopal
9. Shri Shashant Huddar, I/e Registrar, O/o Welfare Commissioner, Bhopal
10. Shri D.K. Singh, Additional Welfare Commissioner, Bhopal

Advocate
11. Shri S. Wasim A. Qadri, Advocate, Supreme Court of India